



**Indian Institute of Science Bangalore  
560012**

**Website :** <https://IISc.ac.in/business-with-IISc/tenders/>

**Contact: 080-2293 2765/2202/2203**

**TENDER DOCUMENT  
(e-Procurement)**

**For**

**“Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth  
Sciences, IISc, Bangalore”**

*Tender No: IISc/Tender 2/2019-20, dated:17<sup>th</sup> June 2019*

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**1: Short Term Tender Notification**

Scope of Work	<b>“Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore”</b>
Estimated Value of work	Rs 460,00,000/-
Period of Work Completion	15 (Fifteen) Months from the date of Work Order
Name of the Client	Indian Institute of Science, Bangalore
Address of the Client	The Project Engineer cum Estate Officer Indian Institute of Science Bangalore – 560 012 Tel No. 080-2293 2765/2202/2203 e-Mail: office.ccmd@IISc.ac.in
Tender Processing Fee	As per e-procurement portal
Submission of Tender Document	e-procurement portal- <a href="https://eproc.karnataka.gov.in">https://eproc.karnataka.gov.in</a> Helpline no: 080-25501216/25501227
Amount of Earnest Money to be deposited with the Tender	Rs. 6,90,000/-
Last date and Time for online submission (uploading) of tender	08.07.2019 at 15.00 hrs.
Date and Time of opening of Tender (Technical Bid)	09.07.2019 at 16:15 hrs.
Date and Time of opening of Tender (Financial Bid)	Shall be intimated to technically qualified bidders.
Date, Time & Venue of Pre-bid meeting	01.07.2019 at 16.00 hrs. Centre for Campus Management and Development Indian Institute of Science Bangalore – 560 012

## 2. Scope of Tender

The REGISTRAR, Indian Institute of Science invites tenders from eligible Bidders, for **“Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore”** (as defined in these documents). The eligible Bidders may submit tenders”

### 2. Eligibility Criteria

- 2.1 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of India or any State Government of Union of India. (authorized signatory should provide an undertaking).
- 2.2 Tenders from Joint ventures are not acceptable.
- 2.3 All Bidders shall provide the required information accurately and sufficient detail in Section 3: Qualification Information.
- 2.4 Any reputed Individual / firm/ Company registered with CPWD / KPWD / Railways / MES of Class I Civil Contractors are eligible to apply.
- 2.5 The Tenderer shall have executed and completed successfully in the last five years i.e., between 2014-15 to 2018-19 a single work of similar nature of value **not less than Rs. 3,68,000,00/-**.
- 2.6 The Tenderer shall have achieved in at least two consecutive financial years a minimum sum of turnover not less than **Rs. 9,20,00,000/-in the last five years i.e. 2014-15 to 2018-19**.
- 2.7 Work completion certificate for having completed at least one work of similar nature of value not less than the estimated value of contract certified from the competent authority not below the Rank of Executive Engineer or equivalent shall be uploaded. The work completion certificate shall mention the nature of work, items of work executed and the date of commencement scheduled date of completion and actual date of completion of the work.
- 2.8 The tenderer shall upload the valid and present certificate copies of PAN, GST, Contractor's Registration passbook in technical bid, **failing which the tender will be rejected**. If necessary, bidder shall produce all the original documents for verification.
- 2.9 If the rate quoted by the Contractor for each category of works is below the estimated value of the work, the contractor should pay the difference of amount in favour of The Registrar, IISc in the form of DD or Pay order or FDR (Fixed deposit receipt ) or Bank Guarantee as an additional security deposit before entering into Agreement. The same will be refunded only after satisfactory completion of the work.
- 2.10 The work shall be carried out as per the directions of the Project Engineer cum Estate Officer and Project Engineer.
- 2.11 Blacklisted contractors/in govt/Quasi govt/boards/BBMP etc., are not eligible to quote, if found such tenders will be rejected. One who (Contractor/Agency is penalized due to delay in completion of the previous work, those bidders will be rejected.
- 2.12 The successful Bidder shall execute an Agreement within 10 days from the date of Receipt of intimation from this office, The Tender Document will form the part and parcel of the agreement, failing which the tender will deem to be get cancelled.
- 2.13 The material shall be got approved by the Project Engineer cum Estate Officer, IISc before execution of the work.
- 2.14 Further details of the work can be obtained from this office.
- 2.15 The rates quoted in the schedule shall be inclusive of all applicable taxes (inclusive of GST/CESS/Royalty etc.).
- 2.16 The IISc. reserves the right to accept / reject any or all the tenders without assigning any reasons.
- 2.17 The work shall be commenced with all men and machinery within 10 days from the date of work order, failing which it would be presumed that the successful tenderer is not interested in the work and action will be taken to get the work executed through alternate agency at the risk and cost of the former Tenderer.
- 2.18 Conditional tenders will not be accepted.

- 2.19 Bidders who meet the above specified minimum qualifying criteria, shall be eligible.
- 2.20 Even though the Bidders meet the above criteria, they are subject to be disqualified if they have:
- Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
  - Record of poor performance such as abandoning the works, not properly completed the contract, inordinate delays in completion, litigation history, or financial failures etc.
3. Site visit:
- The Bidder at his own responsibility is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for the Works. The cost of visiting the Site shall be at the Bidder's own expense.

### **B. Tender documents (Two bid system – Technical & Financial)**

The Tender document can be downloaded from e-procurement website: <https://www.eproc.karnataka.gov.in>

It may be noted that all subsequent notifications, changes and amendments on the project/document would be posted only on the same website: <https://www.eproc.karnataka.gov.in>.

**The bidders will be required to register themselves with the centre for e-governance to participate in the bidding.** Necessary details could also be obtained over telephone at 080-25501216/25501227.

#### **4. Content of Tender documents**

The bidders should go through the Tender Document and submit online response through e-procurement portal only.

#### **5. Amendment of Tender documents**

- 5.1 Before the deadline for submission of tenders, the IISc. may modify the tender documents by issuing corrigendum / addendum.
- 5.2 Such corrigendum/ addendum thus issued shall be part of the tender documents and shall be published online in e-Procurement portal.
- 5.3 To give prospective Bidders reasonable time in which to take corrigendum/ addendum into account in preparing their tenders, the IISc. shall extend as necessary the deadline for submission of tenders.

### **C. Preparation of Tenders**

#### **6. Documents comprising the Tender**

- 6.1 **The Technical Bid** submitted by the Bidder shall contain the documents as follows:
- (a) Earnest Money Deposit & Tender processing fee paid in any of the payment modes specified in e-Procurement platform.
  - (b) Qualification Information as per formats to comply the task created in the e-Procurement Portal under General Terms and Conditions and Technical parameters and Documents required from Bidder.
  - (c) Any other documents / materials required to be completed and submitted by Bidders in accordance with these instructions. The required documents shall be filled in without exception.

**6.2 The financial bid** submitted by the Bidder shall contain the documents as follows:

Priced Bill of Quantities; online through e-procurement portal, no hardcopy of commercials should be attached or disclosed.

**7. Tender prices**

7.1 The contract shall be for category of works / whole works based on the priced Bill of Quantities submitted by the Bidder.

7.2 deleted

7.3 All prevailing duties, taxes, and other levies like GST/CESS/Royalty payable by the contractor under the contract, or for any other cause, shall be included in the rates, prices and total Tender Price submitted by the Bidder.

**8. Tender validity**

8.1 Tenders shall remain valid for a period not less than **180 days** after the deadline date for tender submission. A tender valid for a shorter period shall be rejected by the IISc. as non-responsive.

8.2 In exceptional circumstances, prior to expiry of the original time limit, the IISc. may request that the Bidders may extend the period of validity for a specified additional period. The request and the Bidders' responses shall be made in writing or by email. A Bidder may refuse the request without forfeiting his earnest money deposit. A Bidder agreeing to the request will not be required or permitted to modify his tender, but will be required to extend the validity of his earnest money deposit for a period of the extension, and in compliance with Clause 9 in all respects.

**9. Earnest money deposit**

**9.1 Earnest Money Deposit/ Bid security**

The Bidder shall furnish, as part of his tender, earnest money deposit (EMD) of **Rs.6,90,000/-**. The Bidder can pay the Earnest Money Deposit (EMD) in the e-Procurement portal using any of the following payment modes:

- Credit Card
- Direct Debit
- National Electronic Fund Transfer (NEFT)
- Real Time Gross Settlement (RTGS)
- Over the Counter (OTC)

EMD amount will have to be submitted by the bidder taking into account the following conditions:

- a. EMD will be accepted only in the form of electronic form and not through Demand Draft or Bank Guarantee and will be maintained in E-procurement Bank account until the finalization of the Tender.
- b. The entire EMD amount for a particular tender has to be paid in a single transaction

9.2 The earnest money deposit of unsuccessful Bidders will be returned after awarding the contract to the successful bidder.

9.4 The earnest money deposit may be forfeited:

- (a) If the Bidder withdraws the Tender after tender opening during the period of tender validity;
- (b) If the Bidder fails within the specified time limit to
  - (i) Sign the Agreement; or

- (ii) Furnish the required Security deposit

#### **10. Format and signing of Tender**

Successful Bidder shall sign all the pages of the tender document as a token of acceptance of all the terms and conditions of the contract.

#### **D. Submission of Tenders**

11. Tenders must be submitted on-line in the e-Procurement portal by the Bidder before the notified date and time.

#### **12. Deadline for submission of the Tenders**

The Bidder shall submit a set of hard copies of all the documents in a sealed cover to IISC., required as a pre-qualification bid (Technical bid) which were uploaded through e-procurement portal. In the event of any discrepancy between them, the original uploaded document in e-procurement shall govern.

The IISC. may extend the deadline for submission of tenders by issuing an amendment in accordance with Clause 5, in which case all rights and obligations of the IISC and the Bidders previously subject to the original deadline will then be subject to the new deadline.

#### **13. Late Tenders**

In e-procurement system, Bidder shall not be able to submit the bid after the bid submission time and date as the icon or the task in the e-procurement portal will not be available. IISC will not be liable (or) responsible for any delay due to unavailability of the portal and the Internet link.

#### **14. Modification and Withdrawal of Tenders**

- 14.1 Bidder has all the time to modify and correct or upload any relevant document in the portal till last date and time for Bid submission, as published in the e-procurement portal.
- 14.2 The Bidder may withdraw his tender before the notified last date and time of tender submission.
- 14.3 No Tender may be modified after the deadline for submission of Tenders.
- 14.4 Withdrawal or modification of a Tender between the deadline for submission of Tenders and the expiration of the original period of Tender validity specified in Clause 8.1 above or as extended pursuant to Clause 8.2 may result in the forfeiture of the earnest money deposit pursuant to Clause 9.
- 14.5 Discount or price modification may be offered by bidders as per portal format

#### **E- Tender opening and evaluation**

#### **15. Tender Opening:**

- 15.1 The IISC will open all the Tenders received in the presence of the Bidders or their representatives who choose to attend on the specified date, time and place specified. In the event of the specified date of Tender opening being declared a holiday for the IISC. the Tenders will be opened at the appointed time and location on the next working day.
- 15.2 The IISC. will evaluate and determine whether each tender meets the minimum qualification /eligibility criteria.

- 15.3 Bidder to submit all the Original Documents, which are submitted in e-procurement portal, to the IISC. for verification at the time of opening of Tender.
- 15.4 The IISC record the Tender opening

## **16. Process to be confidential**

- 16.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.

## **17 Clarification of Tenders**

- 17.1 To assist in the examination, evaluation, the IISC. may, at his discretion, ask any Bidder for clarification of his Tender. The request for clarification and the response shall be in writing or by e-mail along with the section number, page number and subject of clarification, but no change in the price or substance of the Tender shall be sought, offered, or permitted.
- 17.2 Subject to sub-clause 17.1, no Bidder shall contact the IISC. on any matter relating to its Tender from the time of the Tender opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the IISC., he should do so in writing.
- 17.3 Any effort by the Bidder to influence the IISC. in the IISC.'s Tender evaluation, or contract award decisions may result in the rejection of the Bidders' Tender.

## **18. Examination of Tenders and determination of responsiveness**

- 18.1 Prior to the detailed evaluation of Tenders, the IISC. will determine whether each Tender (a) meets the eligibility criteria defined in Clause 2; (b) has been properly signed; (c) is accompanied by the required earnest money deposit and; (d) is substantially responsive to the requirements of the Tender documents.
- 18.2 A substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tender documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Tender documents, the IISC.'s rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Tenders.
- 18.3 If a Tender is not substantially responsive, it will be rejected by the IISC., and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

## **19. Correction of errors**

- 19.1 After final uploading of bid on portal, no correction of errors is permitted. Correction of error in tender will be uploaded as corrigendum/addendum

## **20. Evaluation and comparison of Tenders**

- 20.1 Opening of the Financial bid will be preceded by the evaluation of the Pre-qualification Offer (Technical bid), vis-a-vis the capability, capacity and credibility of the Bidder. Evaluation of the Pre-qualification Offer will be done by the Evaluation Committee constituted for the purpose. After



evaluation is completed, all the Bidders who are qualified will be notified and will be intimated at the time of opening of the Financial bid. Financial bid will be opened in the presence of those who choose to be present or even in the absence of any Bidder.

The IISc. will evaluate and compare only the Tenders determined to be substantially responsive in accordance with Clause 18.

- 20.2 In evaluating the Tenders, the IISc. will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:

- (a) Making any correction for errors pursuant to Clause 19 and
- (b) Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 14.5.

- 20.3 The IISc. reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Tender documents or otherwise result in unsolicited benefits for the IISc. shall not be taken into account in Tender evaluation.

**20.4 NEGOTIATIONS**

The Bidder though technically qualified and who's financial offer is the lowest, fails to convince the Tender Evaluation Committee of his capability, capacity, credibility, his offer may be reviewed and the Bidder intimated accordingly. In such case, the Bidder, who has quoted the lowest price, may be considered and his price may be negotiated.

## **F. Award of Contract**

### **21. Award criteria**

- 21.1 Subject to Clause 22, the IISc. will award the Contract to the Bidder whose Tender has been determined to be substantially responsive to the Tender documents and who has offered the lowest evaluated Tender Price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 2, and (b) qualified in accordance with the provisions of Clause 3.

### **22. IISc.'s right to accept any Tender and to reject any or all Tenders**

- 22.1 Notwithstanding Clause 21, the IISc. reserves the right to accept or reject any Tender, and to cancel the Tender process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the IISc.'s action.

### **23. Notification of award and signing of Agreement**

- 23.1 The Bidder whose Tender has been accepted will be notified of the award by the IISc. prior to expiration of the Tender validity period by e-mail or confirmed by letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Intent") will state the sum that the IISc. will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 23.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 24.
- 23.3 The Agreement will incorporate all agreements between the IISc. and the successful Bidder /

Bidders. It will be kept ready for signature of the successful Bidder in the office of IISc. following the notification of award along with the Letter of intent. The successful Bidder will sign the Agreement and deliver it to the IISc.

- 23.4 Upon the furnishing by the successful Bidder of the Security deposit, the IISc. will issued formal work order

#### **24. Further Security deposit (FSD)**

- 24.1 6.0% on the running bills and final bill in addition to Earnest Money Deposit. When the FSD deducted from R.A Bills of the contractor @ 6.0% of the bill amount exceeds Rs.1.00 Lakh, the amount in excess of Rs. 1.00 Lakh may, at the request of the bidder, be released to him against the production of the bank guarantee issued from a Nationalised / Scheduled Bank only for an equal amount in the prescribed form. The bank guarantee should be valid till the completion of the defect liability period.
- 24.2 If the security deposit is provided by the successful bidder in the form of a Bank Guarantee, it shall be issued either by a Nationalized/Scheduled bank
- 24.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 24.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the earnest money deposit.

#### **25. Corrupt or Fraudulent practices**

- 25.1 The IISc. requires that the Bidders observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, IISc.:
- (a) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
  - (b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a IISc contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a IISc contract.

### 3. DECLARATION OF TENDERER

**Name of Work:** Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore

- 3.1 I/We, declare that specifications, plans, designs and conditions of contract on which the rates have been quoted are completely studied by me/us before submitting this tender.
- 3.2 I/We declare that I/We have inspected the work spot and have made myself/ourselves thoroughly conversant and satisfied as regards the field conditions prevalent there, regarding the materials, labour and the particulars of various leads with which the materials required to be brought for the work.
- 3.3 I/We, declare that the rates quoted for items of works for which now tenders are called for are inclusive of leads with which I/We propose to bring the materials whether it is from nearest approved quarry or from any other approved quarries. I/We will not have any claims for higher leads, and my/our quoted rates are with all leads and lifts etc.,
- 3.4 I/We, declare that the rates tendered by me/us for this work have not been witnessed by any other contractor/s who has/have tendered for this work.
- 3.5 I/We, declare that I/We, have understood all the conditions mentioned above and also the specifications stipulated in tender condition either by going through myself/ourselves or by getting translated into my/our own mother tongue.

#### 4. INSTRUCTIONS TO TENDERER

- 4.1 **Cement & Steel** - The contractor has to make his own arrangements for the procurement of Cement & Steel of approved brands and make required for the Project. For all the cement works (including RMC) The cement to be used should be Ordinary Portland Cement (OPC) - 43 Grade of Coromandal / Ultratech / ACC / PPC for GRIHA Project. The steel to be used shall be TMT Fe 550 of TATA/ SAIL/RINL (Primary plants only)  
Note: No blended cement will be permitted and M sand may be used for the construction works at site.
- 4.2 **Water Supply** - Contractor is permitted to dig bore wells required at work site at their own risk and cost. After the completion of work the agency has to hand over the bore well along with the pump and panel board in working condition to the Institute completely at free of cost and no extra charges can be claimed towards this. If sufficient quantity of water is not available then the water required for the construction shall be arranged by the contractor them self at their own risk and cost.
- 4.3 **Supply of Electricity** - Electricity required for construction shall be arranged by the contractor himself. Electricity if supplied to the contractor by the Institute will be metered and amount will be recovered in the Bills as per actual at rates fixed by the Institute. Supply of electricity from the Institute is not mandatory. Non-supply of electricity by the Institute cannot be held as reason for shortfall in progress.
- 4.4 **Royalty on Materials** - Rates quoted for items shall be inclusive of Royalty and all other taxes, which are in force or levied from time to time or become leviable / payable by him to any authority. There will be no deduction of royalty if bidder/contractor use royalty paid material for building.
- 4.5 **Mobilization Advance-** *For the speedy execution of work, Mobilization advance will be paid to the contractor @ 7.50% of the Contract Value which will be paid after entering into the agreement against production of Bank Guarantee issued by a Public Sector Undertaking Bank/Scheduled commercial Bank/Nationalized Bank for 110% of advance amount value. BG for the Advance amount value shall be valid till the advance together with interest is recovered. A simple interest of 10% Per Annum will be charged on the advance amount.*
- 4.5.1 **Recovery of Mobilization Advance:** *The recovery of Mobilization Advance along with the simple interest of 10% per Annum, will be effected from the 2<sup>nd</sup> Running Bill onwards and shall be recovered in full in 5 monthly installments in their Running account bills.*
- 4.6 Income tax will be deducted as per the orders of the Govt. in vogue.
- 4.7 deleted
- 4.8 The items like plastering, flooring etc., are for specified thickness only and any additional thickness that may need to be executed as a result of existing structure is considered incidental and covered under quoted rates and no additional payments will be entertained in this regard. Also Ant termite treatment has already been executed up to ground level and only needs to be executed before plinth protection. Rates may be quoted keeping such things in hindsight.
- 4.9 The rates to be quoted including all taxes with GST and shall not be quoted above 125% and below 75% of the prevailing rates. otherwise above 125% and below 75% of the Amount will be treated as unbalanced amount which will be accounted for security deposit

## 5: QUALIFICATION CRITERIA

The information to be filled in by the Bidder hereunder will be used for purposes of computing Tender capacity as provided in Clause 2 of the Instructions to Bidders. This information will not be incorporated in the Contract.

- 1.1 Name of Agency as registered :
- Postal Address for communication :
- Principal Place of business :
- Name of the Owner :
- Nature of Company/individual/partnership/firm etc :
- Name of the authorized person with contact details :
- Constitution or legal status of Bidder:
- Place of Registration :
- [Attach self-attested photo copy]

- 1.2 Total value of Building / ~~Painting~~ works executed and payments received in the last five years (In Rs. Lakhs)

2014-15 \_\_\_\_\_

2015-16 \_\_\_\_\_

2016-17 \_\_\_\_\_

2017-18 \_\_\_\_\_

2018-19 \_\_\_\_\_

- 1.3 (a) Details of Works performed as a Prime Contractor (in the same name) on works of similar nature over during the five years specified in 1.2 above.

Project Name	Name of Employer	Description of work	Contract number	Value of Contract	Stipulated Period of completion	Actual date of completion	Remarks (Reason for delay)

[Attach satisfactory certificate and date of completion from the concerned Project Engineer not below the rank of Executive Engineer or Competent Authority]

- (b) Details of works performed in Govt / Semi Government / Reputed Firm single work of similar nature of value **Rs.368,00,000** of the amount put to tender & above carried out during the five financial years specified in 1.2 above.

Project Name	Name of Employer	Description of work	Contract number	Value of Contract	Date of work order	Stipulated Period of completion	Actual date of completion	Remarks (Reason for delay)

[Attach satisfactory certificate and date of completion from the concerned Project Engineer not below the rank of Executive Engineer or Competent Authority]

1.4 Information on works for which Tenders have been submitted and works which are yet to be completed as on the date of this Tender.

(A) Existing commitments and on-going works:

Description of work	Place & state	Contract Number And Date	Name & Address of the Customer	Value of contract Rs. Lakhs	Specified period of completion	Value of work remaining to be completed (Rs. Lakhs)	Anticipated date of completion
1	2	3	4	5	6	7	8

[ Details to be furnished with necessary work order signed from concerned Project Engineer not below the rank of Executive Engineer or Competent Authority. Work order/Testimonials will be verified, if required]

(B) Works for which Tenders already submitted:

Description of work	Place & state	Name & Address of the Customer	Estimated value of work Rs in lakhs	Stipulated period of completion	Date when decision is expected	Remark If any
1	2	3	4	5	6	7

1.5. Reports on the financial standing of the tendered, such as profit and loss statements and auditor's reports (audited balance sheet) and Annual Turn Over for the last five years to be uploaded as per the format below:-

Sl.No	Year	Turn Over Amount	Remark
1	2	3	7
2	2014-15		
3	2015-16		
4	2016-17		
5	2017-18		
6	2018-19		

[ Report on the financial standing of the tendered, such as profit and loss statements and auditor's report (Audited balance sheet)for the last five years to be uploaded

**\*Note: A separate certificate from Chartered Account stating turn over for the last five years to be submitted]**

- 1.6 Evidence of access to financial resources to meet the qualification requirement specified in ITT Clause 3.3 (b): Cash in hand, Letter of Credit etc. List them below and attach certificate from the Banker in the suggested format as under:

**BANKER'S CERTIFICATE**

This is to certify that M/s. .... is a reputed company with a good financial standing. If the contract for this work, namely ..... (name of the work) is K/W – 3 Works /Open awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. .... (30% of the Estimated value of work as in page 3, Item 2) to meet the working capital requirements for executing the above contract

Sd/-

Name of the Bank, Senior Bank Manager

Address:.....

Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the IISc..

Income tax returns to be uploaded duly signed by competent Authority

## **6 SPECIAL CONDITIONS**

- Establishment of Labour Camp is strictly prohibited in the premises of Indian Institute of Science Campus. Essential labor for round the clock work at site will be allowed with prior permission of Project Engineer cum Estate Officer.
- Bill Of Quantities or commercial bid has been disabled in the e-procurement portal of Government of Karnataka, which is as per the Government Orders vide FD/165/EXP-12/2017 dated 21/03/2017 and FD/539/EXP-12/2017 dated 02/06/2017. Uploading the BOQ scanned document shall lead to disqualification of the bid. Whereas the prices of all the line items are to be entered on the e-procurement portal with all taxes and statutory levies inclusive of GST .
- Any damage to the existing service lines during execution of work shall be got rectified by the tenderer at his own cost and risk.
- Tenderer shall use new shuttering material exclusively for this work
- Only 43 Grade OPC cement of brand Birla Super / ACC / Ultra tech shall be used.
- The reinforcement steel used shall be of Grade Fe 550 tar steel of brand TISCO / SAIL / JSW / TATA.
- Concrete Design Mix shall be got approved by the competent authority
- Debris shall be disposed off to an undisputed place of Bangalore outskirts as per the direction of the Engineer-in-Charge, when ever required.
- One who is (Contractor/Agency) penalized by the employer due to delay in completion of work, those tenderer will be rejected. Any bidders who is served with a slow progress of the work notice for inadequate deployment of Labors and or any mobilization of material resources in on going project is liable for rejection or for suppression of information at any stage of evaluation
- Labour employed at site will not be allowed to use cell phone while working at site.



## **7. GENERAL CONDITIONS**

### **7.1 DEFINITIONS OF TERMS**

In constituting these conditions and specifications, the following expressions shall have the meaning, therein assigned to them unless there is something repugnant in the subject of context in consisting with such meanings.

- 7.1.1 Institute shall mean the “Indian Institute of Science, Bangalore”.
- 7.1.2 “Office” shall refer to the Office of the Project Engineer cum Estate officer.
- 7.1.3 “Contractors” shall mean the tenderer whether a firm, registered company, partnership or any individual whose tender has been accepted by Institute or by an Officer (duly authorized in this behalf) on behalf of the Institute and who has entered into agreement with Institute for due fulfillment of the contract and shall include the legal representatives, successors, heirs and assignees of the tenderer.
- 7.1.4 “Engineer” shall mean the “Project Engineer cum Estate officer”, Indian Institute of Science, Bangalore or such other officer as may be appointed to call as the Project Engineer cum Estate officer for the purpose of the contract and shall also mean and include other officers of equivalent rank directly in charge of the work or any part thereof under administrative control of the Director, IISc, Bangalore-12.
- 7.1.5 When the Engineer is named as final authority, it includes all the above mentioned officers and in such matters, the contractors shall have the right of appeal against the orders up to the Director, IISc, Bangalore, whose decision shall be final and legally binding on all the parties concerned.
- 7.1.6 The Project Engineer cum Estate officer named as final authority for any decision taken, shall mean only the Director, IISc, Bangalore or his duly authorized assistant.
- 7.1.7 The Engineer in charge shall mean the Project Engineer cum Estate officer directly in charge of the work or his duly authorized assistants.
- 7.1.8 Plant shall mean and include any or all plants, machinery, tools and other implements of all description necessary for the execution of the work in a safe and workmen like manner.
- 7.1.9 The expression “Works” where used in these conditions shall unless thereby something in the subject or contract repayment to such construction, be construed to mean the work or the works constructed to be executed under or virtue of the contract whether temporary or permanent and whether original, altered, substituted or additional.
- 7.1.10 “Contract and contract document” shall mean and include the notice inviting tenders, proceedings of the pre bid meeting, the stamped agreement, conditions of contract, specifications and Schedules ‘B’, drawings and all other connected documents with tender schedule.
- 7.1.11 “Specifications” shall mean the specifications annexed and where these are not specifically mentioned shall be as may be detailed and necessary due to particular nature of work as approved by the Project Engineer cum Estate officer.
- 7.1.12 “Site” shall mean and include all the area in which operations in respect of the work are carried out. This shall also include materials stacking yards and the area where temporary structures are put up for installing any machinery etc.

- 7.1.13 “Tests” shall mean such tests as are required to be carried out either by the contractor or by the Project Engineer cum Estate officer from time to time on completion as detailed in the specifications before the work is certified as being satisfactory and is taken over by the Project Engineer cum Estate officer.
- 7.1.14 “Month” shall mean a Calendar month.
- 7.1.15 “**Prime contractor**” mean a firm that performs construction work itself and that the work is directly entrusted to the firm by the owner / Government / local body / Quasi Government / Government under taking.

Words used in singular shall also include the plural & vice-versa where the context so demands.

## **7.2 GENERAL NOTES & CONDITIONS**

### **7.2.1 CONTRACTOR TO INSPECT SITE:**

The contractor shall visit and examine the construction site and satisfy himself as to the nature of the existing roads or other means of communications, the character of the soil for the excavations, the extent and magnitude of the work and facilities for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra for charges made in consequence of any misunderstanding or incorrect information on any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the contractor in connection with obtaining information for submitting this tender including his visits to the site or efforts in compiling the tender shall be borne by the Tenderer and no claims for reimbursement thereof shall be entertained. .

### **7.2.2 ACCESS TO SITE:**

The Contractor is to include in his rates for forming access to the site, with all temporary roads and gangways required for the works.

### **7.2.3 SETTING OUT:**

The Contractor shall set out the building in accordance with the plans. All grid/centre lines shall be pegged out to the satisfaction of the Engineer. The Contractor shall be responsible for the correctness of the lining out and any inaccuracies are to be rectified at his own expense. He will be responsible for taking ground levels of the site before setting out and recording them without any extra charge.

The Contractor shall construct and maintain proper bench mark at the intersection of all main walls, columns, etc., in order that the lines and levels may be accurately checked at all times.

### **7.2.4 TREASURE TROVE:**

Should any treasure, fossils, minerals, or works of art of antique interest be found during excavation or while carrying out the works, the Contractor shall give immediate notice to the Engineer of any such discovery and shall make over such finds to the Institute.

### **7.2.5 ACCESS FOR INSPECTION;**

The Contractor is to provide at all times during the progress of the works and the maintenance period proper means of access, with ladders, gangways etc., and the necessary attendants to move and adapt as directed for the inspection of measurement of the works by the Engineer or their representatives.

### **7.2.6 ATTENDANCE UPON ALL TRADERS:**

The Contractor shall be required to permit tradesmen/ Specialized agencies appointed by the employer to execute works like water supply, Sanitary, Electrical installation, lifts, air conditioning, hardware and other specialized works. The contractor shall also permit the above mentioned agencies to use his scaffolding and retain the scaffolding till such works are completed. The rates quoted by the contractor shall be inclusive of the above facility.

### **7.2.7 GATEKEEPER AND WATCHMAN:**

The Contractor from the time of being placed in possession of the site must make arrangements for watching, lighting and protecting the work, all materials, workmen and the public by round the clock on all days including Sundays and holidays at his own risk and cost.

### **7.2.8 STORAGE OF MATERIALS:**

The Contractor shall provide for necessary sheds of adequate dimension for storage and protection of materials like cement, steel, lime, timber and such other materials including tools and equipment which are likely to

deteriorate by the action of sun, wind, rain or other natural causes due to exposure in the open. The cement storage site shall be leak proof and shall hold at least 4 months requirement. All such sheds shall be cleared away and the whole area left in good order on completion of the contract to the satisfaction of the Engineer.

All materials which are stored on the site such as bricks, aggregates etc., shall be stacked in such a manner as to facilitate rapid and easy checking of quantities of such materials.

#### **7.2.9 COST OF TRANSPORTING:**

The Contractor shall allow in his cost for all transporting, unloading, stacking and storing of supplies of goods and materials for this work on the site and in the places approved from time to time by the Engineer. The Contractor shall allow in his price for transport of all materials controlled or otherwise to the site.

#### **7.2.10 W.C. AND SANITARY ACCOMMODATION AND OFFICE ACCESSORIES AND ACCOMMODATION:**

The contractor shall provide at his own cost and expense adequate closet and sanitary accommodation complying in every respect to the rules and regulations in force of the local authorities and other public bodies, for his workmen, for the workmen of nominated sub-contractors and other contractors / specified agencies working in the building, the Project Engineer of works and other Institute agents connected with this building project and maintain the same in good working order.

The Contractor shall also provide at his own expense adequate office accommodation for the Project Engineer of works preferably contiguous to his office and shall maintain the same in a satisfactory condition and shall provide light, fan and attendant etc., for the same and shall remove them after completion of the works. He shall arrange to provide latest survey Instruments and at all times maintain the same in good working order at site, to enable the Project Engineer of works or other representative of Institute to check the lines and levels of the work.

#### **7.2.11 MATERIALS:**

Materials shall be of approved quality and the best of their kind available and shall conform to I.S. specifications. The Contractor shall order all the materials required for the execution of work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work. The work-involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the Project Engineer.

#### **7.2.12 TO ASCERTAIN FROM CONTRACTORS FOR THE OTHER TRADES.**

The Contractor shall ascertain from all agencies / Sub-contractors all particulars relating to their work with regard to the order of its execution and the position in which chases, holes and similar items will be required; before the work is taken in hand as no patch works shall be allowed for cutting away work already executed in consequence of any neglect to ascertain these particulars before hand.

#### **7.2.13 SAMPLE APPROVAL:**

Before ordering materials, the Contractor shall get the samples approved from the Project Engineer cum estate officer well in time.

#### **7.2.14 TESTING OF WORK AND MATERIAL:**

The Contractor shall, if required by the Engineer arrange to test materials and/or portions of the works at his own cost in order to prove their soundness and efficiency. If after any such test the work or portion of works is found in the opinion of the Engineer to be defective or unsound, the Contractor shall pull down and redo the same at his own cost. Defective materials shall immediately be removed from the site at his own cost.

#### **7.2.15 MECHANICAL PLANT:**

The Contractor will be required to provide and maintain in working order the following power-driven equipment's during the construction-work and number of equipment's shall depend on the volume of work involved pertaining to this project as and when required.

1. Concrete mixers of required capacity.
2. Concrete pumps.
3. Vibrators
4. Concrete testing equipment.
5. Stone cutting machines.
6. Jack Hammers.
7. Pumps with required capacity.
8. Air compressors with required capacity.
9. Diesel Generators.
10. Welding, cutting and bending equipment.
11. Builders hoist.
12. Tipper/Dumper.
13. Tractor with Trailer.
14. Earth Compactor.
15. Earth rammer
16. Steel tubular scaffolding.
17. Slab shuttering
18. Floor polishing machines.
19. Surveying instruments with total station.
20. Any other machinery required during the execution of work.

#### 7.2.16 **FOREMAN AND TRADESMEN:**

All Tradesmen shall be experienced men properly equipped with suitable tools for carrying out the work of carpentry and joinery and other specialist trades in a first class manner and where the Engineer deem necessary, the Contractor shall provide such tools which are considered necessary for carrying out of the work in a proper manner.

All such tradesmen shall work under an experienced and properly trained Foreman, who shall be capable of reading and understanding all drawings, pertaining to this work and the contractor shall also comply with other conditions set out in different clauses of the conditions of the contract.

#### 7.2.17 **PROJECT PROGRAMME OF WORKS AND WEEKLY PROGRESS REPORT:**

##### **a) Organisation chart:**

The contractor should submit the proposed organization chart for the project including the details of staff to be deployed full time on site to the approval of Project Engineer , where the PROJECT ENGINEER raises any objection to either the qualification or experience or required professionalism of any of the staff deployed by the contractor, the same shall be replaced by suitably competent person to the approval of PROJECT ENGINEER within 7 days.

##### **b) Program chart:**

The Contractor shall furnish the detailed programme of execution for timely completion of the project within 24 months (inclusive of rainy season). Such a detailed program of works prepared using Industry Standard Scheduling Software like **MS Project 2000 or Primavera** shall be submitted by the Contractor within ten days after receiving communication of tender acceptance. As per the detailed drawings and schedule of quantities; the contractor shall work out concurrent activities with start and finish times, integrating of all tasks with interface and mile stone event drawn and to evaluate for reduction in total project duration through improved over lapping of tasks and activities where feasible. The Contractor shall plan for improved planning and scheduling of activities and forecasting of resource requirements, ability to use the Computer effectively to produce timely valid information for Project Management purpose. Accordingly, PERT; CPM Networking shall

be drawn. GANNT charts shall also be furnished. The Contractor shall also furnish necessary particulars to the Project Engineer of works for compiling weekly progress reports in the form furnished by the Institute. A monthly financial programme shall also be submitted.

#### 7.2.18 **CLEARING OF SITE:**

The contractor shall after completion of the work clear the site of all debris and left over materials at his own expense to the entire satisfaction of the Institute. The same should be carted out of the Institute at his own cost.

The contractor shall also clear the labour camp/RMC plant of all types of permanent/temporary structures, soak pits, sump, septic tanks or any other such installations as identified by the PROJECT ENGINEER to the entire satisfaction of the Institute. The debris/excess stuff shall be carted out of the Institute at his own risk and cost.

#### 7.2.19 **PHOTOGRAPHS:**

The Contractor shall at his own expense supply to the Institute photographs in duplicate copies not less than 25 cm x 20 cm. (10" x 8") along with soft copy, of the works taken from all the portions of the building at intervals of not more than one week during the progress of the work, or at every important stage of construction, as directed by the Project Engineer of work.

#### 7.2.20 **PROVISION OF NOTICE BOARD:**

The Contractor shall provide a notice board on proper supports 3m x 2m (10' x 6') in a position approved by the Engineer. He shall allow for painting and lettering stating name of work; name of Architects; Structural Consultants; General Contractor and Sub-Contractors. All letters except that of the name of the work shall be in letters not exceeding 5 cm. in height and all to the approval of the Engineer. Proper barricading shall be erected all-round the site before commencement of the work.

#### 7.2.21 **PROTECTION:**

The contractor shall properly cover up and protect all work throughout the duration of work until completion, particularly masonry, moldings, steps, terrazzo or floor finishes, staircases and balustrades, doors and window frames, plaster angles corners lighting and sanitary fittings, glass, paint work and all finishing.

#### 7.2.22 **PREPARATION OF BUILDING FOR OCCUPATION AND USE ON COMPLETION:**

The whole of the work shall be thoroughly inspected by the Contractors and all deficiencies and defects set right. On completion of such inspection, the Contractor shall inform the Engineer in writing that he has finished the work and it is ready for the Engineer's inspection.

On completion, the Contractor shall clean all windows and doors and all glass panes, including cleaning of all floors, staircases and every part of the building including oiling of all hardware. He will leave the entire building neat and clean and ready for immediate occupation and to the satisfaction of the Engineer.

### 7.3 OTHER CONDITIONS

- 7.3.1 The tenderer must understand clearly that the rates quoted are for complete items of works including charges due to materials, labour, all lead and lift, HOM of plant and machineries, scaffolding, supervision, service works, power, all types of royalties, sales tax, labor cess, all types of taxes payable to the Govt and local bodies, over head charges, etc., and includes all extra to cover the cost of night work if and when required and no claim for additional payment beyond the prices or rates quoted will be entertained for payment subsequently towards any claims on the grounds of misrepresentation or on point that he was supplied with information given by promise or guarantee by the Institute, or by any person whether member of or employee in Institute will not be entertained. Failure on the contractor's part to obtain all necessary information for the purpose of submitting his tender and quoting rates therein shall not absolve him of any risk or liability consequent upon the submission for tender.
- 7.3.2 All the works shall be carried out as per specifications prescribed by BIS, National Building code, KPWD specifications, relevant IS codes or as directed by the Project Engineer in the absence thereof.
- 7.3.3 deleted
- 7.3.4 In case there is any conflict in the specifications and drawings the decision of the Project Engineer cum Estate officer shall be final and binding on the contractor.
- 7.3.5 All the materials shall be got approved by the Project Engineer cum Estate officer before use.
- 7.3.6 The rates quoted for in individual items shall include labour, cost of materials conveyance and lift charges for all materials required for successful completion of work and all taxes payable to any authority as per rules in vogue from time to time.
- 7.3.7 Necessary pillars shall be constructed by the Contractor for benchmark at no extra cost as directed by the Project Engineer.
- 7.3.8 Site order book shall be maintained in the work spot and the contractor shall sign in the order book in token of having gone through the instructions issued by the inspecting officers and carryout the instructions promptly.
- 7.3.9 In the work spot the contractor shall provide suitable temporary office with a covered area of 1000 sft matching that of the Contractor's office with necessary furniture for use of Institute as directed by the Project Engineer for which no extra payment or compensation shall be claimed. The furniture however will after completion of the work, be the property of the contractor and shall remove them at the close of the contract.
- 7.3.10 The contractor shall take all precautions against damage from accident. No compensation will be allowed to the contractors for their tools and plant materials lost or damaged from any cause. The contractor is liable to make good the structure or plants damaged by any other cause at his own cost. The Institute will not pay the contractor for corrections or repairing any damaged portion of work done during construction.

#### 7.3.11 **Storage of Cement:**

Large stocks of cement shall not be kept at the work spot. Only sufficient quantities to ensure continuity of the work shall be at stores. The contractor shall provide and maintain sufficient storage sheds for cement, steel etc., on the works. The cement shall be covered with tarpaulin or any other impervious materials in order to protect the cement bag from moisture

Cement bags shall be neatly stacked in an orderly manner so as to admit to easy recount. A regular day to day account of Cement received and used on the work together with the mention the particular portion and the quantity of the work in which it was used shall be maintained and shown to the Project Engineer cum Estate officer or his representative whenever he asks for it.

Cement that has been affected by the moisture shall be removed at once from the site.

Cement shall be used in order in which the consignments are received and not stored for unduly long period.

- 7.3.12 The contractor shall employ adequate no. of skilled & unskilled labours required for successful timely execution of work. He shall submit daily reports to the Engineer in charge regarding the strength of labour employed both skilled and unskilled.
- 7.3.13 The contractor shall furnish weekly medical report showing number of persons ill or incapacitated and nature of their illness, to the Project Engineer.
- 7.3.14 The contractor shall furnish a report of any accident which may occur, within 24 hours of its occurrence to the Project Engineer.
- 7.3.15 The contractor shall keep on site of work a qualified Engineer as required as per rules of registration as their authorized representative who will receive all instructions given from the Institute officers. The representative shall have permanent office at site of work where communications can be sent and notices can be served by the Project Engineer throughout the duration of work.
- 7.3.16 Prior approval should be obtained from the Project Engineer for the construction and location of the temporary site office, store sheds and labour quarters, within the premises of the site, similarly the contractor shall get approval of the Project Engineer regarding the areas to be utilized for stacking the materials etc., for the work.
- 7.3.17 Reference to detailed specifications are indicated against the items contained in the Schedule 'B', in case there is any item for which no detailed specifications is indicated, it shall be carried out as per specifications intimated by the Project Engineer. The contractor shall not be entitled for any extra claims or compensation on this account. In case of additional or extra items not covered by the Schedule 'B', the contractor shall carry out the work as per specifications intimated by the Project Engineer.
- 7.3.18 The Engineer shall have the right to direct the contractor to progress the various items of works in the manner prescribed by him.
- 7.3.19 Failure to adhere to any of the above will be sufficient cause for taking action under clause (2) or clause (3) or both along with their sub clauses of conditions of contract.
- 7.3.20 Contractor shall make arrangements at his own cost to construct approach road for conveyance of materials etc., preferably on the alignment accepted by the Institute to procure land etc. for housing, staff and workmen near the site of the work.
- 7.3.21 It is not possible for the Institute to release any quarry (metal and sand etc.,) for this work. The contractor has to make his own arrangements. No claim regarding leads and lift will be accepted.
- 7.3.22 The contractor has to make his own arrangements in regard to power supply and water required for construction and drinking water facilities.
- 7.3.23 Tool, Tax, Octroi, Royalty for collecting earth, gravel, sand, stone, excise duty, sales tax, labour cess or any other tax payable on account of this contract shall be met by Contractor.
- 7.3.24 The contractor shall be entirely responsible for sufficiency of the scaffolding, timbering, machinery, tools, implement and generally of all means used for fulfillment of the work. Whether such means may not be approved or recommended by the Project Engineer, the contractor must accept at his own cost all risks of accidents or damages.
- 7.3.25 ***After completion of the work, service drawings as per actual execution in Auto CAD should be submitted by the agency for services such as Electrical, Water supply and Sanitary before submission of final bill.***



## **7.4 GENERAL SPECIFICATIONS – PART A**

Extra care shall be taken regarding the laborers by providing waist belt, Helmets scaffolding etc at your own cost and supervision and shall be carried out as per the directions of the Project Engineer.

### **7.4.1 EXCAVATION:**

All specifications of various items of work pertain to Karnataka Public Works Department Handbook / CD, Bureau of Indian Standards (BIS) and 2016 National building Code (NBC). For the points not covered by these specifications for the portions thereof and if no mention be made there in, the written instruction of the Project Engineer cum Estate officer shall be binding on the contractor.

Before starting the work the contractor or his duly authorized agents shall be present while taking ground levels, along and across the alignment of the various works, etc., and shall have to sign the field book, and also working plans showing working longitudinal and cross sections of their alignment in token of having accepted the ground levels without which they will not be allowed to start the work.

Excavation for foundation shall be done up to required depth and in steps with sides properly sloped as shown on plans, without any charges etc., except when instructed in writing by the Project Engineer cum Estate officer. Only depths and widths according to plan or as per written orders of the Project Engineer shall be measured and paid for.

Any damage done to the work due to the contractor's operation beyond the excavation lines shall be repaired at the expense of the contractor. Any and all excess excavation or over breaking performed by the contractor for any purpose or reason except as may be ordered in writing by the Project Engineer and whether or not due to the fault of the contractor shall be at the expense of the contractor. Cost of refilling for all such excavation with materials as specified by the Project Engineer has to be done by the contractor at his expense.

### **7.4.2 WORKMANSHIP AND LABOUR:**

The quality of all materials, tools, operators and labour used on the work shall be subject to the approval of the Project Engineer cum Estate officer or his authorized agent who shall have power to order immediate removal by the contractor any of the above that may not meet with his approval.

In case of failure to carry out orders of removal within the time specified, the Project Engineer or his authorized agents shall get the same removed at the contractor's expense.

### **7.4.3 KEEPING DRY AND PUMPING:**

**7.4.3.1** Unless otherwise provided for in the contract, the contractor will at his own expense keep all portions of the work free from undue water, whether due to springs, soakage or inclement weather and will use his own implements and machinery for this purpose.

#### **7.4.3.2 BAILING OUT OR DEWATERING:**

Adequate arrangements shall be made by the contractor for dewatering the foundation trenches and excavation and keeping the same dry while the masonry or concrete work is in progress and till the Project Engineer considers that the mortar is sufficiently set.

The rates for the various items include the cost of shoring, strutting, coffer dam, channels or other incidental devices necessary for diverting the water met within foundation. The cofferdam and the

diversion channel shall, however, be maintained in good and working condition till the completion of the structure or until such time, as in the opinion of the Project Engineer till the coffer dam or/and diversion channel is no longer necessary. Bailing out water necessitated by the failure to maintain the cofferdam and diversion channel will not be paid for separately under any conditions.

No extra rate shall be paid for removing any stuff outside, which might find excess due to rains or for reasons whatsoever from the sides or bottom of the foundation trenches and excavation or from also where when the dewatering operations are in progress.

The contractor must assure himself by making the necessary investigation regarding the depths to which foundations are likely to go. If any work is ordered to be done beyond dimensions or deviations marked in the drawings, no extra rate other than the rate for the Undertaking of work quoted by the contractor be paid.

The contractor will make himself arrangements for necessary plant such as Pump, engines, and other materials required in this connection.

#### **7.4.4 FACILITIES FOR INSPECTION:**

The work at all times be open for inspection by the Project Engineer or his duly authorized Assistant and the contractor shall arrange easy access to every part of the work and shall provide such ladders, scaffolding and lifts for this purpose as necessary at his own cost.

#### **7.4.5 DELIVERY OF WORKS:**

The final bill will be prepared after the work is handed over to the Project Engineer or his duly authorized representative in a thoroughly complete, clean, sound and workman like state.

#### **7.4.6 EXTRA ITEM:**

Whenever the contractor is ordered by the Project Engineer or the person duly authorized by him to execute any item of work, which is not in his tender, it shall be the contractors duty to see that the order is duly entered in the order book on the work, unless a separate communication to this effect is received by him, it shall be his duty to get the rates sanctioned for the item by the appropriate authority. For any extra item of work not thus ordered either by any entry in the order book or separate communication, the contractor shall have no claim to payment.

#### **7.4.7 COMPLIANCE WITH BYELAWS AND PROTECTIONS AGAINST ACCIDENTS, ETC:**

Contractor is responsible for complying with all acts, bye-laws, Municipal and other regulations for the provision and maintenance of lights during nights, barricading, providing any other protection that may be necessary and will be liable for all claims that may arise from accidents of nuisance caused by works.

#### **7.4.8 DISPUTES:**

Disputes on the points between the Project Engineer and the contractors shall be referred to the Center for campus management and Development, whose decision shall be given in writing and shall be final and binding on the contractor.

#### **7.4.9 TOOLS ETC.,**

The contractor shall unless otherwise specially stated in the contract, be responsible for the payment of all import duties, octroi duties, sales tax, quarry fees etc., on all materials and articles

brought to site.

#### 7.4.10 **CLEARANCE OF SITE:**

The site described and shown on the plan is to be cleared of all obstruction, loose stones and materials, rubbish of all kinds of shrubs and brushwood, the roots being entirely removed.

The products of the cleaning to be stacked in such a place and manner as ordered by the Project Engineer.

In jungle clearing all trees not marked for preservation, jungle wood and brushwood shall be cut down and their roots entirely removed up. All wood and materials from the clearings will be property of the Institute and should be stacked as the Engineer in charge directs. **Trees shall not be cut without prior permission of the Institute.**

All holes or hollow, whether originally existing or produced by digging up roots, shall be carefully filled up with earth well rammed to the required density and leveled off, as may be directed.

#### 7.4.11 **LINE OUT:**

The contractor shall use necessary measuring instruments, theodolite, workstation and other materials like flags, strings, pegs, nails, pillars, paints, etc., and also Labour required for ascertaining of the initial ground levels at the different stages of excavation and construction of masonry or other structures at his own cost. Any dispute in regard to the accuracy of the measuring instruments and the device shall be subjected to the final decision of the Engineer-in charge of the work.

#### 7.4.12 **ALL MATERIALS SHALL CONFORM TO BIS SPECIFICATION**

##### 7.4.12.1 **STONES:**

Except where otherwise stated the word "Stone" mentioned in these specifications means best granite stone obtained from approved quarries by the Project Engineer. Stones obtained from unapproved quarries and inferior stones obtained from approved quarries will be rejected.

Stones having any skin or covers of earth shall not be used.

All stones shall be fine or medium grained bright in colour breaking with a clear structure making a ringing sound when struck with hammer.

##### 7.4.12.2 **COARSE AGGREGATE:**

Coarse aggregate shall be as per BIS specifications. The coarse aggregate for concrete shall consist of hard, dense, durable, uncoated, coarse, rock fragment and shall be free from injurious amounts of friable, thin elongated or laminated process alkali, organic matter or other substances. Round pebbles, flaky and decayed stone shall not be used.

The broken stone shall be free from all dusts and dirt and washed if necessary, to ensure that all faces of the broken stones are perfectly clean.

##### 7.4.12.3 **SAND:** The source and quality of the sand to be used shall have to be approved by the Project Engineer. The sand shall be as per BIS specifications. The sand shall consist of hard, durable, dense uncoated rock fragments, and shall be free from impurities with dust lumps, soft or flaky particles of shales, alkali, organic material, and other deleterious substances. Filter sand shall not be used.

**7.4.12.4 WATER:** Water to be used for the work shall be clear and free from alkali, acid, oil or other deleterious substances and generally fit for drinking.

**7.4.12.5 CEMENT CONCRETE:**

The material used, i.e., water, cement and aggregate shall be of approved quality and the grading of the aggregate shall be as specified at the time of concreting.

The design of concrete mix shall be done by trial mix and testing. The same has to be approved by the Project Engineer cum Estate officer before adopting at site.

**7.4.12.5.1 PLACING CONCRETE:**

Concrete shall be placed only in locations where authorized and no concrete or mortar shall be placed until formwork, installation of embedded parts, preparation of surface and necessary cleanup has been done and checked to be in conformity with specification and drawings. Earth foundation, on which concrete is to be laid shall be firm, drained soil free from any soft and other objectionable materials and on which there is no standing or running water. Rock surface or rigid masonry or concrete surface upon or against which, concrete is to be placed, shall be prepared in the same manner as rock foundation or old masonry or concrete surface over old masonry. All concrete shall be placed directly in its final position within 30 minutes after it is mixed. Concrete shall not be dropped from excessive distance and the free fall should be kept to a minimum to avoid segregation, air entertainment and damage to form work.

**7.4.12.5.2 RATE OF PLACE:**

Concreting shall be continued without interruption when it is unavoidable until the structure or section is completed or until satisfactory construction joint can be made. Concrete shall not be placed faster than the placing crew can compact it properly. The difference in elevation between adjacent block shall not exceed 15" inches.

**7.4.12.5.3 CONSOLIDATION OF CONCRETE:**

Each layer of concrete, where smooth surface are required and for all surfaces which will be permanently exposed to the weather, and for all surface next to embedded metal work, the concrete shall be worked, or vibrated to obtain concrete of maximum density and imperviousness and to assure proper contact of the concrete with the form and reinforcement bed. Ordinary hand methods consisting of ramming, tamping and skiing with suitable tools and tamping shall be permitted only in situation where it is impracticable to use power vibrators. Excessive vibrations sufficient to cause segregation tending to bring in excess of finer particles to the surface shall be avoided. Vibrators shall be inserted to lower course that has commenced final set.

**7.4.12.5.4 CHIPPING AND ROUGHENING CONCRETE SURFACE:**

Surface upon or against which additional concrete is to be placed shall be chipped and roughened to a depth not greater than one inch on the surface. The roughening shall be performed by chipping or other satisfactory method and in such a manner as not to loosen, crack or shatter any part of the concrete beyond roughened surface. After being roughened the surface of concrete shall be cleaned well thoroughly of all loose fragments, dirt and other objectionable substances and shall be sound and hard and in such conditions as to ensure good mechanical bond between old and new concrete. The old prepared surface shall be treated with epoxy and cured before

concreting.

#### **7.4.12.5.5 CURING AND PROTECTION:**

All concrete shall be protected against injury until final acceptance. Concrete shall be kept continuously moist for not less than 21 days. Construction joint shall be cured. Separate labors to be engaged 24 x 7 exclusively for curing the concrete works.

#### **7.4.13 MACHINERY:**

7.4.13.1 All the machinery that will be employed on the work shall be approved, efficient and thoroughly, complying with the specifications of each machine or parts and shall have been manufactured by reputed and qualified firms. All the machinery employed on the work shall be open to inspection at all working hours, by the Project Engineer and any defect shall be rectified, repaired, replaced, renewed or remodeled so that its performance in the opinion of the Project Engineer is satisfactory. Any defective part of the machine, which requires replacement, shall be promptly replaced, failing which the Engineer-in-charge, shall be at liberty to cause the defective fittings removed from site of work at the cost of the contractor.

#### **7.4.13.2 OPERATORS:**

The machines shall be in charge of efficient and trained operators, which terms shall include drivers, mechanics or other personnel who are actually operating the machines. The Engineer in-charge has the right to test operators, etc., as deemed necessary by him for the class of machinery, which he is to operate and shall drive out such of the operators who fail in the tests.

#### **7.4.14 SAFETY PRECAUTION :**

All reasonable safety precautions for the safety of workers shall be taken. The contractors shall be responsible for the maintenance of all regulations under the Factory Act, workmen's compensation. Minimum wages act and other act for the safety and welfare of the workers employed by him. In addition, the contractors shall provide adequate protection to all workers employed by him against natural elements such as rain, sun, wind etc., during working hours and provide free, pure protected drinking water during working hours.

#### **7.4.15 NON-STOP OPERATION:**

In the continuous or non-stop operations suitable shifts or working hours for each shift shall be maintained. The contractor is liable for all reasonable extra payment for all extra hours of work done by the workers employed by him.

#### **7.4.16 TESTS:**

The Project Engineer cum Estate officer or his authorized representatives shall have full scope and right of entry at all times to examine and test, measure, count, weigh, take bores, or in any manner satisfy himself that the work executed is according to the specifications and required strength. Any portion of work got disturbed, during such tests, shall be made good by the contractors, without extra cost. The Engineer in charge has the right to change the design proportions, mixes within reasonable limits to ensure requisite strength of the structure. **Laboratory for requisite tests shall be established by the Contractor at site only, at his own cost.**

#### **7.4.17 ADEQUATE ARRANGEMENTS TO ACHIEVE PROGRESS:**

The Project Engineer shall have the right to advise the contractor on the strength, quality and nature of labour to be employed on work to maintain progress on the work, commensurate with the strength of

structure. Similarly, he shall advise the contractor on the nature and adequacy of the machinery that are required on the work.

#### 7.4.18 **MEASUREMENTS:**

Estimates of quantities contained in the attached schedule of work are based on the use of standard methods of measurements applicable to the various items. The methods of measurements for some items are briefly described below.

7.4.18.1 **EXCAVATION:** All excavation shall be measured as the original volume in undisturbed condition in site.

7.4.18.2 **DRILLING:** The drilling holes shall be measured as the actual number of linear feet of holes drilled including linear feet drilled through concrete or masonry. The drilling holes for blasting shall be considered as the part of the excavation operation and no separate measurements of such holes will be made.

7.4.18.3 **CONCRETE:** Concrete shall be measured as the volume of concrete in place of the structure. This item shall include all materials in all forms, form lining and fixture, framing and scaffolding and all operations in connection with mixing, conveying, placing and curing of concrete. It shall also include batching and finishing operations except where finishing as defined in the specifications is required. In measuring concrete the **volume of openings, embedded pipes and metal work except reinforced bars and anchor bolts and bars will be deducted.**

7.4.18.4 **REINFORCEMENT:** Reinforcement shall be linearly measured and paid in terms of weight of steel reinforcement placed in the structure calculated as per IS Standards. It shall also include weight of metal chair supporters, clips used to set and fix reinforcement in place. Laps and wastage shall not be measured and paid.

7.4.18.5 **CEMENT POINTING:** The exposed faces shall be measured in superficial area.

## General Specification - Part B

### **PART -1 Specifications for Civil Works**

#### **1.0 EXCAVATION**

- 1.1 The places where excavation is directed to be done shall be cleared of all shrubs, weeds, grass and vegetation including roots, where necessary and if so directed, the excavated earth must be deposited in layers of 15 cms and the clods broken. During excavations, if so directed, 'dead-man' (of volume not more 5% of the excavation volume shall be left at the places directed for verification of the dimensions of excavation). These 'dead-man' shall be removed and earth deposited at places shown before full rate is paid, Alternatively or in addition to 'dead-man', block level at intervals as directed will be jointly taken and recorded by the contractors representative and employer's representative before starting of excavation and after completion. Recording of – block levels or leaving of 'dead-man' may be avoided in the case of narrow foundations and trenches, if so directed.
- 1.2 The rate quoted shall include bailing or otherwise removing all water which may accumulate in the excavation from all causes and removing of swish, trimming of all sides plumb or otherwise as directed, dismantling removing and stacking as directed any existing water pipes and or soil pipes etc., encountered within the excavation.

#### **2.0 CONCRETE WORKS**

- 2.1 Proportion of ordinary cement concrete will be expressed as 1:4:8, 1:3:6, 1:2:4 etc., The first figure will be quantity of ordinary Portland cement by volume, the second figure will be dry coarse sand (fine aggregate) by volume and the third figure will be the quantity of coarse aggregate by volume. Cement shall be measured by weight. The weight is to be derived on the basis that one cubic meter will weigh 1440 kg or one full bag of 50kg will be assumed to be 35 lts. When the sand is wet or moist suitable corrections for bulking is to be given while proportioning. The clerk of works may allow measuring cement by volume.
- 2.2 Unless otherwise specified, the rates for all RCC will be exclusive of reinforcements but including from work, Reinforcements will be measured and paid separately.
  - 2.2.1 Unless otherwise stated for all RCC work the size of coarse aggregate will be 20MM and down size.
  - 2.2.2 Concrete proposed for roof slab and roof beams is ready mixed concrete. The contractor should quote, his rate keeping in view that the rate should include for ready mixed concrete all as per specifications and directions of Engineer-in-charge.

### **2.3 READY MIXED CONCRETE (RMC) IS: 4926-1976**

- a. The RMC from suppliers of ACC/L & T/Fletcher challenge should only be used.
- b. The rates are inclusive of all lead and lift. Additional lead and lift charges.
- c. The rate is inclusive of all necessary form work, centering and scaffolding capable of withstanding pumping of concrete.
- d. The rates are applicable to the materials with a maximum radius of 25 km from the city center.
- e. Test results of concrete for 28 days strength be obtained from the concerned RMC supplying firm.

### **2.4 MATERIALS.**

#### **2.4.1 Cement:-**

2.4.1.1 Cement shall comply in every respect with the requirements of the latest publication of IS: 269 and unless otherwise specified, ordinary Portland cement shall be used. No other make of cement but that approved by the Architects/ Employers will be allowed on works and the source of supply shall not be changed without approval of the Architects/Employer in writing test certificates to show that the cement used fully complies with the relevant IS specifications shall be submitted to the Architects/ Employer and notwithstanding this the architects may at their discretion order that the cement brought to site and which they may consider damaged or of doubtful quality for any reasons whatsoever shall be retested in an approved testing laboratory and fresh certificate of its soundness shall be produced, Cement ordered for retesting shall not be for any work pending results of retest.

2.4.1.2 Cement shall be stored neatly packed in piles not exceeding 10 bags high in weather-proof sheds with raised wooden plank flooring to prevent deterioration by dampness or intrusion of foreign matter. It shall be stored in such a way as to allow the removal and use of cement in chronological order of receipt, i.e., the first received being first used. Cement deteriorated and/or clotted shall not be used on work but shall be removed at once from the site daily record of cement received and consumed shall be maintained by the contractor in an approved form and a copy submitted to the employer once a month.

#### **2.4.2 Fine Aggregates:**

2.4.2.1 Sand shall conform to IS: 383 it shall pass through IS sieve 4.75mm (3/ from a 16" B S) test sieve, leaving a residue not more than 5%. It shall be from a natural source or crushed stone screenings it shall be washed, if directed, to reduce the percentage of deleterious substances to acceptable-limits. Sand



shall not contain any trace of salt and sand containing any trace of salt shall be rejected.

- 2.4.2.2 The fine aggregate for concrete shall be graded within limits as specified in IS: 383 and the fineness modules shall range between 2.60 to 3.20 the fine aggregates shall be stacked. Carefully, on a clear hard dry surface so that will not get mixed up with deleterious foreign materials. If such a surface is not available, a platform of planks or corrugated sheets or brick floor or concrete floor shall be prepared. Sand shall be added in the desired proportion as required for the strength specified, with suitable correction for “bulking”.
- 2.4.2.3 Coarse aggregates: Coarse aggregate shall conform to IS:383. It shall consist of crushed or broken stone, 95% of which shall be retained on 4.75 mm IS test sieve. It shall be obtained from crushed granite, trap, basalt or similar approved stones from approved quarry. Coarse aggregate shall be chemically inert when mixed with cement and shall be angular in shape and free from soft friable thin porous laminated or flaky pieces. It shall be free dust and other foreign matter. – Gravel/shingle of desired grading may be permitted as a substitute in part or full in plain cement concrete if the Architect/Employer is otherwise satisfied about the quality of aggregate.

## **2.5 MIXING OF CONCRETE:**

- 2.5.1 Machine mixing:- Aggregates shall be accurately measured out in boxes and mixed dry along with required cement. Water shall then be added in measured quantity and mixing shall be continued until there is uniform distribution of the materials and the mass is uniform in colour and consistency but in no case shall the mixing be done less than two minutes. Only hopper loading mixer shall be used.
- 2.5.2 Hand mixing: when hand mixing is permitted with the approval of the Project-Engineer – Cum – Estate Officer, CCMD, it shall be carried out in water tight, mixing platform and care shall be taken to ensure that mixing is continued until the mass is uniform in colour and consistency. If required by, the architect/consultant 10% extra cement has to be used at the contractor's cost if hand mixing is done.

### **2.5.3 Consistency:**

- 2.5.3.1 Only sufficient water giving due allowance for the moisture content of aggregate shall be added to the cement and aggregate during mixing to produce a mixture of sufficient workability to enable it to be well consolidated to be worked in to corners of the shuttering and around the reinforcements (where there is reinforcements) to give the specified finish and to have the specified strength.

2.5.3.2 Normally for every 50 kg of cement in the concrete in the mix, total water including moisture content of aggregate should not be more than 34 lts for 1:3:6 mix, 32 lts for 1:2:4 mix 30 lts for 1:1 ½ :3 and 27 ltrs for 1:1:2 mix

2.5.3.3 If difficulty be experienced in placing concrete of specified mix and approved consistency between and below reinforcement bars, in the bottom of beams and similar situations, the concrete shall have improved workability by increasing the proportion of water with corresponding additional quantity of cement using aggregates of smaller size than specified as directed by the Architect/ Employer for which extra will be paid.

2.5.3.4 The consistency shall be determined by making trial mixtures with dried aggregates, or. When so instructed by test laboratory made test cubes under the direction of Architect/ Employer by slump – Test using a standard cone or the Architect/Employer may direct the use of any other means of testing the consistency.

2.5.3.5 If the apparatus used for the slump test is a standard cone, the cone when filled, shall be raised vertically – clear of the concrete: The ‘slump’ shall be 300mm minus the height of the slumped cone of concrete. Care shall be taken to prevent vibration of the samples being tested. The following slumps shall be adopted for different kinds of works:

		With Vibrator	Without Vibrator
A	Mass concrete in RCC foundations, footings and retaining walls	10 to 25mm	80 mm
B	RCC beam, slabs and columns	25 to 40 mm	100 to 125 mm
C	Thin RCC section or section with congested steel	40 to 50mm	125 to 150mm

#### **2.5.4 Placing and Compacting**

2.5.4.1 Method of placing concrete shall be such as to preclude segregation and as far as practicable the placing shall be continues.

2.5.4.2 Special care shall be taken in accordance with 18:456 while laying concrete under extreme weather. Concrete, during the operation of placing shall be thoroughly worked around the reinforcements, embedded fixtures, spaded against comers of the form work by punning, rodding or by any other approved means and thoroughly compacted by mechanical vibrators. The number and type of vibrator to be used, and in general immersion type vibrators shall be used.

2.5.4.3 Consolidation by using immersion vibrator will be in accordance with Is: 3558 sufficient number of reserve vibrators in good working condition shall be kept

on hand at all times, so as to ensure that there is no slacking or interruption in compacting.

## **2.6 ADMIXTURE**

The use of admixtures may be allowed only if approved by the Architect/Consultant their decision in this regard shall be final.

## **2.7 TRANSPORTING**

Concrete shall be conveyed from the place of mixing to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of any of ingredients? If segregation does occur during transport the concrete shall be remixed before being placed, normally not more than 30 minutes shall lapse between mixing and consolidation in position.

## **2.8 CURING:**

All cement concrete after laying shall be protected from damages, till it sets and shall be cured thereafter for not less than ten days. The work shall be protected from direct wind and direct sun, rays. Water used for curing shall be free from sediments of any kind and generally fit for drinking.

## **2.9 STRENGTH OF ORDINARY CONCRETE:**

2.9.1 The Contractor has to ensure that proper- materials in specified proportion are used and the correct water cement ratio, just sufficient for the workability is maintained to see that the minimum strength of concrete as provided under paragraph 3.9.2 (below) are obtained. To verify this, test cubes from the concrete pours should be made and tested. The frequency of testing and the acceptability criteria will be according to IS: 456.

2.9.2 Compressive strength of 15 cm cubes at 28 days after mixing shall be as follows: same as para 3.13.2

2.9.3 Six cubes shall be taken from any mix selected at random as directed by Engineer-in-charge three of these should be tested after 7 days and three after 28 days. The strength at 7 days must be 2/3 of the strength at 28 days. The criteria for acceptance are only the strength at 28 days.

## **2.10 FORMWORK AND CENTERING**

2.10.1 The form: work shall conform to the shape, lines and dimensions of the faces of concrete shown on the drawings and be so constructed as to remain sufficiently rigid the placing and compacting of the concrete and shall be sufficiently water tight to prevent loss of cement slurry from the concrete. Form work shall be constructed of steel or timber or marine plywood and adequately designed to support the full weight of wet concrete (deflection

limited to 3mm) and retain its form during laying, consolidation and setting of concrete. Timber used shall be properly seasoned so as to prevent deformation when wetted.

- 2.10.2 Props shall be straight and of full height and no joints shall be allowed. Props shall be braced with bamboo's or wooden battens or other means in both directions at intervals of 1500mm and where additional staging is necessary, extra care shall be taken to use bigger size props with bracing at necessary levels. All the props shall be supported on sole plates double wedged. At the time of removing props these wedges shall be gently eased and not knocked out.
- 2.10.3 All rubbish, chipping, shavings, sawdust etc., shall be removed from the interior of the forms before concrete is placed. The form work in contact with the concrete shall be cleaned and thoroughly wetted and treated with non staining mineral oil or any other approved material. Care shall be taken that "oil or such similar material is kept out of contact with the reinforcement.
- 2.10.4 Officer, GGMD at convenient places for washing down all the rubbish. These are to be closed before concreting.
- 2.10.5 All form work shall be removed without shock or vibration and shall be eased off carefully in order to allow the structure to take up its load gradually. Forms shall not be disturbed until concrete has adequately hardened to take up its own weight and superimposed load coming on it and in no circumstances shall forms be struck until the concrete reaches its strength of at least twice the stress to which the concrete may be subjected to at the time of striking. The said forms shall be so fixed that while removing them the supporting forms and props are not disturbed.
- 2.10.6 In the case of folded plates and shell roofs the contractor should take prior approval of the pattern of centering and shuttering along with programme for deshuttering.
- 2.10.7 The tolerance of shuttering and stripping time will be as set forth in IS : 456 if directed, forms shall be given an upward camber to ensure that the beams do not have any sag. No honey combing will be permitted, however any honey combing of minor nature as specifically allowed by the clerks of works shall be repaired neatly with cement mortar 1:2
- 2.10.8 Any work showing signs of damage through premature or careless removal of centering or shuttering, shall be reconstructed by the contractor at his own cost. Surface that has to remain exposed after removal of forms shall be carefully examined and any fins, burrs, projections etc., that are detected shall be removed.
- 2.10.9 Centering and shuttering is specified to be paid for separately, measurement of such centering and shuttering will be taken according to IS: 1200

## 2.11 Steel Reinforcement

- 2.11.1 Reinforcement for all works shall be TMT steel bars, as specified in the drawings. TMT steel bars shall be of tested quality conforming to grade I of IS : 432 and high yield strength (of 550 N/sqmm) TMT bars shall be of IS:1786 or 1139 as appropriate. Reinforcement where called for shall be kept clean and free from pitting, loose rust millseale- oil, grease- earth paint or any material which may impair the bond between concrete and reinforcement or which may cause high corrosion of the reinforcement or deterioration of the concrete.
- 2.11.2 Reinforcement shall be accurately done to the dimensions, spacing and minimum cover as per structural drawings. The contractor shall submit to the clerk of work bar bending schedules, prior to the commencement of fabrication. All joints in TMT reinforcement upto and including 16mm dia shall be overlapped. The length of overlap for tension and compression joints in TMT steel reinforcement above 16mm dia may be welded subject to the approval of the project Engineer- cum estate officer.
- 2.11.3 Wherever specified and / or approved, welded laps shall be provided subject to the following.
- 2.11.3.1 Random samples of typical – welded joints shall be made and got tested in an approved laboratory at the contractor's expenses.
- 2.11.3.2 If the cold twisted deformed bar has an untwisted end at lapping joint, such portion – shall be cut off prior to welding.
- 2.11.3.3 bars shall be free from rust at the joints to be welded.
- 2.11.3.4 Bars can be aligned and kept in proper axis in order to minimize crookedness in bar welding.
- 2.11.3.5 Nothing extra shall be payable towards lap welding of joint unless specifically mentioned or agreed otherwise.
- 2.11.4 Reinforcement shall be rigidly held in place inside the form work using chairs (bent from steel bars) spacer bars and cement concrete blocks each block shall be secured to the reinforcement with wire or clip embedded in the center of block so that it shall not be in contact with form work. Intersections of reinforcement shall be bound together with 18 gauge annealed soft iron binding wire.
- 2.11.5 Before proceeding to place reinforcements the contractor shall ensure that appropriate cover between the bars and or the form work is available. Should any difficulty arise during the placing of steel in obtaining the required cover the contractor shall immediately draw the attention of the architect/

consultant to the difficulty and shall carryout such corrective measures as the architect/ consultant may instruct.

2.11.6 Reinforcement left projecting from newly placed concrete shall be supported in a way there is no risk of disturbance, which would cause damage to newly placed concrete.

2.11.7 The contractor shall ensure that movement of men and material subsequent to fixing in position of the reinforcement is organized such that displacement of the reinforcement will not occur.

2.11.8 The measurements recorded for reinforcements shall be including all laps and wastages as approved by the project Engineer- cum Estate officer's representative.

## **2.12 INSERTS IN CONCRETE**

The contractor shall fix all necessary inserts such as steel – plates, pipes, sleeves, bolts etc., and shall make provisions in the form work for holes, pockets dowels, etc., at no extra cost (unless otherwise specified) to enable, subsequent fixing of supports, brackets or similar items. He shall also ensure that all conduits, inserts etc., are in position before placing concrete.

## **2.13 CONTROLLED CONCRETE**

2.13.1 Controlled concrete shall be taken to mean that there shall be full field control of (a) predetermined grading of all aggregates that go into concrete and (b) Predetermined proportion of coarse aggregate, fine aggregate, cement and water for the required strength.

2.13.2 Strength shall mean the acceptable field strength after 28 days of curing on the tests conducted on 15 cm cubes from concrete taken during concreting in the manner set if forth in IS 456. A statement to acceptable minimum field strength is noted below.

<b>Compressive Strength</b>		
Grade	Preliminary test (Kg/ Sq Cm)	Work Test (Kg/Sq Cm)
M10	135	100
M15	200	150
M20	260	200
M25	320	250
M30	380	300
M35	440	350
M40	500	400

- 2.13.3 Arrive at the proportion to be adopted to obtain the grade of concrete, the mix should be based on laboratory tests conducted using the aggregate actually available at site which would be used for making/ concrete. The design mix should give suitable workability to enable it to be well consolidated to be worked into the corners of the shuttering and around the reinforcement.
- 2.13.4 Where difficulty is likely to be encountered in placing and compacting concrete and where there is crowding of reinforcements a separate mix is to be designed for required strength and used without extra cost, the mix design along with the workability obtainable with the designed mix should be furnished to the architect/employer before hand approval obtained. A laboratory is to be established at site to assess the moisture content of aggregate as frequently as necessary and as instructed by the Architect/employer based on which corrections is to be applied to the quantity of water to be used for mixing.
- 2.13.5 All aggregates are to confirm strictly to IS: 383. The aggregates will be tested as frequently as directed by the Architect/Employer to see that their specifications is the same as adopted in the mix design they must be stored on clean plat form made for the purpose.
- 2.13.6 Concrete shall be weigh batched, Dials of weigh batching unit to be used shall be checked with standard weights periodically. The conversions of weights volume will be allowed by Project Engineer cum Estate Officer, under special circumstances. Despite the design for several, mixes the following quantities of cement are the minimum to be used per cubic meter of the different grades of concrete.

Sl No	Grade of Concrete	Cement/ Cum (Bags)
1	M5	3.20
2	M7.5	3.60
3	M10	4.40
4	M15	4.80
5	M20	6.40
6	M25	6.80
7	M30	7.20

### **3.0 SIZE STONE MASONRY**

- 3.1 Size stone shall be hard granite, basalt or trap stone obtainable from approved quarry, the stones shall be clean and wetted before they are used
- 3.2 Height of each course shall not be less than 15cm and all courses shall be of uniform height.
- 3.3 No face stone shall be less in depth than in height or shall tail into the work to a length less than the height stone shall break joints at least half the height of course faces of stones shall be hammers dressed such that the buildings are not more than 25mm thickness of joints shall not be more than 20mm. Edges of face stones of exposed faces shall be chiseled true to both longitudinal and vertical lines exposed faces of corner stones are to be two lines dressed 50mm wide.
- 3.4 Bond or through stones shall be provided not exceeding 2.0m apart in each course and shall be staggered bond stone shall be from the front to back of the walls fro walls upto 60cms thick; they shall either be in one piece (if available locally) or be in the series of headers; each header overlapping the adjoining one by not less than 150mm bond or through stones shall be marked as directed to enable easy detection even after having been built in position. The interior (or filling) shall be with flat bedded stones laid in mortar joints and shall not exceed 10% of the quantity of stone masonry. Care is to be taken that no dry work or hollow spaces shall be left anywhere in the masonry.
- 3.5 The work shall include.
  - 3.5.1 All scaffolding – platforms, staging etc.,
  - 3.5.2 Hacking and roughening of concrete or other surfaces for binding of the masonry.
  - 3.5.3 Raking out joints for plastering and / or pointing.
  - 3.5.4 Levelling up and preparing and pointing.
  - 3.5.5 Building in holdfasts or similar inserts.
  - 3.5.6 Keeping (the work) in damp condition for two weeks
  - 3.5.7 Construction watery situation.



## **4.0 BRICK MASONRY:**

### **4.1 GENERAL**

- 4.1.1 All brick work should be carried out as shown on the drawings with set backs, projections, cuttings, toothings etc., wherever the proportion of cement mortar has not been specifically mentioned, cement mortar in the proportion of 1:6 shall be used. Flat brick arches shall be provided, wherever required, without any extra cost. Brickwork shall be kept wet while in progress till mortar has properly set. On holidays or when the work is stopped top of all unfinished masonry shall be kept wet, should the mortar be dry, white or powdery, due to lack of curing work shall be pulled down and rebuilt at the contractors expense.
- 4.1.2 Table moulded bricks shall be locally available or brought from outside first quality having a minimum crushing strength of 40kg per sqcm and water absorption not more than 20% by weight. Bricks shall be thoroughly cleaned and well wetted. Table moulded bricks shall be soaked for atleast 12 hours in fresh water before being used on the work.
- 4.1.3 Unless otherwise specified, brickwork shall be done in English bond with frog upwards. The bricks shall be bedded and joined with mortar in such a manner as not to leave voids. Each brick shall be correctly into position by tapping with the handle of trowel. Grouting of mortar slurry will not be allowed except where necessary for special reasons and in such cases, prior permission of the Architect/ Employer shall be obtained.
- 4.1.4 A care shall be taken that each course of brick work is truly horizontal and perfect in bond and the face of the wall is straight, plumb and even. The mortar joints shall be 10mm in thickness, except where extra thickness is required for the purpose of bringing the work to the required height or level. Halfbricks or bats shall not be used except for obtaining the bond and where absolutely necessary.
- 4.1.5 Brickwork in 239 mm wall: If bricks are of size such that the width of the header course does not come equal to the width of the stretcher course, the difference shall be made up during construction of brickwork itself by same mortar as used for construction of masonry to provide a plane vertical surface. The surface should also be scarified to receive plaster.
- 4.1.6 All junctions of wall shall be carefully bonded into the main walls. The rate of laying masonry will be upto a height of 100cm per day if cement mortar is used greater heights may be built only if permitted by the Project Engineer-Cum Estate Officer.
- 4.1.7 During rains, the work shall be carefully covered to prevent mortar from being washed away. Should any mortar or cement be washed away the work shall be removed and rebuilt at the contractors expense.

## **4.2 HALF BRICK WORK:**

This shall be set in cement mortar as specified. Unless otherwise specified, the walls be reinforced with 2 nos of 6mm mild steel bars with tie bars at 1m interval on the top of the first course and at every fifth course thereafter. The cost of the half brick work shall include the cost of reinforcement where reinforcement of half brick walls is specified.

## **5.0 Wood Works:**

5.1 GRP Door shutters as per the Engineer-in-charge/ Architects approval

## **5.2 GLAZING WORKS**

All glass shall be specified in the drawings and schedule of quantities and free from air bubbles, specks and scratches or other defects. All glass shall be cut to fit the sashes or other members as required. All glass, shall be properly bedded, securely fixed and finished as indicated on the drawings. T.W beading moulded as specified shall be provided for fixing the glass. No glazing shall be complete until all the stains and marks have been removed from the surface of glass.

## **6.0 ALLUMINIUM DOOR, WINDOWS ETC.,**

### **6.1 GENERAL**

6.1.1 These shall be custom-built units of approved established manufacturer using standard aluminum alloy extruded sections generally conforming to the relevant basic concept drawings of the Architects and Schedule of quantities including necessary glazings, fittings, fastenings, locking arrangements polysulphide sealants etc., to ensure water tightness.

6.1.2 Based on the Architects concept drawings, the contractor shall submit detailed fabrication/ assembly/ erection drawings for the approval of the Engineer-in-charge. Samples of each unit, based on the approved fabrication and assembly drawings shall be made by the contractor and got approved by the Engineer-in-charge before bulk fabrication and assembly of each unit.

### **6.2 STORAGE AND HANDLING:**

The contractor shall take particular care to stack the fabricated frames etc., on the site under cover. These shall be handled with care and stacked on edge of level bearers and supported evenly.

6.3 Before erecting- the frames coming in contact with concrete, masonry, plaster or dissimilar metals, shall be treated with a coat of zinc chromate. The contractor shall cover the work with transparent lacquer based or methacrylates or cellulose butyrate, tithe surface from wet cement during installation. This coating shall be removed on completion. Before handing over,

the aluminium work shall be washed with mild solution of non-alkali soap and water.

- 6.4 The colour of anodizing shall be uniform mat natural finish otherwise stated and its sample shall be submitted for the Engineer-in-charge, approval before work commences. The section shall be anodized to a minimum thickness of 20 microns. The contractor must submit necessary evidence to the satisfaction of the Engineer-in-charge that the thickness of the anodisation is not less than 20 microns. In case of doubt the Engineer-in-charge may reject the materials.

## **6.5 TOLERANCE ON SIZE.**

Frames should be made to fit the actual openings with not more than 5mm clearance all round. Discrepancies in overall width or height exceeding 5mm will not be allowed and frames will be rejected in such cases. Minor discrepancies acceptable to the Architect/ Employer shall have the gaps suitably filled. The sizes of frames, if noted in the drawings/ schedule of quantities, may vary up to plus or minus 50mm beyond which the rate payable will be increased or decreased proportionate to the changes, where the rate quoted is for one unit number, if the rate quoted is for superficial area, such area will be net finished size of the opening.

## **7.0 STEEL WORK:**

The fabrication, supply and erection of the steel (Fe 500 N/mm<sup>2</sup>) work consists of accomplishing all related jobs like providing all labour, tools and plant, all materials and consumables such as welding electrodes, bolts and nuts, oxygen and acetylene gases, oils for cleaning etc., All of approved quality, the work shall be executed. In an expeditious and workmen like manner, as contemplated in the drawings and to the complete satisfaction of the project Engineer-cum – Estate Officer, CCMD, representative. The work shall also include providing shop primer coat of paint and grouting of hold down bolts.

## **8.0 PLASTERING- WORKS:**

### **8.1 EXTENT AND INTENT**

The contractor shall furnish all materials, labour, scaffolding, equipment, tools, plant and incidentals necessary as required for the completion of all plaster and wall finishes, subject to approval by the Project Engineer-cum- Estate Officer, CCMD.

### **8.2 GENERAL**

- 8.2.1 Plaster as here in specified shall be applied to all internal and external surfaces where called for. Flazed tile dado, terrazzo dado and wall finishes other than plaster shall be provided where indicated on drawings and schedule of finishes. Areas called for on drawings and typical shall be considered to apply to appropriate adjoining area whether shown on same drawings or not whether indicated or not.

- 8.2.2 All plaster works and other wall finishes shall be executed by skilled workmen in a workman like manner and shall be of the best workmanship and in strict accordance with the dimensions on drawings subject to the approval of the project Engineer-Cum-Estate Officer, CCMD.
- 8.2.3 The primary requirement of plaster work shall be to provide absolutely water tight enclosure, dense, smooth, and hard and devoid of any cracks on the interior and / or exterior. The contractor shall do all that is necessary to ensure that this objective is achieved. All plastering shall be finished to the true plane, without any imperfections and shall be square with adjoining work and form proper foundation for finishing materials such as paints etc.,
- 8.2.4 Masonry and concrete surfaces, which call for applications of plaster, shall be clean, free from efflorescence, damp and sufficiently rough and keyed to ensure proper bond, subject to the approval of the Project Engineer-Cum- Estate Officer.
- 8.2.5 Wherever directed by the Project Engineer-cum-Estate Officer, CCMD, or other representative, all joints between concrete frames and masonry infilling shall be expressed by a groove cut in the plaster. The said groove shall coincide with the joints beneath as directed. Where grooves are not called for the joints between concrete members and masonry infilling shall be 24 guage galvanized chicken mesh strip 400mm wide or as called for on drawings/documents which shall be in position before plastering.

### **8.3 CHASING AND CUTTING:**

All chasings, installations of conduits, insert boxes etc., shall be completed before any plastering or other wall finish is commenced on a surface. No chasing or cutting of plaster or other finish on a surface shall be permitted. Broken corners shall be cut back not less than 150mm on both sides and patched with plaster of paris as directed. All corners shall be rounded to a radius of 8mm or as directed by the Project Engineer-Cum-Estate Officer, CCMD.

### **8.4 SAMPLES:**

Samples of each, type of plaster and other wall finish shall be prepared well in advance of undertaking the work for approval by the Project Engineer-Cum-Estate Officer, CCMD.

### **8.5 PROPORTIONS:**

The materials used for plastering shall be proportioned by volume by means of gauge boxes.

### **8.6 PREPARATIONS OF SURFACES.**

The joints in all walls, both existing and freshly built shall be raked to a depth of 15 cleaned with wire brushes, dusted and thoroughly wetted before starting plastering work. Concrete surfaces to receive plaster shall be roughened by hacking over the

entire surface so that the skin of the concrete is completely removed, as approved by the Architect/ Employer to ensure proper key for the plaster.

### **8.7 PLASTER TO WALLS:**

Unless otherwise specified, all works shall be plastered and finished as follows:

Internal faces : 20mm thick with cement mortar 1:6 (one part of cement and six parts of fine river sand) finished smooth with lime rendering.

External faces: 12mm thick base coat with cement Mortar 1:4 (one part of cement and four part of fine river sand) finished rough to receive the final coat and 6mm thick final coat with cement mortar 1:3 (one part of cement and three parts of coarse river sand) sponge finished.

### **8.8 MORTAR MIXING**

Mortar shall be prepared as specified in small quantities as required and applied within fifteen minutes of mixing.

8.9 Plaster application shall be commenced only after the preparatory work is approved by the Project Engineer- Cum- Estate Officer, CCMD. Correct thickness of plaster shall be obtained by laying plaster screeds (gauges) at intervals of 1.5 m as directed. Mortar shall be firmly applied, well pressed, into the joints, rubbed and finished to give a smooth and even surface to the satisfaction of the Project Engineer-Cum-Estate.

### **8.10 CURING**

Finishing Plaster shall be kept wet for at least ten days after completion in hot weather, walls exposed to such shall be screened with matting kept constantly wet or by other approved means.

### **8.11 CLEANING PLASTERING:**

Plaster to ceiling, so fits of stairs flight slabs and similar locations, where called for, shall be 12 mm thick comprising of one part cement and three parts of clean fine sand unless otherwise specified. The surface shall be brushed, swept clean and thoroughly wetted before plastering. Mortar shall be applied firmly pressed to the surface, rubbed and finished smooth evenly subject to the approval of the Project Engineer-Cum-Estate Officer, CCMD.

### **8.12 CEMENT MORTAR:**

8.12.1 Cement mortar shall be of proportion specified for each type of work. It shall be composed of Portland cement and sand. The ingredients shall be accurately gauged and shall be evenly mixed together in a mechanical mixer. Care should be taken not to add more water than necessary. If hand mix is allowed, it shall be done on pucca waterproof platform. The gauged materials shall be put on platform and thoroughly mixed dry. Water shall then be added and the whole

mixed thoroughly until the mix is homogeneous and of uniform colour. Quantity of mortar mixed should not be more than what can be consumed within half an hour of mixing.

8.12.2 Cement mortar mix are specified in 1:2, 1:3, 1:4, 1:5 etc., the first figure will mean one part of Portland cement by volume and the second will mean so many parts of sand by volume. For example cement mortar 1:4 would mean

One part of cement and four parts of sand.

8.12.3 Cement and sand must conform to relevant I.S specification.

### **8.13 LIME RENDERING:**

This will be prepared out of best quality fat lime slaked at site with fresh water not less than one week or not more than two weeks before use. All impurities, ashes and improperly burnt stuff shall be screened and picked out before slackening. Slaked lime shall be screened through to remove all unslaked materials, stones etc., so that only a fine creamy paste is available for rendering. Slaked lime is to be diluted with just sufficient water to give a thick consistent pulp suitable for effective covering of base surface. Before the base coat sets, the lime rendering is applied and finished smooth and the entire plastered surface is made truly plane.

## **9.0 FLOORING:**

### **9.1 GRANOLITHIC FLOORING**

9.1.1 General: The flooring shall be of specified thickness and shall consist of 1:2:4 concrete base or as specified and 12mm thick granolithic wearing coat. The granolithic flooring shall be laid in alternate panels. The size of panels shall be as decided by the Project Engineer-Cum-Estate Officer, CCMD

9.1.2 Laying of 1:2:4 concrete base:

9.1.2.1 The 1:2:4 concrete shall be of graded coarse aggregate of maximum size 10mm, coarse sand and cement. The ingredients shall be thoroughly mixed with sufficient water to obtain the required plasticity.

9.1.2.2 The free water on the surface of the base shall be removed and a coat of cement slurry of the consistency of thick cream shall be brushed on the surface.

9.1.2.3 The prepared 1:2:4 concrete shall be laid immediately after mixing on the fresh grouted base. The concrete shall be spread evenly and leveled carefully. Low places shall be filled, humps removed and the whole surface again leveled. The layer shall be compacted by ramming trowel led and allowed to set.

9.1.2.4 Mixing and laying of wearing coat: one part of cement in dry state shall be mixed with 1.5 parts by volume of well graded/crushed granite chips of

6mm maximum size. The ingredients shall be then mixed with sufficient water so for ordinary concrete. The wearing coat shall be laid 12mm thick over the base concrete immediately after it has set, compacted and leveled with a steel trowel. Just sufficient trowel ling shall be made to give a level surface. The surface should not be over trowelled as excessive trowelling will bring the cement to the surface which shall be strictly avoided. When the initial set takes place, further compaction by steel trowelling shall be done and final brushing shall be made before the topping becomes too hard.

9.1.3 Curing as soon as the surface is hard enough, it shall be covered with sacking or sand and kept continuously wet for a period of at least one week.

9.2 A bed of cement mortar 1:4 shall be laid and properly leveled to average thickness of 20mm and the surface kept slightly rough to form a satisfactory key for the tiles, neat cement paste of honey like consistency shall be spread over mortar bed, over such an area so that the paste will not harden before laying tiles. Slabs shall be soaked in water for 15 minutes and allowed to dry. The slab shall be then fixed as per approved pattern with thin coat of cement paste applied on back of each slab and tapped with a wooden mallet till it is properly bedded in level with adjoining slabs. Joints shall be not more than 1:5 mm wide. The surplus cement grout that may have come out of the joints has to be wiped off gently and joints cleaned. The joints shall, be filled up with grey or white cement with an admixture pigment to match the shade of the slab. The flooring shall be cured for 14 days. Then it shall be polished according to IS: 1443, and pointed with cement mortar: 1:1 (1 part of cement and 1 part of fine screened sand) mixed with matching colour pigment.

### **9.3 GRANITE SLAB WORK:**

9.3.1 General: The slab must be of uniform thickness as specified, the variation in the thickness not exceeding 12 mm and must be from the same source. They shall be of uniform texture and colour free of any veins and streaks. All the edge shall be chiseled true to line, square and shape. The surface should be rough dressed/ one line dressed. Three line dressed pulman dressed/mirror polish as specified.

9.3.2 Rough Dressing: The stone surface to be chisel dressed to one plane by removing all bushings so that the maximum depression is not more than 6 mm.

9.3.3 One Line Dressing: This is done after the rough dressing is completed by point chiseling so that the variations are not more than 4mm. Work includes rough dressing also.

9.3.4 Two Line Dressing: This is done after, one line dressing is done by chiseling so that variations are not more than 2.5mm work includes rough and one line dressing also.

- 9.3.5 Three Line Dressing: This is done after two lines dressing is over by chiseling so that variations are not more than 1.5mm work includes rough, one line dressing also.
- 9.3.6 Pulmane Dressing: After the three line-dressing is over, the surface is smoothened by using a special pulmane tool to further even out three line dressed surface so that the maximum variation in surface evenness is not more than 1.0mm work includes rough, one line, two line and three line dressing also unless otherwise stated.
- 9.3.7 Mirror polishing: The surfaces are to be polished by grinding using manual or mechanical process to give a smooth even perfect plane surface or as may be directed. The polished surface should reflect light like a mirror and must be free from scratches and depressions.

#### **9.4 GLAZED TILING**

- 9.4.1 Glazed tiles shall be from an approved manufacture conforming to IS.777 of specified size, thickness and colour, All specials viz coves, internal and external angels, corners beads etc., shall be used wherever directed. Under layer of 12mm average thickness of cement mortar 1:3 proportion shall be laid tiles shall be well soaked in water washed clean and set in cement grout each tile being gently tapped with wooden mallet till it is properly bedded and in level with the adjoining tiles. The joints should be kept as thin as possible and in straight lines or to suit the required pattern after tiles have been laid surplus cement grout shall be cleaned off the depth of % mm and all dust and loose mortar removed joints shall then be flush pointed with white cement if necessary mixed with pigment to match the colour of the tile. The floor / dado shall be kept wet for 14 days, after curing the surface shall be washed with mild hydrochloric acid and clean water, the finished floor/ dado shall not sound hollow when tapped with wooden mallet, the rate will include the cost of under layer of cement mortar.

#### **10.0 PAINTING**

- 10.1 The specifications covers the various types of all surfaces thought the interior and exterior of the building the number of coats required in various situations and also the type of finish required for the several items of work such as cement based paint, plastic emulsion point, oil bound distemper etc., are specified in the schedule of quantities and specifications.
- 10.2 Before commencement of the work, the contractor shall provide sample panels of painting at this own cost for the approval of the Project Engineer-Cum-Estate Officer-CCMD, to enable him to keep an accurate check on the materials supplied and final shade to be painted. It is however, the responsibility of the contractor to provide any deviations and defects shall have to be Rectified by the contractor at his own cost.
- 10.3 Contractor shall protect not only his own work at all times but also all the adjacent work and materials by suitable covering, protection or other methods



acceptable to the Project Engineer-Cum-Estate Officer, CCMD during progress of painting, it is of painting work to remove all paint and varnish spots from floors, walls, glass panes and other surfaces and restore them to original conditions. The work generally touched up shall be attended to after all workmen have left. Accumulated – material, rubbish etc., have to be cleared and the premises left in clean, orderly and acceptable conditions.

- 10.4 Contractor shall provide scaffolding wherever necessary erected on double supports tied together by horizontals. No ballies, bamboos or planks shall rest on or touch the surface, which is being painted. Contractor is demand to have considered the following while tendering and no extra claim on account of these will be entertained.
- 10.4.1 Supplying the paint and other materials required of approved colour and brand.
- 10.4.2 Preparing the surfaces to be painted.
- 10.4.3 Providing and erecting scaffolding and removing the same after completion of the
- 10.4.4 Lifting of materials to any height and painting at all levels.
- 10.4.5 Applications of painting as per the specification and to manufactures instruction.
- 10.4.6 Curing, protecting the painted surfaces and adjacent work and thoroughly cleaning of premises.
- 10.5 The paint shall generally conform to the chemical composition and other characteristics laid down in the relevant Indian standard specification. The entire materials required for painting work shall be obtained direct from approved manufactures or their authorized agents and brought to site in original manufactures containers with seals unbroken.
- 10.6 Paint shall be ready mixed of quality of the approved brand and manufacture. Mixing of paint by the contractor at site will not be allowed, except preparation and their quality shall be strictly maintained as per manufacture's instruction and all as directed by the Project Engineer-cum-Estate Officer, CCMD. All the materials shall be kept properly protected when not actually in use. Lids of containers shall be kept closed. Materials which have become stale or flat (in opinion of the project Engineer-Cum-Estate Officer, CCMD) shall not be permitted to be used on the works and shall be removed from site forthwith. Any materials found not conforming to the relevant specifications shall have to be removed by the contractor from the site at his own expenses.
- 10.7 Providing two coats of synthetic enamel paint of approved make colour over one coat of primer on plastered surfaces, wooden surfaces and steel surfaces: A fully putty coating has to be given after primer coat in the case of wooden

surfaces. The putty shall be made from pure whiting mixed to the proper consistency with new linseed oil, a little white lead being mixed to help hardening of putty. On no account putty is to be used before primary coat. Primers to be used shall be according to the manufacture specifications.

10.8 The manner of taking measurements will be in accordance with ISI: 1200.

### **11.0 WHITE WASHING**

White wash shall be prepared from fat lime or shell lime slaked on site mixed with just enough water to make a thick paste and allowed to remain for atleast 7 days before use. At the time of using the paste shall be diluted with just sufficient water and strained through cloth. 4 kg of gun dissolved in hot water shall be added to each cubic meter of cream (115 GMS per cft). Ultra marine blue or other approved locally available colour pigment shall be added to give required whiteness. The number of coats as specified in the bill of quantities shall be added to give required whiteness. The number of coats as specified in the bill of quantities shall be applied by using flat brushes or spray pimps, on surface prepared. Each coat shall be allowed to dry before next coat is applied.

### **12 TREATMENT FOR SUNKEN FLOOR SLAB:**

- A. Brick bat aggregate shall be from well burnt bricks. The proprietary water proofing compound and the quantity to be used shall be as per para 15.1
- B. The surface shall be thoroughly cleaned with wire brushes. All loose scales shall be removed and dusted off. The surface (bottom as well as sides) shall be treated with cement slurry admixed with proprietary water proofing compound to penetrate interstices and fill the pores in the surface.
- C. After the slurry coat is laid, a layer of well burnt brick bats/ aggregates of about 40mm size shall be laid in cement mortar of mix as specified by the specialist firm but not leaner than 1:5 (a cement : 5 coarse sand) admixed with proprietary water proofing compound the mortar being filled to half the depth of the aggregate. The brick bat/aggregate layer shall be rounded off at junctions with the beam all etc., and tapered towards top to a height of 100mm long beams/ wall, etc., curing of this layer shall be done for 3 days.
- D. After curing the surface shall be applied with a coat of cement slurry admixed with proprietary water proofing compound.
- E. Joints of brick bat/ aggregate shall be filled fully with cement mortar of mix as specified by the specialist firm but not leaner than 1:4 (1 cement. 4 coarse sand) admixed with proprietary water proofing compound and top finished with average 20mm thick layer of some water. This layer of mortar shall be continued to the sides of beam. Wall etc., the height upto which this treatment is to be extended on the sides shall be as directed by the Engineer-in-charge.

The surface shall be finished smooth with cement slurry admixed with proprietary water proofing compound.

- F. While the water proofing treatment is 3qrie it shall be ensured that the outlet pipes are properly fixed arid the gap between the wall and pipes are properly filled with brick/stone aggregate and cement mortar admixed with proprietary water proofing compound and grouted with cement slurry admixed with proprietary water proofing compound by injection process.
- G. Water proofing treatment shall be cured for 10 days
- H. Measurements: measurements for the floor treatment shall be taken on plain area of floor treated nothing extra shall be paid for rounding off at junctions and taking the treatment along sides of beams and walls for about 100mm sides of beam/wall etc., where the treatment is only with mortar shall be measured and paid separately , length and breadth shall be measured correct to once centimeter and area calculated correct to 0.01 sqm
- I. Rates: The rates shall include the cost of all labour and material involved in all the operations described above. Base treatment and sides treatment will be paid separately under respective items.

## **PART II: SPECIFICATIONS FOR WATER SUPPLY AND SANITARY WORKS**

### **1.0 GENERAL**

#### **1.0 SCOPE OF WORK:**

The general character and the scope of work to be carried out is illustrated in the drawings and specifications. The contractor shall carry out and complete the said work under this contract in every respect in conformity with the rules and regulations of the local authority. The contractor shall furnish all labour, supply and install all materials, appliances, tools, equipments etc., necessary for the complete provision and testing of the whole plumbing services installation as specified here as per the relevant ISI codes as shown on the drawings. This also includes any material, appliances, equipment not specifically mentioned herein or noted on the drawings as being furnished or installed but which are necessary and customary to make a complete installation as shown on the drawings or described herein, properly connected and in working order.

In general, the work to be performed under this contract shall comprise of the following:

- 1.1 All incidental jobs connected with water supply services installation, such as excavation in trenches and back filling, cutting chases in concrete, brick etc., and making good cutting drilling holes through walls, floors and grouting for embedding of fixtures, equipment and fixing of valves, pumps etc.,
- 1.2 Furnish and install a complete workable, service installation as shown on the drawings and as per the latest ISI specifications including all that which is reasonably inferred.
- 1.3 Complete installation of internal water supply system.
- 1.4 Complete installation of the sewerage and sewerage appurtenances internally and around the building.
- 1.5 Complete installation of all sanitary and plumbing fixtures.
- 1.6 Co-operation with other crafts in putting the installation in places. Any work without regard or consultation with other trades, shall be removed by the contractor without any traditional cost to the employer, to permit the proper installation of all other work, as prescribed by the architects.
- 1.7 Repair all damages done to the premises as a result of this installation and remove all debris arising there from to the satisfaction of Project- Engineer – cum- Estate Officer.

- 1.8 Cleaning of all plumbing “fixtures, testing and showing satisfactory performance all the fixtures at the time of handing over to the Project Engineer-cum-Estate Officer.
- 1.9 It is the responsibility of the contractor to safe guard and takes care of all the fixtures fitted until the time handing over to the Project Engineer-cum-Estate Officer.
- 1.10 Painting of all concealed and exposed pipes as specified.
- 1.11 Assume full responsibility of all statutory requirements.
- 1.12 At the completion of the work, furnish necessary information like invert levels and layout of pipeline etc., and prepare final completion drawings to the Project-Engineer-cum-Estate Officer.

## 2.0 REGULATIONS AND STANDARDS:

- 2.1 The installations shall conform in all respects to the following board list of standards in general:

IS 3114 – 1965	:	Code of practice for laying of CI pipes.
IS 1230-1968	:	Specifications for mild steel tube, tubular and other steel
		pipe fittings part I
IS 1536 – 1980	:	Centrifugally cast (spun) cast iron pressure pipes for water, gas and sewerage.
IS 780 – 1980	:	Sluice valve for water works purposes.
IS 1520 – 1980	:	Horizontal centrifugal – pumps.

- 2.2.1 The installation shall also be in conformity with the byelaws and requirement of the local authority in so far as these become applicable to the installation wherever this “specification calls for a higher standard of materials and / or workmanship than those required by any of the above regulations and standards then this specification shall take precedence over the said regulations and standards. Wherever the specification require something which will violate the regulations, the regulations shall govern.

## 3.0 PERMITS AND TESTS:

On completion of the work, the Contractor shall obtain and deliver to the Project Engineer-cum-Estate Officer, CCMD certificates of final inspection and approval by the local authority as may be applicable. The Project Engineer-cum-Estate Officer, CCMD shall have full power to require the materials or work to be tested by any independent agency at the contractors expenses in order to prove their soundness and adequacy.

## 4.0 DRAWINGS AND SPECIFICATION

The drawings and specification shall be considered as part of this and any work or materials shown on the drawings and not called for in the specifications or vice versa shall be executed as if specifically called for in both. The contract drawings shall indicate the extent of general, arrangement of the fixtures, drainage system etc., and essentially diagrammatic. The drawings indicate the points of supply and termination of pipe runs and broadly suggest the routes to be followed. The work shall be installed as indicated on the drawings, however, any changes found essential to coordinate, this work with other trades shall be made without any additional cost. The data given herein and on the drawings is as exact as could be secured but its complete accuracy is not guaranteed. The drawings and specifications are of the assistance and guidance to the contractor and exact location distance and levels will be governed by the individual building and site condition, therefore approval of the Project Engineer-cum – Estate Officer, CCMD on tracing cloth.

## **5.0 MANUFACTURERS INSTRUCTIONS:**

Where manufacturers have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in job, covering points not specifically mentioned in these documents. These instructions shall be followed in all cases.

## **6.0 CHANGE IN DIMENSION**

If the size of the fixture mentioned is not available, then the nearest available size shall be fixed with due consent of the Engineer-in-chief, CCMD.

## **7.0 MATERIALS:**

- 7.1 Materials shall be of the best quality obtainable and unless otherwise specified they shall conform to the respective Indian Standards Specification.
- 7.2 Samples of all materials shall be as per the list of approved branch manufacture. The samples shall be got approved before placing order and the approved samples shall be deposited with the Engineer-in-chief, CCMD.
- 7.3 In case of non availability of materials in merits, sizes, the nearest size of EPS units shall be provided with prior approval of the Engineer-in-chief Project Engineer-Cum-Estate Officer, CCMD, for which no extra will be paid.

## **8.0 TRENCHES FOR PIPE DRAINS:**

- 8.1 Opening out trenches: In excavating the trenches etc., the road metalling pavement curbing etc., are to be placed on one side and preserved for reinstatement when the trench or other excavation shall be filled up at no extra cost.

Before any road metal is replaced, it shall be carefully shifted, the surface of all trenches and holes shall be restored and maintained to the satisfaction of the Architects. The contractor shall not cut or break down any live fence of trees in the one of proposed works but shall tunnel under them unless the Architects shall order to the contrary. The contractor shall scrub up and clear the surface over the trenches and other excavations of all stumps, roots and all other encumbrances affecting execution of the work and shall remove them from site to the approval of the Project Engineer-Cum-Estate Officer, CCMD.

- 8.2 Cutting of roads: All works across the roads, shall be carried out as per the directions of the Project Engineer-Cum Estate Officer, CCMD.
- 8.3 Excavation to be taken to proper depth: The trenches shall be excavated in all conditions of soil and to such a depth that the pipelines shall rest as described in the several clauses relating there to and so that the inverts may be at the levels given the drawings. In loose soil, the Project Engineer-cum-Estate Officer, CCMD. May order the contractor to excavate to a great depth than shown on the drawings to fill up the extra excavation with concrete, sand, gravel or other materials. For such authorized filling of materials the contractor shall be paid extra at the rates laid down under clause 20.0 of the general conditions of contract, if the extra work was ordered by the Project Engineer-Cum-Estate Officer, CCMD. If the contractor should excavate the trench to a greater depth than is required without a specific order to that effect in writing, the extra depth shall have to be filled up with concrete at the contractor's own cost to the requirements and satisfaction of the Project Engineer-Cum- Estate Officer, CCMD.
- 8.4 Refilling: After the pipes or other fittings has been laid and proved to be water tight, the trench or other excavation shall be refilled. Utmost care shall be taken in doing this, so that no damage shall be caused to the pipes and other permanent works. Filling in the trenches and upto 50cm above the pipes shall consist of the finest selected materials placed carefully and consolidated. After this has been laid, the trench and other excavation shall be refilled carefully in 15cm layers with materials taken from the excavation each layer being watered and consolidated.
- 8.5 Settlement and Damages : The contractor shall, at his own cost make good promptly, during the whole period the works are in hand, any settlement that may occur in the surfaces of roads, beams, footpaths, gardens, open spaces, etc., whether public or private caused by his trenches or by his other excavations and he shall be liable for any accidents caused thereby. He also shall at his own expenses and charge, repair and make good any damage to the buildings and other properties.
- 8.6 Disposal of surplus soil: The contractor shall at his own cost and charge, dispose within the site all surplus excavated material not required to be used on the works to within a distance of 50cm.
- 8.7 Timbering of pipe line and trenches: The contractor shall at all times support efficiently and effectively the sides of the pipe trenches and other excavations by suitable timbering, piling, sheering etc., without any extra cost. All timbering, sheeting and piling with their wallings and supports shall be of adequate dimensions and strength and fully braced and strutted so that there is no risk of collapse or subsidence of the walls of the trench. The contractor shall be held accountable and responsible for the sufficiency of all timbering, bracing, sheeting and piling used and for all damages to persons and property

resulting from the improper quality, strength, placing, maintenance or removing of the same.

- 8.8 Removal of water from pipeline, trenches etc., : The contractor shall at all times during the progress of work keep the trenches and excavations free from water which shall be disposed of by him in a manner as will neither cause injury to the public health nor to the work completed or in progress nor to the surface of any roads or streets nor cause any interference with the use of the same.
- 8.9 The width of the excavated trench shall be as per the table given below width at bottom

Excavation upto 90cms depth	33cm	33cm
90 to 150cm depth	60cm	60cm
150 to 300cm depth	75cm	75cm
300 to 500cm depth	90cm	100cm

- 8.10 Protection of existing services : All pipes, water mains, cables etc., met in the course of excavation shall be carefully protected and supported.
- 8.11 Concreting: All pipes at shallow road crossings and made up ground shall be laid on a bed of 15cm concrete with one part of cement, 4 parts of sand and 8 parts of 40mm gauge stone metal property consolidated. Concrete shall be laid to the full width of the trench and also in haunches.

## **8.12 CAST IRON PIPES AND FITTINGS**

- 8.12.1 Cast – iron soil, waste and vent pipes and fittings shall be of heavy quality conforming to IS 1536-1967 and fittings to IS 1537-1960
- 8.12.2 Claying and Jointing: The pipes shall be laid, underground, under the floors, or on walls either buried or exposed as the case may be as shown on the drawings.
- 8.12.3 Cast Iron, Pipes: Cast iron pipes shall be laid and jointed in conformity with the code of practice for laying of cast iron pipes. Cast iron pipes shall be jointed by best quality caulking lead free from all impurities in wet trenches, joints shall be made with lead wool. The spigot shall be centered in the adjoining socket by tightly caulking in sufficient turns of tarred gaskin to leave unfilled the required depth of socket for lead. Where the gaskin has been caulking tightly home, a jointing ring shall be placed round and barrel and against the face of the socket. Molten lead shall then be poured into fill the remainder of the socket in one with suitable tools by hammering right-round the joint, to make up for the shrinkage of the molten metal on cooling and shall preferably finish 3mm behind the socket face. Lead for caulking shall conform to IS 782-1966. The quantity of lead to be filled per joint in various sizes of cast iron pipes. Shall be as follows:

Water main pipes:                      Lead /joint (Kg)



80mm (3") pipe	1.8
100mm (4") pipe	2.2
125mm (5") pipe	2.6
150mm (6") pipe	3.4
200mm (8") pipe	5.0

8.12.4 The joints and pipes laid for water supply systems shall be tested to a pressure of 12kg.sqcm for two hours without developing leaks/fall in pressure. The drainage pipelines and joints shall be tested to a head of 150cm for two hours without developing leaks/fall in pressure. In case of leaks the piping shall be redone in such portion and the test repeated till achieving satisfactory results.

8.12.5 Under ground piping shall be of CI tyton type confirming to IS class A 1536 the piping shall be laid not less than 1Mt below the ground level. Suitable masonry/ PCC support anchor blocks shall be provided at change in direction with soil conditions are unsatisfactory.

8.12.6 All fittings shall be CI flanged confirming to IS 1538. The flanges shall be drilled as per relevant Indian Standards Flanges shall be faced and cleaned and shall have jointing of rubber insertion or asbestos compound. In case of tytron pipes the joint shall be made by using rubber gaskets as per manufactures specification. The joint shall be capable of withstanding a pressure of 10.5 Kg/Sqcm.

## **9.0 SLUICE VALVES**

Sluice valves shall conform to IS: 780 valves shall be of right hand type. Only flanged valves shall be used . Valve wheel shall have an arrow engraved or cast thereon showing the direction of turning open or close operation.

## **10.0 NON-RETURN VALVES**

Non return valve shall be of cast iron with gun metal seat. Non return of valves shall be of flanged type. Spring loaded valves shall not be used. The valves shall be suitable for a test pressure of 21 kgs/Sqcm.

## **11.0 MODE OF MEASUREMENT**

11.1 Excavation (General): the width of excavation shall be limited to as said earlier.

11.2 Cast iron pipes: Cast iron pipes shall be measured along the center line of the pipe including all specials in Rmt. The quoted rate for respective item shall be Rmt, and shall include the following:

- A. Cost of respective pipes and specials and jointing materials etc.,
- B. Laying fixing and jointing with necessary clamps, brackets, bolts, nuts and washers.
- C. Making good all damages to the parts of the building to suit the surroundings and making good the defects if any.
- D. Testing and making good the defects if any

Valves: Valves shall be per number only and shall include the following:

- A. Cost of valve and jointing materials
- B. Fixing and jointing with necessary bolts, nuts, rubber insertion etc.,
- C. Testing and making good the defects if any:

#### **11.4 GI Pipes and Fittings:**

The pipes shall be of the medium quality (class B) unless otherwise specified and shall be of galvanized iron, screwed socketed and shall conform to IS: 1239. They shall be manufactured by a firm of repute. All fittings shall be malleable iron galvanized fittings of approved best Indian make.

##### **11.4.1 LAYING AND FIXING**

11.4.1 Where pipes have to be cut or re-threaded, ends shall be carefully cut so that no obstruction to bore is offered. For internal work all pipes and fittings shall be fixed truly vertical and horizontal either by means of standard pattern holder bat clamps keeping the pipes (12mm) clear of the wall everywhere or concealed as re-directed.

11.4.1.2 For external work, G.I pipes and fittings shall be laid in trenches. The width of the trench shall be the minimum width required for working. The pipes laid underground shall not be less than 60cms. From the finished ground level. The work of excavation and refilling shall be done as specified elsewhere or concealed as directed.

11.4.2 Painting : The burred pipes shall be painted with two coats of bit mastic paint.

11.4.3 Testing: Before any pieces are painted or covered, they shall be tested to a hydrostatic pressure of 7 kg/sqcm pressure shall be maintained for atleast eight hours without appreciate drop in pressure, in addition to the sectional testing of water supply pipes, the contractor shall test the whole installation to the entire satisfaction of the Project Engineer-Cum – Estate Officer, CCMD. He shall rectify any leakages, failure of fittings or valves.

11.4.4 Mode of measurements: G.I pipes above and below ground shall be measured along the center line of the pipes and fittings the quoted rate for respective item shall be per Rmt and shall include the following:

- a) Cost of respective pipes and specials
- b) Laying, fixing and jointing with necessary clamps
- c) Cutting hole and chases in walls floors, etc., and making good the same
- d) Testing and making good the defects if any.

## **PART III: SPECIFICATIONS FOR ELECTRICAL INSTALLATION**

### **1.0 LEGEND:**

- 1.1 Internal electrification (general lighting and power) is for general lighting for fans, lugs, lights etc.

### **2.0 GENERAL**

- 2.1 The electrical installation shall comply in all respects with the requirements of the Indian electricity act, 1916 as amended from time to time and the Indian Electricity rules and Regulations currently in force.
- 2.2 Materials, fittings and appliances shall be of the best quality and of approved make/ manufacture; conforming to the relevant Indian Standard Specifications. Samples must be attached to Project Engineer-Cum-Estate Officer, CCMD for their approval well in advance, atleast prior to execution of work, (tenderers tenders may specify the name of makers/manufactures of the materials, fittings and appliances which they propose to use, while tendering)
- 2.3 Workmanship shall be I Class, conforming to the requirements of the I.E Rules and regulations currently in force. 2.4 it shall be the contractors responsibility to prepare the necessary drawings/ chart, and submit the same through proper channel to the concerned authorities for approval of the installations:

### **3.0 GENERAL LIGHTING:**

- 3.1 The wiring is to be done in concealed conduit for full unless otherwise specified. The distribution of circuit distribution boards and main board are as indicated in the layout.
- 3.2 The circuit distribution boards are all to be completely embedded in walls to make them flush to the surface.
- 3.3 The main control board to be fixed in position as indicated in the layout and in the manner indicated by the Project Engineer-Cum-Estate Officer, CCMD, the power supply is so be drawn from the existing overhead line through an underground cable system, using necessary size G.I pipe at the wall entry. The cable jointing work should be done by an experience person specially trained for such jobs. The scope of this work includes laying cables in trenches (the trenches to be prepared by the contractor himself) and the cable jointing using necessary compounds.
- 3.4 The scope of this work covers the supply and installation of fittings like lighting fixtures, ceiling fans, exhaust fans, complete in all respects like mounting accessories lamps, wiring etc.,

- 3.5 The wiring for lights, plugs, fans etc., shall be of “looping-in-system” and in each and every switch box a neutral point shall be made available for testing purpose.
- 3.6 Not more than two power socket outlets should be connected in the same circuit and the power plugs be wired with PVC insulated conductor wires drawn in conduit.

#### **4.0 POWER:**

- 4.1 Power wiring in conduits shall unless otherwise specified, also be of concealed type run on walls independent of general lighting wiring based on the principle of overhead bus bar systems.
- 4.2 The mains will be terminated and connected through immediate junction boxes as shown in the layout and type of termination shall be as detailed in the layout: The tapping connections to load circuit boards shall be from the individual intermediate junction boxes, which will be at suitable capacity fuse units. The neutral connection shall be direct without fuse.
- 4.3 The tapping connections to load circuit boards shall be from the individual intermediate junction boxes, which will be at suitable capacity fuse units. The neutral connection shall be direct without fuse.
- 4.4 The control boards for the load outlets shall be fixed at a height of not more than 5 ft from the floor level and shall be in such a position as will be indicated by the Project Engineer-cum-Estate Officer at the time of execution.
- 4.5 All the intermediate junction boxes and the load control boards shall be suitable for flush mounting on the walls.
- 4.6 A portion of the power main pipes shall be possible to run the same on walls.

#### **5.0 EARTHING:**

- 5.1 Earthing in the case of power wiring shall be with soft drawn bars copper wire of size not less than 10 SWG, in double run suitably fixed on to the surface of the conduit by means of copper earth clips to ensure perfect electrical contact and the earthing wire shall run throughout the length of the conduit. At the main board level of individual earth wire runs shall be suitably interconnected firmly by means of earth clips to ensure proper continuity of earth connections, as well as full electrical contacts with the conduit pipes of the intermediate junction box and the load control boards and any other metal works in the wiring system shall all be suitably connected for perfect earth connections with insulated copper wire of size not less than 22G interconnections to the main earth loads. All the above works shall be in conformity with IS 732-1963

Code of practice for electrical wiring installation (system voltage not exceeding 650v)

## **6.0 GENERAL LIGHTING:**

- 6.1 Insulated copper wire of not less than 22 G shall be used for the running of continues earth wire all along with conduits and shall be firmly bounded by means of suitable size earth clips, externally in order to have good electrical contact Bare copper wire sizes not less than 4 SWG shall be used for the main earthing connections.
- 6.2 These two earthing point outside the building shall be according to the I.S specifications for pipe earthing (IS 732-1963) provision shall be made at the light and fan outlets for earthing connections, so that they can be used wherever found necessary instruction from the Project Engineer-Cum-Estate Officer, CCMD.

## **7.0 Materials:**

- 7.1 The conduit pipes to be used shall be heavy guage not less than 2mm thick of PVC conduit and good quality. The minimum size of conduit to be used shall be  $\frac{3}{4}$  " dia. The conduit fittings like bends, junction boxes etc., should be of standard quality and shall be with good deep matching threads to suit the conduit pipes and shall be free from burs etc.,
- 7.2 The switch boxes etc., shall be metal clad out of M.S Sheets not less than 16SWG either square or oblong in shape and in suitable sizes as per requirements and shall be provided with earthing terminal screws for body earthing connections. The depth of the boxes shall be such that they should fully be embedded in the wall, flush with the finished wall surfaces.
- 7.3 The top covers of these boxes be of either laminated sheets of thickness between 1/8" to 1/4" as required for perpex sheets.
- 7.4 The control switches for lights shall be hush type as specified 7.5 the 5 amps plugs and socket shall be 3 pin flush type
- 7.5 The 15 amps 3 pin power plugs shall be preferably flush mounting type with a combined switch and shall be controlled by a fuse or a miniature circuit breaker single pole type.

## **8.0 PARTICULAR SPECIFICATIONS:**

- 8.1 Type/system of wiring : only loop in system of wiring with PVC in conduit (surface as per details in schedule) and junction boxes where absolutely necessary and only at the places approved by the Engineer-in-Chief, CCMD.
- 8.2 Wires: Single core multistrand copper PVC of approved make and conforming to ISI only should be used.

- 8.3 Conduit: Heavy gauge of 2mm thick PVC conduit pipe. Conduit drops must be laid to plumb. PVC bushings should be provided at all ends of conduits.
- 8.4 Workmen: All work must be executed by licensed electrical wiremen possessing valid licences.
- 8.5 Switches: All 5 amps switches and 3 pin wall plugs must be of good quality or equivalent approved make.
- 8.6 Florescent Fittings: Light fittings should be complete in all respects including clamps reflectors, tubes, chokes, condensers, starters and internal wiring, extras on this account not admissible. The rate quoted must include these elements as well. Any damage to these fittings during erection/ installation should either be made good or fitting replaced totally.
- 8.7 Cables: Cables shall be with aluminium conductor, PVC insulated conforming to IS specification.
- 8.8 The contractor should enclose the pamphlets, catalogues of various materials offered while submitting the tender. The tenderers are required to submit along with their tender the list of makes of all equipments, fittings, fans, lamps, switches, gear, fuse gear, conduits and accessories, wiring materials and accessories. Non compliance to this will subject to their tender for disqualification or rejection.
- 8.9 Earthing: All machine parts, metal covers, switches, panels, fittings should be I/P earthed as given in the schedule and this has to be approved by the electrical inspector. The procedure should be strictly from L.E.E Regulations and Indian Electricity Act. Earthing in continuity for conduit pipes throughout and at junction boxes should be maintained by check nuts on either side and earthing clamps where necessary.
- 8.10 Boards: The main board and the sub distribution boards should be metal clad. The M.S sheet used for the box should be 3 mm thick and holes of the required diameter for incoming and outgoing pipes should be drilled in it.
- 8.11 Wiring diagrams: The contractor shall, on completion of electrical works executed in the budding furnish in duplicate the wiring diagrams indicating the light, power, fan points/outlets etc., indicating the colour code also so as to enable easy identification of circuits.

**8 (a) CONDITIONS/INSTRUCTIONS TO BE NOTICED BY TENDERER BEFORE QUOTING FOR THE WORK****I. DETAILS TO BE FURNISHED FOR ENGAGING SUB-CONTRACTOR FOR SPECIALISED WORKS.**

The tenderer shall be required to engage agencies of standing and repute who have experience in executing works of similar nature and magnitude. Such specialized trades cover electrical installation (HT/LT), Lifts, A.C. sanitary and water supply works, firefighting installation and any such other trades as may be directed by the Institute. The successful tenderer shall be required to engage Sub-agencies for such specialized trades only with the prior written approval of the Project Engineer cum Estate officer after giving an opportunity to the Project Engineer cum Estate officer to evaluate the experience and competence of the sub-agency for each trade. In order to ensure implementation of this requirement, it is required that each tenderer shall submit along with his tender, names of three sub-agencies for each trade amongst whom tenderer proposes to engage if successful in the tender. Along with names of sub-agencies for each trade, the tenderer shall furnish in detail the following particulars in respect of each sub-agency in the format furnished in Technical Bid.

All such information concerning sub-agencies shall be furnished along with the tender. Any tender containing insufficient information in this regard is liable for rejection. In the event of non-compliance of this requirement, the Institute shall have the right to nominate any sub-agency who in their opinion meets the selection criteria. In such event it would be incumbent on the successful tenderer, to accept and appoint the nominated sub-agency without demur and on this account, if there is any additional cost, such cost shall be borne by the successful tenderer. The Institute shall have no liability on this account.

The Institute has the right to evaluate the experience, reputation etc., of such sub-agencies and on their approval in writing to the successful tenderer, successful tenderer shall be required to engage only such approved agencies for execution. If the Institute is not satisfied with the performance or capability of the names in the panel furnished by the tenderer, the successful tenderer shall be required to engage an agency nominated by Institute.

In all these matters, there shall be no additional financial implication to the Institute. The successful tenderer shall be required to execute works within the accepted rates only and no claim will be accepted due to the Institute, insistence on engaging any sub-agency. The Institute further reserves the right to instruct the successful tenderer to terminate the work of sub-agency at any time during the contract, if the performance is found unsatisfactory. In such case, the successful tenderer shall be required to furnish a further panel of names from whom a similar selection can be made by the Institute. In this instance also, the Institute is not liable for any additional cost. Responsibility for the delay occurred in this process, if any shall rest with the successful tenderer.

- 8.1 It is the responsibility of the successful tenderer to ensure that the sub-agencies engaged in the work comply with all the clauses in the agreement between the Institute and the successful tender. It shall be responsibility of the successful tenderer to exercise first line supervision on the works executed by his sub-agencies including supervision on the quality of materials and workmanship and to ensure that the sub agencies comply with the technical specifications, drawings and bill of quantities. The successful tenderer shall also establish competent site organization technically and administratively to ensure that the works of various sub-agencies are supervised and well co-ordinate to ensure proper sequencing of construction, and finishing works and to ensure that the overall time schedule is fully complied with. The detailed construction programme schedule to be furnished by successful tenderer shall include action plan for procurement of materials and execution of works at site for each of the sub-agency and the detailed construction programme schedule shall reflect proper integration of each component of the building to ensure well-coordinated execution so as to complete the project including services within the stipulated time schedule.
- 8.2 Every tenderer shall furnish Line of Credit / Over Draft facility to the agency from any Public Sector Undertaking Bank/Scheduled commercial Bank/Nationalized Bank for a sum of \_\_\_\_ Lakhs as to their financial soundness without which such tender may not be considered further at the discretion of the Institute without questioning thereof.
- 8.3 Dismantling/Demolition of existing buildings/structures shall be commenced in the order of preference as approved by the Institute whose discretion in this regard is final and binding on the contractor.
- 8.4 Pre-measurements of all items of work shall be taken before demolition or dismantling and specification for deduction for voids, openings etc., shall be on the same basis as that adopted for new construction of the work.

- 8.5 Existing service lines such as electrical, water supply, sewer lines, telephone lines etc., shall be carefully protected and preserved before commencement and during excavation, dismantling /demolition operations. Details of UG facilities shall be provided to the successful tenderer. Any damage caused to the aforesaid service lines, etc., during excavation, demolition/dismantling shall be made good at Contractor's own expense/cost. Restoration of any service lines, which needs to be shifted and found in the proposed site, is the responsibility of the contractor and the agency shall carry out the work as per the direction of Project Engineer the cost of such work will be borne by the Institute.
- 8.6 Dust nuisance to neighbor shall be minimized by providing and erecting screens to the required height as per direction of Project Engineer cum Estate officer with Aluminum sheets or canvas or other suitable material before commencement of the work. The site shall be cleared off such protection arrangement after virtual completion of work. All the operations shall be carried out strictly in accordance to regulations of municipal and other local authorities and shall be restricted to normal working hours.
- 8.7 No debris or materials got from dismantlement/demolition the building(s) shall be thrown in the public road causing inconvenience to the traffic and any fine or penalty imposed by local authority for non-compliance of this provision shall be borne by the contractor.
- 8.8 ***Excess excavated earth including debris etc., collected at site during and after completion of the work shall be carted out of the Institute premises by the contractor. The road used for transportation shall be kept clean without any spillages.***
- 8.9 The Contractor shall be responsible for any injury to persons, animals, or things and for all structural damage to property which may arise from the operation or neglect of himself and or any nominated sub-contractors, contractor's Employees and or third party whether such injury or damage arising from carelessness, accident or any other cause whatsoever, in any way connected with the carrying out the construction/dismantling/demolition.
- The contractor shall take required insurance cover with an approved insurance company as provided in the contract and deposit with the Institute well before commencement of construction/ demolition / dismantling.
- 8.10 The successful tenderers shall make own arrangements to obtain all materials required for the work including **cement and steel** from approved vendors.
- 8.11 **The Agency shall bring the approved Ready-Mix Concrete from outside IISc for RMC works based on the approved design mix for which necessary certificate should be furnished. Regarding minimum cement content relevant IS specifications shall prevail. Only Ordinary Portland land cement shall be used for RMC works.**
- 8.12 **Preservation of trees:** The contractor shall preserve all existing trees in and adjacent to the site which does not interfere with the construction as determined by the Engineer-in charge.
- 8.13 Drawings and working Details: The work shall be carried out strictly in accordance with the approved plans and estimates and specifications and as per the instructions of the Engineer-in-charge, and no deviations or changes are permitted without the written order of the Engineer. The designs and drawings enclosed with the tender documents are only typical and tentative. The working drawings and the working details of the several components of works will be prepared and made available at the time of execution and the contractor shall carryout the work in accordance with such working drawings and working details.
- 8.14 **Omissions and discrepancies in drawings and instructions:**
- 8.14.1 In all cases of omissions, doubts or discrepancies in the dimensions or discrepancies in the drawings and item of work, a reference shall be made to the Project Engineer cum Estate officer, whose elucidation and elaboration shall be considered as authorized. The Contractor shall be held responsible for any error that may occur in the work through lack of such reference and precautions.
- 8.14.2 The contractor shall be responsible for accuracy for all shapes, dimensions and Alignments both vertical and horizontal etc., of all the components of the work.



**8.15 Lands for the use of the Contractors Camp:**

The contractor shall have to make his own arrangements at his own cost for construction of living accommodation outside the IISc premises. The Employee shall not provide any space / building for labour camp.

**8.16 Undesirable Person to be removed from site:**

The contractor shall not employ on site any person who is undesirable, if in the opinion of the Project Engineer the person or persons at site of work employed on behalf of the contractor is/are considered undesirable. The Project Engineer shall notify the contractor to this effect and the contractor will be bound by the decision of the Project Engineer to remove such person or persons from the site of work and from the labour camp. The contractor shall not be entitled to any damage or loss on this account. On the contrary, the contractor shall be liable to compensate the Institute for any loss or damage to the Institute property caused by the employment of such person.

**8.17 Labour Statistics:**

The contractor shall submit daily reports on the following:

(a) Total No. of labour employed in the working area.

**8.18 Execution of work during night time:**

The work shall normally be carried out between 08.00 hours and 17.00 hours with a break of one hour and when permitted during night period, the second shift shall be between 17.00 hours and 00 hours with a break of half an hour during night. When ordered to work at night, adequate provision for lighting the working area should be made by the contractor at his cost and got approved by Engineer. The agency shall not be paid extra for the works executed during night.

**8.19 Safety code:**

8.19.1 The Contractor at a prominent place at work spot should bring these safety provisions to the notice of all concerned by display on notice board. The persons responsible for compliance of the safety code shall be named therein by the contractor.

8.19.2 To ensure effective enforcement of the rules relating to safety precautions, the arrangement made by the contractor shall be open to inspection by the Labour Officer, Engineer or his representatives.

8.19.3 All necessary personal safety equipment's as considered adequate by the Engineer should be kept available for immediate use of persons employed at the site and maintained in the good condition and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

8.19.3.1 Workers employed on mixing concrete, cement grout, cement mortar shall be provided with protective footwear protective goggles and protective gloves.

8.19.3.2 Those engaged in mixing or stacking cement or any materials injurious to the eye, nose and mouth shall be provided with a face mask and protective cover free of cost by the contractor.

8.19.3.3 Those engaged in welding work shall be provided with welder's protective eye Shield and gloves.

8.19.3.4 Stonebreakers shall be provided with protective goggle and protective clothing and seated at sufficiently safe intervals.

8.19.3.5 Those engaged in binding and fabricating steel shall be provided with protective gloves.

8.19.3.6 Those engaged in deep cuts, large rock excavation shall be provided with helmets.

8.19.3.7 All labour / persons at work shall wear helmet compulsorily

- 8.19.4 When the work is near any place where there is risk of drowning all necessary equipment's shall be kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment of all injuries likely to be sustained during the course of work.
- 8.19.4.1 Adequate and suitable caution and danger signal boards shall be prominently exhibited at road/high tension overhead line/where heavy electrical machines are working where overhead cranes or hoist; derricks, winches are working where blasting zone is demarcated. The content of the board shall be in English and the local language for easy identification.
- 8.19.4.2 All scaffolding, ladder, stairways, gangways, staging, centering, form work and temporary support and safety devices etc., shall be sound in strength and constructed and maintained as such throughout its use. The agency shall obtain approval from Project Engineer cum Estate officer for scaffolding, formwork etc., before commencement of work.
- 8.19.4.3 No materials on any site of work shall be so stacked as to cause danger or inconvenience to any persons or public.
- 8.19.4.4 The Contractor shall provide all necessary fencing and lighting to protect the public/working men from accident and shall be bound to bear the expense of defense of every suit action or other proceedings of law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost, which may be awarded in any such suit action or proceedings to any such persons or which may with consent of the contractor be paid to compensate any claims by any such person.
- 8.19.4.5 No electric cables or apparatus, which is liable to be a source of danger to persons, employed shall remain electrically charged unless a caution Board is put into that effect and close approach to the same is prohibited.
- 8.19.4.6 All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosives. No floor, roof or other portion of any building used for residence shall be so over-loaded with debris or materials so as to render it unsafe.
- 8.19.4.7 The final disposal of water used for work or removed from work spot as well as the supply used for domestic consumption shall be as directed by the Engineer. The contractor shall make his own arrangement for purification of domestic water supply used by his staff and labour colony and used on the site of work to the satisfaction of the Engineer.
- 8.19.4.8 The source of drinking water supply/distribution system in workers colony shall be protected from chances of contamination by poisonous materials epidemic causing infections bacteria etc., by maintaining the source and system under adequate hygienic conditions.

Notwithstanding the above clauses from 8.19 (1) to (4) there is nothing in this to exempt the contractor to exclude the operations of any other Act or Rules in force of the Central Govt., State Govt.

## 8(b) CONDITIONS FOR ELECTRICAL WORK:

### 8.1 GENERAL

These conditions are meant to amplify the specifications and General Conditions of Contract. If any discrepancy is noticed between these conditions, Specifications, Bills of Quantities and Drawings, **the most stringent of the above shall apply for execution of the work.**

The materials, design and workmanship shall satisfy the specifications contained herein and Codes Referred to. Where the technical specifications stipulate the requirement in addition to those contained in the Standard Codes and specifications, those additional requirements shall also be satisfied. In the absence of any Standard/ Specifications covering any part of the work covered in this tender document, the instruction/ directions of Project Engineer will be binding on the contractor.

The scope of this section is to describe materials and systems for complete electrical installations of building which form together with the project documents, a complete volume of work and quality description. All electrical installation shall be of high quality, safe, complete and fully operational including all necessary items and accessories whether or not specified in detail. All electrical work shall be completed in accordance with the regulations and standards to the satisfaction of the Project Engineer. The general provisions, provisions and general requirements apply to the entire installation.

The work shall be carried out simultaneously with building work and shall be continued till it is completed satisfactorily along with the completion of essential portions of the building works.

During the progress of work, completed portion of the building may be occupied and be put to use by the owner but the contractor shall remain fully responsible for the maintenance of electrical installations till the entire work covered by this contract is satisfactorily completed by him and handed over to the institute.

### 8.2 SCOPE OF WORK:

8.2.1 The scope under this contract shall include the internal electrical installation for the work. The work to be carried out under this contract shall cover the supply, installation, testing and commissioning of the complete electrical installation as detailed herein under and shown in the drawings and specifications.

In general the work to be performed under this contract shall comprise of the following:

- a) Supply, installation, testing and commissioning of All Main Lighting panels, distribution panels and other miscellaneous panels.
- b) Supply, installation, testing and commissioning of mains and sub mains, distribution cables and cable trays etc.
- c) Supply, installation, testing & commissioning of all wiring/cabling for lights, fans and power outlets including point and circuit wiring along with wiring accessories etc.
- d) Supplying and drawing of cables/wires for telephone system including installation of terminal boxes etc.
- e) Supply, Installation, testing and commissioning of light fixtures as indicated in the BOQ and installation, testing and commissioning of lighting fixtures supplied by the owner, if

any.

- f) Supply, installation, testing and commissioning of external lighting poles, cables lighting fittings panels/feeder pillars etc.
- g) By only licensed Electrical Contractor holding valid 'A' grade license issued by Electrical Inspector to Govt. of Karnataka.

Contractor shall carry out and complete the said work under this contract in every respect in conformity with the current rules and regulations of the local electricity authority. The contractor shall furnish all labour and install all materials, appliances, equipment, necessary for the complete provision and testing of the whole electrical installation as specified herein and shown on the drawings. This also includes any materials, appliances, equipment not specifically mentioned herein or noted on the drawings as being furnished or installed but which are necessary and customary to make complete installation with all outlets for power, light, telephone conduits and other electrical systems/& Extra low voltage systems shown on the schedule and described herein, properly connected and in working condition.

The work shall include all incidental jobs connected with electrical installation such as excavation in trenches and back filling, cutting/drilling and grouting for fixing of fixtures, equipment, making good the damages etc.

### 8.3 **RATES:**

8.3.1.0 The rates quoted shall be deemed to allow for all minor extras and constructional details which are not specifically shown on drawings or given in the specifications but are essential in the opinion of the Project Engineer to the execution of works to conform to good workmanship and sound engineering practice. The Project Engineer reserve the right to make any minor changes during the execution without any extra payment.

8.3.1.1 The Project Engineer decision to clarify any item under minor changes, minor extras and constructional details shall be final, conclusive and binding on the Contractor.

8.3.1.2 The rates quoted by the Contractor shall be net so as to include all requirements described in the contract agreement and no claim whatsoever due to fluctuations in the price of material and labour will be entertained.

8.3.1.3 The rates quoted by the Contractor shall include for supplying material and labour necessary for completing the work in the best and most workmanship like manner to the satisfaction of the Project Engineer. The rates shall be complete in all respects including cost of materials, erection, fabrication, labour, supervision, tools and plant, transport, sales and other taxes, royalties, duties and materials, contingencies, breakage, wastage, sundries, scaffoldings, etc. on the basis of works contract. The rates quoted shall include all taxes, duties, transport, insurances, octroi, or any other levies applicable under the statute.

8.3.1.4 In case the rates of identical items under different sub-heads/parts are different, the lowest of these will be taken for the purpose of making the payments.

8.3.1.5 The rates for different items are for all heights, depths, widths and positions, unless otherwise specified against the item. No claim in respect of any leads/lifts for any item specified in the Schedule of Quantities, for which separate items for lead/lift do not exist in that schedule, will be entertained.

8.3.1.6 The work shall be executed as per the programme drawn or approved by the Project Engineer and

it shall be so arranged as to have full co-ordination with any other agency employed at site. No claim for idle labour shall be entertained nor shall any claim on account of delay in the completion of the work be tenable except extension of time secured by the contractor on request to be submitted to the Engineer-in-Charges.

**8.3.1.7 The Contractor shall permit free access and afford normal facilities and usual convenience to other agencies or departmental workmen to carry out connected work or other services under separate arrangements. The Contractor will not be allowed any extra payment on this account.**

**8.3.1.8** The contractor shall provide all equipment's, instruments, labour and such other assistance required by the Project Engineer for measurement of the works, materials etc.

**8.3.1.9** Even though the payment shall be effected under different items in the schedule of quantities, the various items in the schedule of quantities shall be deemed to cover all aspects of the work for the completion of the work as per drawings, from excavation to the finishing notwithstanding any space adjustment possible omission in the description of the item and specifications thereof regarding incidental items of work, without which the whole work cannot be deemed to have been included under the scope of the different items of the schedule of quantities. The Contractor is advised to keep this in mind while quoting rates as no claims in this regard shall be entertained.

#### **8.4 AWARENESS OF SITE CONDITIONS AND CARRYING OUT OF SITE INSPECTION PRIOR TO TENDER SUBMISSION**

Prior to the preparation and submission of his Tender, the Contractor shall make visits to the site and carry out all the necessary inspections and investigations in order to obtain all information and to make his own assessment of the conditions and constraints at site, including the means of access to it. The Contractor shall make himself aware of all the features of the site and the working conditions and space and shall, in general, be responsible for obtaining all the necessary and requisite information needed for him to prepare and submit his Tender.

Should the Contractor require any clarifications he shall seek these in writing from the Project Engineer before submitting his Tender. At no stage will any extra claims be entertained or allowed on any matter or for any reason arising from or as a consequence of the Contractor's failure to comply with all the requirements stipulated in this Clause.

#### **8.5 WORK AND WORKMANSHIP**

**8.5.1** To determine the acceptable standard of workmanship, the Project Engineer may order the Contractor to execute certain portions of works and services under the close supervision of the Project Engineer. On approval, they shall label these items as guiding samples so that further works are executed to conform to these samples.

#### **8.6 TEST CERTIFICATES**

The contractor shall submit copy of test certificates for all the major electrical equipment such as circuit breakers, CTs, PTs, instruments, relays, busducts, rising mains, busbars, cables etc., and panel as a whole, confirming to relevant IS/BIS standards issued by manufacturers.

#### **8.7 SAMPLES AND CATALOGUES**

Before ordering the material necessary for these installations, the contractor shall submit to the Engineer-in-Charge/Consultants for approval, a sample of every kind of material such as cables, conductors, conduits, switches, socket outlets, circuit breakers, lighting fixtures, boxes etc., along with the catalogues with their dimensional details.

For major items such as sub lighting panels distribution boards, the submission of drawings/catalogues along with technical details shall be enough. Prior to ordering any electrical equipment/material/system, the contractor shall submit to the Engineer-in-Charge/Consultants the catalogues, along with the samples, where applicable, from the approved manufacturer. The contractor shall arrange inspection and testing at the manufacturer's factory or assembly shop for final approval. No material shall be procured prior to the approval of the Engineer-in-Charge/Consultant.

Also contractor shall ensure that the dimensional details of the equipment fit into the allotted space provided in the building.

## **8.8 COMPLETION CERTIFICATE**

On completion of the electrical installation a certificate shall be furnished by the contractor countersigned by the licensed supervisor, under whose direct supervision the installation was carried out.

## **8.9 PERFORMANCE GUARANTEE**

The contractor shall indemnify the Institute against defective materials and workmanship for a period of one year after completion of the work. The contractor shall also hold himself fully responsible during that period for reinstallation or replacement at free of cost to institute, the following :

8.9.1 Any defective work or material supplied by the Contractor.

8.9.2 Any material or equipment damaged or destroyed as a result of defective workmanship by the contractor.

## **8.10 RATE ANALYSIS**

At anytime and at the request of the Project Engineer the contractor shall provide details or breakdown of costs and prices of any part or parts of the works.

8.11 The Project Engineer reserves the rights to delete any item from the contractor's scope of works.

## 9. CONTRACTOR'S LABOUR REGULATIONS

### ANNEXURE I.

#### 9.1 DEFINITION:

In these regulations unless otherwise, expressed or indicated the following words and expressions shall have the meaning hereby assigned respectively that is to say:

- 9.1.1 Labour means workers employed by the contractor or the Institute directly or indirectly through sub-contractor or any other person, or any agent on his behalf on a payment as per prevailing Karnataka State labour regulations and will not include supervisory staff like overseers etc.
- 9.1.2 Fair wages means whether for item or place of work notified at the time of inviting tenders for the work and where such wages have not been so notified, the wages prescribed by the Karnataka Public Works Department for the district in which the work is done.
- 9.1.3 Contractors shall include every person whether a sub-contractor head or agent employing labour on the work taken contract.
- 9.1.4 The relevant orders of Government of Karnataka in regard to payment of wages as amended from time to time shall be followed by the contractor.

#### 9.2 WORKING HOURS:

- 9.2.1 Normally working hours of a labour employed should not exceed 8 hours a day. The working day shall be so arranged that inclusive of interval for rest if any, it shall not spread over more than 12 hours on any day.
- 9.2.2 When a worker is made to work for more than 8 hours on a day or for more than 48 hours in any week, he is entitled to double the ordinary rate of wages. Children shall not be made to work.
- 9.2.3 Every worker shall be given a paid weekly holiday normally on Sunday.

#### 9.3 DISPLAY OF NOTICE REGARDING WAGES ETC.

The contractor shall (a) before he commences his work on contract, display and correctly maintain in a clean legible condition in conspicuous places on the work, notices in English and in the local language spoken by the majority of the workers, giving the rate of wages which have been certified by the Regional Labour Commissioner, as fair wages and the hours of work which such wages are earned, and a copy of such notices shall be sent to the certifying officers.

#### 9.4 PAYMENT OF WAGES:

Wages due to every worker shall be paid to him direct.

#### 9.5 FIXATION OF WAGES PERIODS:

- 9.5.1 The contractor shall fix the wages period of which the wages shall be payable.
- 9.5.2 Wages of every worker employed on the contract shall be paid.
  - 9.5.2.1 In case of establishments in which the wage period is one week, within three days from the end of the wage period wages shall be paid.
  - 9.5.2.2 In the case of other establishment before the expiry of the 7<sup>th</sup> day or 10<sup>th</sup> day from the end of the wage period according to the numbers of the workers employed in such establishment does not exceed 100 or exceeds 1000.

9.5.3 When the employment of any workers is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the days succeeding the one which his employment is terminated.

9.5.3.1 All payment of wages shall be made on a working day except when the work is completed before the expiry of the wages period in which case final payment shall be made within 48 hours of the last working day at work site and during the time.

NOTE: The term working day means a day on which the labour is employed and the work is in progress.

## 9.6 FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES:

The Wages of workers shall be paid to him without any deductions of any kind except the following:

### 9.6.1 Deductions:

9.6.1.1 Deductions for absence for duty i.e., from the place or the places whereby the terms of his employment he is required to work. The amount of deductions shall be in proportion to the period for which he was absent.

9.6.1.2 Deductions for damage or loss of goods expressly entrusted to the employed person for custody or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to neglect or default.

9.6.1.3 Deduction for recovery of advance or for adjustment of over payment of wages, advance granted shall be entered in a register.

9.6.1.4 And other deductions which the Institute may from time to time allow.

### 9.6.2 Fines:

9.6.2.1 No fine shall be imposed on any worker save in respect of such acts and the Commissioner of Labour has approved omissions on his part as.

9.6.2.2 No fine shall be imposed on a worker and no deduction for damage or loss be made from his wages until the worker has been given an opportunity. Undertaking of showing cause against such fines or deductions.

9.6.2.3 The total amount of fines which may be imposed in any one wage period on a worker shall not exceed an amount equal to the wages payable to him in respect of that wage period.

9.6.2.4 No fine imposed on any worker shall be recovered from him by installments or after the expiry of sixty days from the date which it was imposed.

9.6.2.5 Every fine shall be deemed to have imposed on a day of the act or omission in respect of which it was imposed.

9.6.3 The contractor shall issue an employment card in Form III to each worker on the day of the worker's entry into the employment. If the worker has already any such card with him for the previous employment of contractor, he shall merely endorse that employment card with relevant entries. On termination of employment, the employment card shall again be endorsed by the contractor and returned to the worker.

## 9.7 REGISTER OF UNPAID WAGES:

The contractor should maintain a register of unpaid wages in such a form as may be convenient at the place of work but same shall include the following particulars:

9.8.1 Full particulars of the laborer's whose wages have not been paid.

9.8.2 Reference number of the muster roll and wage register

9.8.3 Rate of wages

9.8.4 The period

9.8.5 Total amount not paid

9.8.6 Reasons for not making payment



- 9.8.7 How the amount of unpaid wages was utilized
- 9.8.8 Acquaintance with dates.

#### 9.8 REGISTER OF ACCIDENTS:

The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars.

- 9.9.1 Full particulars of the laborers who met with accidents.
- 9.9.2 Rate of wages
- 9.9.3 Sex
- 9.9.4 Age
- 9.9.5 Nature of accidents and cause of accident
- 9.9.6 Time and date of accidents
- 9.9.7 Date and time when admitted in Hospital
- 9.9.8 Date of discharge from the Hospital.

#### 9.9 REGISTER OF FINES ETC.

- 9.9.1 The contractor shall maintain a register of fines and a register of deductions for damages or loss in form Nos. I and II respectively which shall be kept at the place of work.
- 9.9.2 The contractor shall maintain both in English and local language a list approved by Commissioner for labour clearly stating the acts and commissions for which penalty or fine may be imposed on a workmen and display it in a good condition in conspicuous place on the work.

#### 9.10 SUBMISSION OF RETURNS:

The contractor shall submit periodical returns as may be specified from time to time.

#### 9.11 AMENDMENTS:

The Government of Karnataka may from time to time add to or amend the regulations and on may question as to the application interpretation on effect if these regulations the decision of the Commissioner of Labour or Deputy Commissioner for Labour to Govt. in that behalf shall be final.

**ANNEXURE II****Labour Clause 9.12**

Clause 12 A No labourers below the age of 15 years shall be employed on the work.

Clause 12 B Payments of wages of labourers.

The contractor shall pay not less than fair wage of labourers engaged by him on the work.

**EXPLANATION:**

- (a) The contractor shall notwithstanding the provision of any contract to the contrary cause to be paid wages to labourers indirectly engaged for the work including any labour engaged by his sub-contractors in connection with the same works if the labourers have been immediately employed by him.
- (b) In respect of all labours directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with Karnataka Public Works Department Contractors Labour Regulations from time to time, in regard to payment of wages. Wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage book, wage slips, publication of scale of wage and other terms of employment, inspection and submission of periodical returns and all other matter of a like nature.

The Project Engineer cum Estate officer or In-charge Engineer concerned shall have the right to deduct from the money due to the contractors any sum required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or her wages which are not justified by their terms of the contract or non-observance of the regulations.

- (c) For payment of minimum wages the Contractor is bound to follow the relevant orders of Govt. of Karnataka from time to time.
- (d) Vis-à-vis the Institute the contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors. The regulations aforesaid shall be deemed to be part of this contract, and any breach thereof shall be deemed to be a breach of this.

**Clause 12(c):** In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement the contractor shall at his own expense arrange for the safety provisions as per Karnataka P.W.D. safety code framed from time to time and shall at his own expense provide for all facilities in arrangements and provide necessary facilities as aforesaid he shall be liable to pay penalty of Rs. 50/- for each default and in addition the Project Engineer cum Estate officer in charge shall be at liberty to make arrangements and provide facilities as aforesaid, and recover the cost incurred in that behalf from the contractor.

**Clause 12(d):** The contractor shall submit by the 4<sup>th</sup> and 19<sup>th</sup> of every month to the Project Engineer of true statement showing in respect of the second half of the preceding month and the first half of the current month respectively (1) the name of labourers employed by him on the work (2) their working hours, (3) the wages paid to them, (4) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused to 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 the Institute a sum of not exceeding Rs. 50/- for each default or materially incorrect statement by deduction from any bill due to the contractor and amount levied as fine.

**Clause 12(e):** In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules framed by Institute from time to time for the protection of health and sanitary arrangements for workers employed by the Indian Institute of Science and its contractors.

**Clause 12(f):** Maternity benefit rules for female workers employed by contractor, leave and pay during leave shall be regulated as follows:

Leave (i) in case of delivery: Leave during maternity leave not exceeding 8 weeks up to and including the day of delivery and 4 weeks following that day.

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

#### 9.13 **Pay:**

- i) In case of delivery: Leave pay during maternity leave will be at the rate of women's average daily earning calculated on the total wages earned on the days when full time work was done during the period of three months immediately preceding the date on which she gives notice that she expects to be confined.
- ii) In case of miscarriages: Leave pay at the rate of average daily earnings calculated on the total wages earned on the day's full time works was due during a period of 3 months immediately preceding the date of miscarriage.
- iii) Conditions for the grant of maternity leave: No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than 6 months immediately preceding the date of delivery /miscarriage.

**Model rules for the protection of Health and Sanitary arrangements for workers employed by the Indian Institute of Science or its contractors.**

**Applications:** The rule shall apply to all building and construction work in charge of Indian Institute of Science

Definition (i): Work place means a place at which on an average fifty or more workers are employed in connection with construction work.

#### 9.14 **First Aid:**

- (a) At every place, there shall be maintained in readily accessible place first aid appliance including the adequate supply sterilized dressing and sterilized cotton wool. The appliances shall be kept in good order and in large work places they shall be placed under the charge of responsible person who shall be readily available during working hours.
- (b) At large work place where hospital facilities are not available within easy distance of the works first aid posts shall be established and be run by a trained compounder with one bed for every 250 employers.
- (c) Where large work places are situated in cities, town or in their suburbs and no beds are considered necessary due to proximity of city or town hospitals, suitable transport shall be provided to facilitate of urgent cases to these hospitals at the work places, some conveyance facilities such as a car should be kept readily available to take injured persons suddenly taken seriously ill, to the nearest hospital.

#### 9.15 **DRINKING WATER:**

- (a) In every work place there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- (b) Where drinking water is obtained from an intermittent public water supply each work place shall be provided with storage tank for drinking water to be stored.
- (c) Every drinking water supply storage tank shall be at distance not less than 50 ft. from any latrine, drain or other source of pollution. The tank shall be properly chlorinated before water is drawn from it for drinking. All such tanks shall be entirely closed with a trap door, which shall be dust and waterproof.
- (d) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleanings or inspection, which shall be at least once a month.

**9.16 SCALE OF ACCOMMODATION TO LATRINES (L) AND URINALS (U):**

There shall be provided within premises of every work place latrines and urinals in an accessible place, and the accommodation separately for each of them shall not be less than following scale:

	L + U
Where the No of persons does not exceed 50	– 3 + 3 Nos.
Where the No of persons exceeds 50 but does not exceed 100	– 3 + 3 Nos.
For every additional 100	- 3 + 3 Nos.

In particular cases the Project Engineer cum Estate officer shall have the powers to vary the scale wherever necessary.

**9.17 LATRINES AND URINALS FOR WOMEN:**

If women are employed separate latrines and urinals screened from those for men, and marked in the vernacular conscious letter “For women only” shall be provided on the scale in rule 9.17. Those for men shall be similarly marked for men only. A poster showing figures of men and women shall also be exhibited at the entrance of latrines for each sex. There shall be adequate supply of water closet for the urinals and latrines.

**9.18 LATRINES AND URINALS:**

Except in work provided with water flushed latrines connected with water borne sewerage all latrines shall be provided with receptacles on dry earth system which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary condition. The receptacles shall be tarred inside and out side at least once a year.

**9.19 CONTRUCTION OF LATRINES:**

The inside walls shall be constructed of masonry or some suitable heat resisting non-absorbent materials and shall be cement washing noted in a register maintained for this purpose and kept available for inspection. Latrines shall not be of a standard lower than bonded other system and should have thatched roofs.

**9.20 PROVISIONS OF SHELTERS DURING REST:**

At every work place there shall be provided free of cost two suitable sheds one for meals and other for rest separately for men and women for use of labour. The height of the shelter shall not be less than 11 ft. from the floor level to the lowest part of the roof. The shed should be roofed with at least thatch and mud flooring will be provided with dwarf wall around not less than 2.5 feet. Sheds shall be kept clean and space shall be on the basis of at least 5 square feet per head.

**9.21 CRECHES:**

At every place, at which fifty or more women are ordinarily employed there shall be provided two huts for the use of children under the age 6 years belonging to such women. One hut shall be used for infant games place and the other as their bedroom. The huts shall not be constructed of a lower standard than the following:

- (i) Thatched roofs
- (ii) Mud floor and walls
- (iii) Planks spread over the mud floor and covered with matting.

9.21.1 The huts shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean; there shall be two boys in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned. The use of the hut shall be restricted to children, their attendants and mother of the children.

- 9.21.2 Where the number of women workers is more than 35 but less than 50, the contractor shall provide at least one hut and one attendant to look after the children of women workers.
- 9.21.3 The crèche shall be properly maintained and necessary equipments like toys etc., shall be provided.
- 9.21.4 The size of the crèches shall vary according to the number of workers.
- 9.22 **CANTEENS:**
- A cooked food canteen on a moderate scale shall be provided for the benefit of workers wherever it is considered expedient.
- 9.23 The above rules shall be incorporated in the contract and in notices inviting tenders, and shall form an integral part of the contract.

## 10. CONDITIONS OF CONTRACT

### Clause 1. Security Deposit

- (a) **Clause -1(a)** The person/persons whose tender may be accepted (hereinafter called the contractor which expression shall unless the context otherwise requires, include his heirs, executors, administrators and assigns) shall pay Earnest Money Deposit indicated in Column (ii) of the table given below and shall permit Institute (a) to deduct FSD at the percentage mentioned in Column (iii) of the table given below of all moneys payable of work done under the Contract, at the time of making such payments to him/them and (b) to hold such deductions as further Security Deposit. The EMD + FSD will be limited to        % of the contract value.

Estimated cost of the work put to Tender	E.M.D. Percentage	F.S.D. Percentage
(i)	(ii)	(iii)
	1.5%	6.0%

Note : EMD + FSD to be limited to 7.5% of the contract value

E.M.D. -        Earnest Money Deposit  
F.S.D.    -        Further Security Deposit

### No Interest will be paid on EMD / Security deposit.

#### (b) Additional or Reduction in Security Deposit.

The EMD for the tendered work and additional amount of Security Deposit at the rates mentioned in **Sub-clause 1(a)** above should be, paid by the contractor. The Project Engineer cum Estate officer may allow if a portion of the work is withdrawn from the Contractor under the provisions of Clause 12(a) a proportionate reduction in the amount of security Deposit.

- (1) ***EMD paid along with the tender shall be refunded only after the completion of the defect liability period without any interest.***
- (2) ***1% labour cess towards workers Welfare Fund on the works expenditure will be recovered from RA bills for depositing the same to the welfare board as per Karnataka Govt. Order. Rates quoted should be inclusive of cess.***

- (c) However if the Contractor desires, agency may furnish a BG issued by the Public Sector Undertaking Bank / Scheduled commercial Bank / Nationalized Bank in favour of the Registrar, Indian Institute of Science, payable at Bangalore amounting to 7.50% of the total contract value valid up to completion of defect liability period in which case EMD deposited by them will be refunded and no recoveries towards security deposit will be effected in the running account bills.

#### (d) Dues to Institute, to be set off against Security Deposit.

All compensation or other sums of money payable by the Contractor to Institute under the terms of this contract may be realized or deducted from any Security Deposit payable to him or from any sums which may be due or may become due by Institute to the Contractor on any account whatsoever and in the event of his security deposit being reduced by reason of any such realization or deduction as aforesaid, the Contractor shall, within ten days thereafter, make good in cash any sum or sums which have been deducted from his security deposit or any part thereof. Otherwise the amount will be treated as outstanding due from the agency.

#### (e) Refund of Security Deposit (EMD & FSD):

i) EMD paid by the contractor at the time of tendering and FSD deducted from the R.A.bills at the prescribed rates shall be refunded to the contractor immediately after the virtual completion of the work against production of bank guarantee for an equal amount from any of the Public Sector Undertaking Bank/Scheduled commercial Bank/Nationalized Bank valid for a period as mentioned in clause (ii) below.

ii) The bank guarantee received as stipulated in (i) above, will be treated as performance guarantee and shall be returned to the contractor after the final bill is paid or after **twenty four months including monsoon period** from the date of virtual completion of the work during which period the work should be maintained by the contractor in good order, whichever is later. The validity of the bank guarantee shall be maintained for the above period.

- iii) In case of BG's furnished towards security deposit same shall be returned after completion of the defect liability period.

## **Clause 2. PENALTY FOR DELAY**

### **(a) Written Order to Commence Work**

After acceptance of the tender, the Project Engineer cum Estate officer shall issue a written order to the successful tenderer to commence the work. The Contractor shall enter upon or commence any portion of work only with the written authority and instructions of the Project Engineer cum Estate officer. Without such instructions the Contractor shall have no claim to demand for measurements of or payment for, work done by him.

### **(b) Programme of work**

The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor. It shall be reckoned from the date of handing over the site to the Contractor not less than 75 percent of work site area comprising a continuous block. The work shall throughout the stipulated period of the contract be proceeded with, all due diligence (time being deemed to be the essence of the contract on the part of the Contractor). To ensure good progress during the execution of the work, the contractor shall be bound (in all cases in which the time allowed for any work exceeds one month) to comply with the time schedule according to the programme of execution of the work as agreed upon and enclosed by the contractor during execution of agreement.

### **(c) Review of progress and responsibility for delay etc.,**

The Project Engineer cum Estate officer shall review the progress of all works with the contractor at least once every month. Such a review shall take into account the programme fixed for the previous week, obligations on the part of the Institute for issue of drawings etc, and also the obligations on the part of the Contractor. The review shall also examine the accumulated delays by the contractor if any and mitigation measures proposed by the contractor to overcome the delay.

#### **Apportioning of responsibility for delay between Contractor and Institute.**

In case the progress achieved falls short by more than 25 percent of the cumulative programme, the reasons for such shortfall shall be examined and a record made thereof apportioning the responsibilities for the delay between the contractor and the Institute. This record should be signed in full and dated both by the Project Engineer cum Estate officer and the Contractor. If the contractor refuses to sign the said record, approval of the reasons for delay may be submitted to CENTER FOR CAMPUS MANAGEMENT AND DEVELOPMENT ( CCMD) for approval and such approval is binding on the contractor.

#### **Shortfall in progress made up subsequently.**

To the extent the shortfall is assessed, as due to the delay on the part of the contractor, a notice shall be issued to him by the Project Engineer cum Estate officer to make up the shortfall. If the shortfall is not made up before the progress of the work is reviewed during the second month succeeding the month in which the shortfall was observed, the Contractor shall be liable to pay penalty as indicated in **Clause 2(d)** below.

#### **Grant of extension of time.**

If the delay is attributable to reasons beyond the control of the Contractor, requisite extension of time shall be granted by the Project Engineer cum Estate officer in accordance with **Clause 5** after obtaining the approval of his higher authorities, wherever necessary.

#### **Review of progress by Center for campus management and Development.**

The Center for campus management and Development shall review the progress periodically, preferably more number of times as required. These reviews are in addition to the monthly reviews required to be done by the Project Engineer cum Estate officer. The results of such review by the CENTER FOR CAMPUS MANAGEMENT AND DEVELOPMENT ( CCMD) shall, wherever necessary, be incorporated in the next review of the Project Engineer cum Estate officer.

If the Contractor stops the work for 45 days when no stoppage of work is shown on the current

Program and the stoppage has not been authorized by the Employer then The Employer may terminate the Contract at the risk and cost of the contractor.

**Settlement of dispute regarding shortfall in progress.**

In case of dispute between the Project Engineer cum Estate officer and Contractor regarding the responsibility for the shortfall in progress, the matter shall be referred to the Center for campus management and Development who shall thereupon give a decision within fifteen days from the date of receipt of reference. The decision of the Center for campus management and Development shall be final and binding on the contractor and the Project Engineer cum Estate officer.

**(d) Penalty for delay**

In respect of the shortfall in progress, assessed as due to the delay on the part of contractor as per **Clause 2(b)** and **2 (c)**, the contractor shall be liable to pay as penalty an amount equal to half percent of the contract value of the balance work assessed according to the programme, for every week that the due quantity of work remains incomplete; provided always that the total amount of penalty to be paid under the provisions of this clause subjected to a maximum of 10 percent of the contract value of the entire work as shown in the tender, provided further that in the event of the contractor making up the shortfall in progress within the stipulated or extended time of completion, the penalty so recovered may be refunded on an application in writing by the contractor.

**Note:** *If the Project Engineer cum Estate officer considers it necessary he shall be entitled to take action as indicated in **Clause 3 (d)** also.*

**d.1 Liquidated damages**

The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the Contract Data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

**(e) Adjustment of excess/over payments.**

Excess/over payments as soon as they are discovered should be adjusted in the next running account bill of the contractor and in case the final bill has already been paid, the excess/over payment made shall be recovered from the Security Deposit of the contractor together with interest at such percentages as Institute may decide from time to time, from the date of such excess or over payment to the date of recovery.

**ACTION WHEN WHOLE OF SECURITY DEPOSIT IS FORFEITED**

**Clause 3.** In any case in which under any clause or clauses of this contract the contractor shall have rendered himself liable to pay compensation and/or penalty amounting to the whole of his security deposit including the amount deducted in installment from his bills as Further Security Deposit, the Project Engineer cum Estate officer on behalf of the Director, IISc shall have power to adopt any of the following courses as he may deem best suited in the interest of Institute.

**(a) Forfeiture of Security Deposit**

Without prejudice to Institute's right to recover any loss from the Contractor under **sub-clauses (b) and (c) of Clause 3** of the Contract, to rescind the contract (of which rescission notice in writing to the contractor under the hand of the Project Engineer cum Estate officer shall be conclusive evidence). And in that case, the security



deposit of the contractor including whole or part of the lump sum deposited by him and also the amount deducted from his bills as Further Security Deposit, shall stand forfeited and be absolutely at the disposal of the Institute.

**(b) Debiting cost of labour and materials supplied.**

To employ labour paid by the Institute and to supply materials to carry out the work or any part of the work, debiting the contractor with the cost of the labour and the price of the materials (as to the correctness of which cost and price the certificate of the Project Engineer cum Estate officer shall be final and conclusive against the contractor) and crediting him with the value of the work done; in all respects in the same manner and at the same rates as if it had been carried out by the contractor under terms of this contract, and in that case the certificate of the Project Engineer cum Estate officer as to the value of the work done shall be final and conclusive against the contractor.

**(c) Recovery of extra cost on unexecuted work**

To measure up the work of the contractor and to take such part thereof as is remaining unexecuted out of his hands and to give it to another contractor to complete it in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (as to the amount of which excess expenses the certificate in writing of the Project Engineer cum Estate officer shall be final and conclusive) shall be borne and paid by the original contractor and shall be deducted from any money due to him by Institute Otherwise the amount will be treated as outstanding due from the agency.

**(d) Action against unsatisfactory progress**

If the contractor does not maintain the rate of progress as required under **Clause 2** and if the progress of any particular portion of work is unsatisfactory even after taking action under **Clause 2(c)** and **2(d)**, the Project Engineer cum Estate officer shall be entitled to take action under **Clause 3(b)** or **3(c)** at his discretion in order to maintain the rate of progress after giving the contractor 10 days notice in writing whereupon the contractor will have no claim for any loss sustained by him owing to such actions.

**(e) No compensation for loss sustained on advance action**

In the event of any of the above courses being adopted by the Project Engineer cum Estate officer, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased, or procured any materials, entered into any agreements or made any advances on account of, or with a view to the execution of the work or the performance of the contract. And in case the contract shall be rescinded under the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work thereof actually performed by him under his contract, unless and until the Project Engineer cum Estate officer shall have certified in writing the performance of such work and the amount payable in respect thereof, and he shall only be entitled to be paid the amount so certified.

**(f) Recovery of 1% of the contract value towards the laborers welfare fund created by the Government of Karnataka will be effected in the running account bills of the contractor.**

**Clause 4. CONTRACTOR TO REMAIN LIABLE TO PAY COMPENSATION IF ACTION IS NOT TAKEN UNDER CLAUSE-3.**

In any case in which any of the powers conferred upon the Project Engineer cum Estate officer by **Clause 3** thereof shall have become exercisable and the same shall not have been exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor for which under any clause hereof he is declared liable to pay compensation or penalty amounting to the whole of his security deposit and the liability of the contractor for past and future compensation or penalty shall remain unaffected.

**Power to take possession of or require removal of or sell contractor's properties.**

In the event of the Project Engineer cum Estate officer taking action under **sub-clause (a) or (c) of Clause 3**, he may, if he so desires, take possession of all or any tools, plant, materials and stores, in or upon works or the site

thereof or belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates; or in the case of contract rates not being applicable, at current market rates, to be certified by the Project Engineer cum Estate officer whose certificate thereof shall be final. In the alternative, the Project Engineer cum Estate officer may after giving notice in writing to the contractor or his clerk of the works, foreman or other authorised agent, require him to remove such tools, plant, materials or stores from the premises within a time to be specified in such notice; and in the event of the contractor, failing to comply with any such requisition, the Project Engineer cum Estate officer may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respect, and the certificate of the Project Engineer cum Estate officer as to the expense of any such removal; and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

#### **Clause 5. GRANT OF EXTENSION OF TIME**

- (a) If the contractor shall desire an extension of the time for completion of the work, he shall apply in writing to the Project Engineer cum Estate officer before the expiry of the period stipulated in the tender or before the expiry of 30 days from the date on which he was hindered as aforesaid or on which the cause for asking for extension occurred, whichever is earlier and the Project Engineer cum Estate officer or other competent authority may if in his opinion, there are reasonable grounds for granting an extension, grant such extension as he thinks necessary or proper. The decision of such competent authority in this matter shall be final.
- (b) The time limit for completion of the work shall be extended commensurate with its increase in cost occasioned by alterations or additions and the certificate of the Project Engineer cum Estate officer or other competent authority as to such proportion shall be conclusive.

#### **Clause 6. ISSUE OF FINAL CERTIFICATE – CONDITIONS REGARDING**

On completion of the work the contractor shall report in writing to the Project Engineer cum Estate officer the completion of the work. Then he shall be furnished with a certificate by the Project Engineer cum Estate officer of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall have been executed, all scaffolding, surplus materials and rubbish, and shall have cleaned thoroughly all wood work, doors, windows, wall, floor or other parts of any building, in or upon which the work has been executed, or of which he may have had possession for the purpose of executing the work, nor until the works shall have been measured by the Project Engineer cum Estate officer or other competent authority, or where the measurements have been taken by his Project Engineer until they have received the approval of the Project Engineer cum Estate officer or other competent authority, the said measurements being binding and conclusive against the contractor. If the contractor shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials and rubbish, and cleaning on or before the date fixed for the completion of the work the Project Engineer cum Estate officer or other competent authority may, at the expense of the contractor, remove such scaffolding, surplus materials and rubbish, and dispose of the same as he think fit and clean off such dirt etc., as aforesaid and contractor shall be liable to pay the amount of all expenses incurred but shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

#### **Note: CLOSURE OF CONTRACT PENDING COMPLETION OF MINOR ITEMS.**

In cases where it is not desirable to keep the building contract open for minor items, such as flooring in the bath rooms, etc., which can be carried out only after installation of sanitary work the main contract may be finalized after getting a supplementary agreement executed in the prescribed form by the same contractor for doing the residual work.

#### **Clause 7. Contractor to submit bills monthly in printed form**

- (a) A bill shall be submitted by the contractor on or before 15th of each month for all items of work executed in the previous month as required by IISc. The Running account bills will be paid within **three weeks** from the date of submission of the bill in complete acceptable form after duly checked and certified by concerned Engineer, under normal circumstances.

All bills shall be prepared in the prescribed printed and electronic form in PDF format in quadruplicate and handed over to the Project Engineer in charge of the work/ Project Engineer cum Estate officer's Office and acknowledgment obtained.

The charges to be made in the bills shall always be entered at the rates specified in the tender in full or in part as the case may be, in the case of any extra work ordered in pursuance of these conditions, and not mentioned or provided for in the tender, the charges in the bills shall be entered at the rates hereinafter provided for such work.

**(b) Scrutiny of Bills and measurement of work**

The details furnished by the Contractor in the bill will be completely scrutinized and the said work will be measured by the Project Engineer in the presence of the Contractor or his duly authorized agent. The countersignature of the contractor or the said agent in the measurement book shall be sufficient proof to the correctness of the measurements, along with the Test certificates to be produced with the bill, which shall be binding on the contractor in all respects.

**(c) One copy of the passed bill shall be given to the Contractor without any charge.**

**Clause 8. PAYMENT PROPORTIONATE TO WORK APPROVED AND PASSED.**

No payment shall be made for any work estimated to cost rupees five thousand or less until after the whole of the work shall have been completed and certificates of completion given. But in the case of works estimated to cost more than Rs. 5,000 the contractor shall on submitting the bill and after due verification by the Project Engineer as per **Clause 7(b)** entitled to necessary Payment proportionate to the part of the work then approved and passed by the Project Engineer cum Estate officer or other competent authority whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor i.e. part payment of submitted RA bills is admissible to contractor. Any such reduced payment amount is admissible for adjustment in the successive RA Bills or Final Bill.

### **Payment at reduced rates**

The rates for several items of works agreed to within shall be valid only when the items concerned are accepted as having been completed fully in accordance with the stipulated specifications. In cases where the items of work are not accepted as so completed, The Project Engineer cum Estate officer or other competent authority may make payment on account of such items at such reduced rates as he may consider reasonable in the preparation of final or on account bills.

### **Payment or intermediate certificates be regarded as advances:**

All such intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for work actually done and completed, and shall not preclude the Project Engineer cum Estate officer or other competent authority from requiring any bad, unsound imperfect or unskillful work to be removed or taken away and reconstructed or re-erected nor shall any such payment be considered as an admission for the due performance of the Contract or any part thereof in any respect or the accruing of any claim, nor shall it conclude determine or affect in any other way the powers of the Project Engineer cum Estate officer or other competent authority as to the final settlement and adjustment of the accounts, or otherwise or in any other way vary or affect the contract.

### **Submission of Final bill and its settlement**

The contractor shall submit the final bill within one month from the date of actual completion of the work in all respects. His claims shall be settled within five months from the date of submission of the bill in complete acceptable form after duly checked and certified by concerned Engineer, under normal circumstances.

### **Disputed items**

Note: The contractor shall submit a list of the disputed items within 30 days from the disallowance thereof and if he fails to do this, his claim shall be deemed to have been fully waived and absolutely extinguished.

## **Clause 9. Definition of Work :**

- (a) The expression 'Work' or 'Works' where used in these conditions, shall unless there be something in the subject or context repugnant to such construction, be construed to mean the work or works contracted to be executed under or in virtue of the contract, whether temporary or permanent and whether original, altered, substituted or additional.

- (b) **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 sound and substantial and workmanlike manner, and in strict accordance with the specifications both as regards materials and workmanship. The contractor shall also conform exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Project Engineer cum Estate officer or other competent authority and lodged in his office and to which the contractor shall be entitled to have access at such office, or on the site of the work for the purpose of inspection during office hours. The contractor shall also be responsible for the delivery of structure in sound conditions and the execution of the work strictly in accordance with the specifications of the work.

- (c) **Action where there is no specification**

In the case of any class of work for which there is no such specification, then in such a case of the work shall be carried out in all respects in accordance with the instructions and requirements of the Project Engineer cum Estate officer or other competent authority.

- (d) **Work as per Specifications and IS Codes.**

The detailed specification, which forms a part of contract, accompanies the tender document. In carrying out the various items of work as described in Schedule B of the tender documents and the additional, substituted, altered items of work these detailed specification shall be strictly adhered to, supplemented by relevant provisions of the Indian standard specifications, the code of practice; etc., The Indian standard specification, National Building

Code and the code of practice to be followed shall be the latest versions of those listed in the detailed technical specifications. Any class of work, not covered by the detailed technical specifications, shall be executed in accordance with the instructions and requirements of the Project Engineer cum Estate officer and the relevant provisions of the Indian standard specifications.

**Clause 10. Alteration in quantity of work, specifications and designs, Additional work, deletion of work**

- (i) The Project Engineer cum Estate officer shall have power to make any alternations in, omissions from additions to or substitutions for the original specification, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work. For that purpose or if for any other reason it shall in his opinion be desirable, he shall have power to order the Contractor to do and the contractor shall do any or all the following: -
  - (a) Increase or decrease the quantity of any work included in the contract.
  - (b) Omit any such work.
  - (c) Change the character or quality or kind of any such work,
  - (d) Change the levels, lines, positions and dimensions of any part of the work,
  - (e) Execute additional work of any kind necessary for the completion of the works and
  - (f) change in any specified sequence, methods or timing of construction of any part of the work.

**Contractor bound by Project Engineer cum Estate officer's instructions**

The Contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing signed by the Project Engineer cum Estate officer or other competent authority and such alteration shall not in any way vitiate or invalidate the contract.

**Standard Quantity Take-off (SQT)**

Contractor within **14 days** of Issue of LOI to submit the Project Manager & seek approval for the Standard quantity Take-off sheets for all the items mentioned in the Tender BOQ, after due referencing the Tender/ GFC drawings and the Technical Specification. Upon approval, the SQT shall remain the base document for initiating any change orders/ variation in accordance to Clause 31, tracking the daily project progress, and for the measurement sheets.

**Orders for variations to be in writing**

- (ii) No such variations shall be made by the Contractor without an order in writing of the Project Engineer cum Estate officer; provided that no order in writing shall be required for increase or decrease in the quantity of any work where such increase or decrease is the result of the quantities exceeding or being less than those stated in the 'Schedule B' provided also that if for any reason the Project Engineer cum Estate officer shall consider it desirable to give any such order verbally, the Contractor shall comply with such order without any confirmation in writing of such verbal order given by the Project Engineer cum Estate officer, whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of the clause; provided further that if the Contractor shall within seven days confirm in writing to the Project Engineer cum Estate officer and if such confirmation is not contradicted in writing within fourteen days by the Project Engineer cum Estate officer, it shall be deemed to be an order in writing by the Project Engineer cum Estate officer.
- (iii)
  - a) Any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on same conditions in all respects on which he agreed to do the main work and same rates as are specified in the tender for the main work. However, change in the Undertaking rates tendered and accepted shall be considered in respect of items under which the quantity of work performed exceeds tendered quantity by more than 25 percent and this actual change in rate will be restricted only to such excess quantity (i.e. beyond 125 percent of the tendered quantity).
- (b) **Rate for excess quantity beyond 125 percent of tendered quantity**

The Additional quantity which exceeds 125 percent of the tendered quantity shall be paid at the rates entered in or derived from Schedule of Rates prevalent at the time of executing additions and alterations plus or minus

the overall percentage of the original tendered rates over the current Schedule of Rates (KPWD) of the year in which the tender is accepted (as per the comparative Statement prepared at the time of acceptance of the tender).

**(c) Rates for additional, substituted, altered items of work**

If the additional, substituted or altered work includes any class of work for which no rate is specified in the contract, then such work shall be carried out at the rates specified for or derived from similar item of work in the agreement. In the absence of similar items in agreement, rate shall be as specified for or derived from similar items in the schedule of rates of KPWD prevalent at the time of execution of such additional substituted or altered items of works, plus or minus the overall percentage of original tendered rates over the current schedule of rates of (KPWD) the year in which tender is accepted as mentioned in sub clause (b) above. With regard to the question whether the additional, substituted or altered item/items of work/works is / are similar or not, to that/those in the agreement / in the Schedule of Rates of KPWD and the decision of the Center for campus management and Development shall be final and binding on the contractor.

**(D) Determination of rates for items not found in Estimate or Schedule of Rates**

If the rates for additional, substituted or altered work cannot be determined in the manner specified in sub clauses (b) and (c) above, then the contractor shall within 7 days of the date of receipt by him of the order to carry out the work, inform the Project Engineer cum Estate officer of the rates which it is his intention to charge for such class or work, supported by analysis of the rate or rates claimed. Thereupon the Project Engineer cum Estate officer shall determine the rate or rates on the basis of observed data and failing this, on the basis of prevailing market rates. Under no circumstances the contractor shall suspend the work on the plea of non-settlement of rates for items falling under this clause. In the event of any dispute regarding the rates for such items the decision of Project Engineer cum Estate Officer, Center for campus management and Development shall be final.

Working out the data rates for non SR/ non tendered items shall be based on the procedures laid down in the standard rate analysis format of KPWD Bangalore circle Bangalore. The data rates shall be approved by the Project Engineer cum Estate Officer, Center for campus management and Development and shall be binding on the contractor.

**Clause 11. TIME LIMITS UNFORSEEN CLAIMS**

Under no circumstances whatever shall the contractor be entitled to any compensation from Institute on any account unless the contractor shall have submitted claim in writing to the Project Engineer cum Estate officer or other competent authority within 30 days of the cause of such claim occurring.

**Clause 12. NO CLAIM TO ANY PAYMENT OR COMPENSATION FOR DELETION OF WHOLE OR PART OF WORK**

- (a)** If at any time after the execution of the contract documents, the Project Engineer cum Estate officer or other competent authority shall, for any reason whatsoever, require the whole or any part of the work as specified in the tender, to be stopped for any period or require the whole or part of the work (i) not to be carried out at all or (ii) not to be carried out by the tendered contractor, he shall give notice in writing of the fact to the contractor who will thereupon suspend or stop the work totally or partially as the case may be. In any such case, except as provided hereunder, the contractor shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not so derive in consequence of the full amount of the work not having been carried out, or on account of any loss that he may be put on account of materials purchased or agreed to be purchased, or for unemployment of labour recruited by him. He shall not also have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions, which may involve any curtailment of the work, as originally contemplated.

**(b) Payment for materials already purchased or ordered by contractor.**

Where, however, materials have already been purchased or agreed to be purchased by the contractor before receipt by him the said notice the contractor shall be paid for such materials, at the rates determined by the

Project Engineer cum Estate officer or other competent authority provided they are not in excess of requirements and are of approved quality, and/or shall be compensated for the loss, if any, that he may be put to, in respect of materials agreed to be purchased by him, the amount of such compensation to be determined by the Project Engineer cum Estate officer or other competent authority whose decision shall be final.

**(c) Labour charges during stoppage of work**

If the contractor suffers any loss on account of his having to pay labour charges during the period during which the stoppage of work has been ordered under this clause, the contractor shall on application, be entitled to such compensation on account of labour charges as the Project Engineer cum Estate officer or other competent authority, whose decision shall be final, may consider reasonable. Provided that the contractor shall not be entitled to any compensation on account of labour charges if in the opinion of the Project Engineer cum Estate officer or other competent authority, the labour could have been employed in the same locality by the contractor for the whole or part of the period during which the stoppage of the work has been ordered as aforesaid.

**(d) Time limit for stoppage of work**

The period of stoppage ordered by the Project Engineer cum Estate officer or other competent authority should not ordinarily exceed six months. Thereafter the portion of works stopped may be treated as deleted from this agreement if a notice in writing to that effect is given to the Project Engineer cum Estate officer or other competent authority by the contractor within seven days after the expiry of the above period.

**Execution of work deleted**

The portion of work thus deleted may be got executed from the same contractor on supplemental agreement on mutually agreed rates, which shall not exceed current Schedule of Rates plus or minus tender percentage,

**Clause 13. ACTION AND PENALTY IN CASE OF BAD WORK**

If at any time before the security deposit is refunded to the contractor, it shall appear to the Project Engineer cum Estate officer or other competent authority that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of inferior quality, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for, or are otherwise not in accordance with the contract, it shall be lawful for the Project Engineer cum Estate officer or other competent authority to intimate this fact in writing to the contractor and then notwithstanding the fact that the work, materials or articles complained of may have been paid for, the contractor shall be bound forthwith to rectify, or remove and reconstruct the work so specified on whole or in part as the case may require, or if, so required shall remove the materials or articles at his own charge and cost and in the event of his failing to do so within a period to be specified by the Project Engineer cum Estate officer or the competent authority in the written intimation aforesaid, the contractor shall be liable to pay a penalty not exceeding one percent on the amount of the estimate for every day not exceeding ten days during which the failure, so continues and in the case of any such failure the Project Engineer cum Estate officer or other competent authority may rectify or remove, and re-execute the work or remove and replace the materials or articles complained of, as the case may be at the risk and expense in all respects of the contractor should the Project Engineer cum Estate officer or other competent authority for any valid reasons consider that any such inferior work or materials as described above is to be accepted or made use of, it shall be within his discretion to accept the same at such reduced rates he may fix thereof.

**Clause 14. WORK TO BE OPEN TO INSPECTION - CONTRACTOR OR RESPONSIBLE AGENT TO BE PRESENT**

- (a)** All works under or in course of execution or executed in pursuance of the contract shall at all time be open to the inspection and supervision of the Project Engineer cum Estate officer or other competent authority and his Engineer-in-charge, and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Project Engineer cum Estate officer or other competent authority Project Engineer to visit the work shall have 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 the purpose.

Orders given to the contractor duly authorized agent shall be considered to have the same force and effect as if they had been given to the contractor himself.

**(b) Employment of Minimum technical staff**

The Contractor shall employ the following technical staff during execution of this work:

- (i)** One qualified Graduate Engineer & One qualified Diploma Engineer, when the cost of the work to be executed up to 1 Crore,
- (ii)** Two qualified Graduate Engineer & Three qualified Diploma Engineer, when the cost of the work to be executed from 1 Crore to 10 crores;

Three qualified Graduate Engineer & Six qualified Diploma Engineer, when the cost of the work to be executed above 10 crores;

- (iii)** In addition to (i) and (ii) above, the contractor shall employ different types of such technical personnel as may be required and sufficient for execution of work and directed by the Project Engineer cum Estate officer to ensure efficient execution of work.

The technical staff so employed, should be available at site whenever required by Engineer in-charge to take instructions.

- (c)** If the contractor fails to employ the technical staff as aforesaid, he shall be liable to pay a sum of Rs. 25000 (Rupees Twenty thousand only) for each month of default in the case of Graduate Engineers and Rs. 15000 (Rupees Ten thousand only) for each month of default in case of Diploma Holders.
- (d)** If the Contractor himself possesses the required qualification and is available at the site for receiving instructions from the Project Engineer cum Estate officer and other competent authority vide **sub-clause (a)** above it will not be necessary for the technical staff to be available at site for receiving instructions.

**Clause 15. NOTICE TO BE GIVEN BEFORE WORK IS COVERED UP**

The contractor shall give not less than five days' notice in writing to the Project Engineer cum Estate officer or his Project Engineer in charge of the work before covering up or otherwise placing beyond the reach of the measurement any work in order that the same may be measured; and correct dimensions thereof taken before the same is so covered up or placed beyond the reach of measurement, and shall not cover up or place beyond the reach of measurement, and work without the consent in writing of the Project Engineer cum Estate officer or other competent authority or his Project Engineer in charge of work; and if any work shall be covered up or placed beyond the reach of measurement, without such notice having been given or consent obtained, the same shall be uncovered at the contractor's expense, and in default thereof no payment or allowance shall be made for such work or for the materials with which the same was executed.

**Clause 16. CONTRACTOR LIABLE FOR DAMAGE DONE, AND FOR IMPERFECTIONS FOR TWELVE MONTHS AFTER CERTIFICATE OF COMPLETION**

If the Contractor or his workmen or servants shall break, deface, injure or destroy any part of a building in which they may be working, or any building, road fence, enclosure or grassland or cultivated ground contiguous to the premises on which the work or any part thereof is being executed, or if any damage shall be done to the work, while it is in progress from any cause whatever or if any imperfections become apparent in it within Twelve months of the grant of a certificate of completion, final or otherwise, by the Project Engineer cum Estate officer or other competent authority the contractor shall make good the same at his own expenses, or in default the Project Engineer cum Estate officer or other competent authority may cause the same to be made good by other workmen, and deduct the expenses (of which the certificate of the Project Engineer cum Estate officer or other competent authority shall be final) from any sums that may be due or may thereafter become due to the contractor, or from his Security Deposit or the proceeds of sale thereof, or of a sufficient portion thereof.



The Defects liability period shall be extended for as long as defects remain to be corrected. Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Institute.

**Clause 17. CONTRACTOR TO SUPPLY PLANT, LADDERS, SCAFFOLDINGS, ETC., AND IS LIABLE FOR DAMAGES ARISING FROM NON-PROVISION OF LIGHT, FENCING ETC**

The contractor shall supply at his own cost all materials, plant, tools, appliance, implements, ladders, scaffolding, and temporary works required for the proper execution of the work whether in the original, altered or substituted form and whether included in the specification, or other documents forming part of the contract or referred to in these conditions or not, and which may be necessary for the purpose of satisfying or complying with the requirements of the Project Engineer cum Estate officer or other competent authority 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 in the measurement or examination at any time and from time to time of the work or the materials. Failing this, the same may be provided by the Project Engineer cum Estate officer or other competent authority at the expense of the contractor and expense may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. The contractor shall provide necessary fencing and lights required to protect the public from accident, and shall also be bound to bear the expense of defense of every suit, action or other legal proceedings, that maybe brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any suit, action or proceedings to any person, or which may with the consent of the contractor be paid for compromising any claim by any such person.

**Clause 18. Measures for prevention of fire**

The contractor shall not set fire to any standing jungle, trees, brushwood or grass without a written permit from the Project Engineer cum Estate officer. When such permission is given, and also in all cases when destroying cut or dug up trees, brushwood grass, etc., by fire the contractor shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property.

**Clause 19. Liability of contractor for any damages done in or outside work Area.**

Compensation for all damages done by contractor or his men whether in or beyond the limits of Institute property including any damage caused by spreading of fire mentioned in Clause 18 shall be estimated by the Project Engineer cum Estate officer and the estimate of the Project Engineer cum Estate officer, subject to the decision of the Center for campus mangement and Development on appeal shall be final and the contractor shall be bound to pay the amount of the assessed compensation on demand failing which the same will be recovered from the contractor as the damages in the manner prescribed in clause 1(c) or deducted by the Project Engineer cum Estate officer or other competent authority from any sums that may be due or become due from Institute to the contractor under this contract or otherwise.

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

**Clause 20. Work on Notified Holiday**

No work shall be done on any notified holiday without the sanction in writing of the Project Engineer cum Estate officer or other competent authority

**Clause 21. WORK NOT TO BE SUBLET**

- (a) The contract shall not be assigned or sublet by the contractor,. However, any specific portion of the work which is of a specialized nature and normally not executable by a general contractor could be got done by the

specialized agencies which are executing such works, after obtaining the specific approval of the Project Engineer cum Estate officer in writing in each case. Such consent to sublet the work, if given, shall not relieve the contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults and neglects of any sub-contractor or his agents, servants or workmate as fully as if they were the acts, defaults or neglects of the contractor, his agents, servants or workmen.

**Consequences of subletting work without approval, becoming insolvent, bribing etc., by contractor and action against the contractor.**

If the contractor shall assign or sublet his contract or any portion thereof without the specific approval of the Project Engineer cum Estate officer or attempts to do so or become insolvent or commence any proceedings to get himself adjudicated as insolvent or make any composition with his creditors or attempts so to do or if any bribe, gratuity, or indirectly be given, promised or offered by the contractor or any of his servants or agents to any officer or person in the employ of Institute in any way relating to his office or employment or if any such officer or person in the employment or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Project Engineer cum Estate officer or other competent authority may thereupon by notice in writing rescind the contract and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of Institute and the same consequences shall ensure as if the contract had been rescinded under Clause 3 here of and in addition, the contractor shall not be entitled to recover or be paid for any work actually performed under contract.

**(b) Recovery of excess payments based on excess measurements and action against contractor.**

Whenever it is noticed that excess payments have been made to the contractor based on excess measurements recorded by the Project Engineer in the measurement book and countersigned by the contractor or his duly authorized agent, action shall be taken to recover the excess payments together with interest immediately. Action may also be taken to remove the name of the contractor from the approved list of contractors and also to black-list him.

**Change in classification of excavations accepted not permitted.**

Once the measurements mentioning the classification of the excavations are recorded in the measurement book and the same is signed by the contractor or his authorized agent in token of acceptance, no request for reclassification by the contractors shall be entrained.

**(c) Criminal proceedings against IISc Officer and Contractor for the lapses.**

Institute also reserve the right to initiate criminal proceedings against the concerned Institute Officers who are directly responsible for the lapse and the contractors who have colluded with the officers of the Institute in the lapse and fraudulently received amounts not due to them legitimately.

**Clause 22. SUM PAYABLE BY WAY OF COMPENSATION TO BE CONSIDERED AS REASONABLE COMPENSATION WITHOUT REFERENCE TO ACTUAL LOSS.**

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

**Clause 23. SETTLEMENT OF DISPUTES -TIME LIMIT FOR DECISION**

- (a)** If any dispute or difference of any kind whatsoever were to arise between the Project Engineer cum Estate officer and the contractor regarding the following matters namely,
- (i)** The meaning of the specification's designs, drawing and instructions herein before mentioned,
  - (ii)** The quality of workmanship or materials used on the work and
  - (iii)** Any other question, claim right, matter, thing whatsoever, in any way arising out of or relating to the contract, designs, drawings, specification, estimates, instructions, or orders, or those conditions, failure to execute the same whether arising during the progress of the work, or after the completion, termination or

abandonment thereof, the dispute shall, in the first place, be referred to the Center for campus management and Development who have jurisdiction over the work specified in the contract. The Center for campus management and Development shall within a period of fifteen days from the date of being requested by the Contractor to do so give written notice of its decision to the Contractor.

If the decision of the Center for campus management and Development is not acceptable to the contractor he may approach the **Director, IISc within** a period of 15 days for settlement.

**(b) Director's decision final.**

Subject to other form of settlement hereafter provided, the Director's decision in respect of every dispute or difference so referred shall be final binding upon the contractor. The said decision shall forthwith be given effect to and contractor shall proceed with the execution of the work with all due diligence.

**(c) Remedy when Director's decision is not acceptable to contractor**

In case the decision of the Director is not acceptable to the contractor, he may approach the Law Court at Bangalore for settlement of dispute after giving due written notice in this regard to the Director within a period of ninety days from the date of receipt of the written notice of the decision of the Director. Further, the Bangalore courts alone shall have the exclusive jurisdiction.

**(d) Time limit for notice to approach Court of law by contractor**

If the Director has given written notice of his decision to the contractor and no written notice to approach the law court has been communicated to him by the contractor within a period of ninety days from receipt of such notice, the said decision of Director shall be final and binding upon the contractor.

**(e) Time limit for notice to approach law court by contractor when decision is not given by Director, IISc as at (b).**

If the Director fails to give notice of his decision within a period of ninety days from the receipt of the contractor's request in writing for settlement of any dispute or difference as aforesaid, the Contractor may within ninety days after the expiry of the first named period of ninety days approach the Law Courts at Bangalore giving due notice to the Director.

**(f) Contractor to execute and complete work pending settlement of dispute.**

Whether the claim is referred to the Director or to the Law Courts, as the case may be, the contractor shall proceed to execute and complete the works with all due diligence pending settlement of the said dispute or differences.

**(g) Obligations of the Project Engineer cum Estate officer and contractor shall remain unsettled during considerations of dispute.**

The reference of any dispute or difference to the Director or the Law Court may proceed notwithstanding that the works shall then be or be alleged to be complete, provided always that the obligations of the Project Engineer cum Estate officer and the contractor shall not be altered by reason of the said dispute or difference being referred to the Director or the Law Court during the progress of the works.

**Clause 24. CONTRACTOR TO PAY COMPENSATION UNDER WORKMEN'S COMPENSATION ACT.**

**(a) The contractor shall be responsible for and shall pay any compensation to his own workmen payable under the relevant Workmen's Compensation Act for injuries caused to the workmen. If Institute pays such compensation on behalf of the contractor it shall be recoverable by Institute from the contractor under as per relevant clauses.**

**(b) Contractor to pay expenses of providing medical aid to workmen.**

The contractor shall be responsible for and shall pay the expenses of providing medical aid to any workman who may suffer a bodily injury as a result of an accident. If Institute incurs such expenses, the same shall be

recoverable from the contractor forthwith and be deducted without prejudice to any other remedy of Institute, from any amount due or that may become due to the contractor.

**Clause 25. CONTRACTOR TO PROVIDE PERSONAL SAFETY EQUIPMENT FIRST AID APPARATUS, TREATMENT etc.**

The contractor shall provide all necessary personal safety equipment and first aid apparatus for the use of the persons employed on the site and shall maintain the same in good condition suitable for immediate use, at any time and shall comply with the following regulations in connection therewith: -

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

**Clause 26. Minimum age of persons employed by contractor**

**(a): No contractor shall employ**

- (i) Any person who is under age of 15 years.
- (ii) Who does not produce a valid certificate of vaccination against epidemic diseases in respect of himself/ herself as well as all the members of his/her family.
- (b) The contractor shall provide potable water facilities to the workers. Similar amenities shall be provided to the workers engaged on large works in urban area.
- (c) Removal of persons not satisfying conditions (a) (i) & (ii)

The Project Engineer cum Estate officer or other authority is authorized to direct the removal or to remove through - his own agency, from the work any person referred to in sub-clauses (a) above not satisfying these conditions and no responsibility shall be accepted by the Institute for any delay caused in the completion of the work by such directions for removal.

**(d) Payment of fair and reasonable wages by contractor.**

The contractor shall pay fair and reasonable wages, which shall not be less than the minimum wages fixed by Govt. of Karnataka from time to time to the workmen employed by him in the contract undertaken by him. In the event of any dispute arising between the contractor, and his workmen on the ground that the wages paid are not fair and reasonable the dispute shall be referred without delay to the Project Engineer cum Estate officer or other competent authority, who shall decide the same. The decision shall not in any way affect the conditions in the contract regarding the payment to be made by Institute at the agreed tender rates.

**Clause 27. CONTRACTOR NOT ENTITLED TO ANY CLAIM OR COMPENSATION FOR DELAY IN EXECUTION OF WORK IN BORROW PITS.**

The contractor shall not be entitled to claim compensation if there is any delay in the execution of the work on account of water standing in borrow pits and Compartments. The rates are inclusive for hard or cracked soil, excavation in mud, sub-soil water or water standing in borrow pits and no claim for extra rate shall be entertained, unless otherwise specified.

**Clause 28. METHOD OF PAYMENT OF BILLS**

Payment to contractors shall be made by cheques drawn by the Institute

**Clause 29. SET OFF AGAINST ANY CLAIM OF INSTITUTE**

Any sum of money due and payable to the contractor (including the security deposit refundable to him) under this contract may be appropriated by the Institute and set off against any claim of Institute in respect of a payment of a sum of money arising out of or under any other contract made by the contract with the Institute.

**Clause 30. RATES INCLUSIVE OF SALES TAX AND LABOUR CESS AND ROYALTY**

- (a) The rates to be quoted by the contractor shall be inclusive of all taxes like GST , Labour cess, Royalty etc., No extra payment on this account will be made to the contractor. Any statutory levies imposed by the central Government/ state Government/ local body from time to time are to the contractors account only.
- (b) When there is a change in existing taxes from time to time i.e. upward or downward is admissible accordingly
- (c) All quarry fees, octroi dues levied by the state or any local body or authority and ground rent, if any, charged by the Project Engineer cum Estate officer for stacking materials should be paid by the contractor.

**Clause 31. IMPORTANCE OF SAFETY**

In addition to Contractor's Contractual Obligations on Safety as per the relevant clauses stated, The Contractor shall comply with all safety standards to the satisfaction of the Employer's Representative.

In respect of all labour, directly or indirectly employed on the project for the performance and execution of the Contractor's Work under the Contract, the Contractor shall at its own expense arrange for all the safety provisions as listed in (i) Safety codes of C.P.W.D. and Bureau of Indian Standards, (ii) The Electricity Act, (iii) The Mines Act, and Regulations, Rules and Orders made there under and such other acts as applicable. Precautions as stated in the safety clause are the minimum necessary and shall not preclude the Contractor taking additional safety precautions as may be warranted for the particular type of work or situations. Also mere observance of these precautions shall not absolve the Contractor of his liability in case of loss or damage to property or injury to any person including but not limited to the Contractor's labour, the Employer's, Architect's, Employer's Representative's and Project Manager's representatives or any member of the public or resulting in the death of any of these.

The Contractor shall institute and implement to the satisfaction of the Project Manager a construction safety programme, including:

- Preparing a Site-specific written safety programme consistent with the EHS Plan, Indian law and best practices. As a minimum, the programme shall require applicable safety equipment for all workers, use of barriers and barricades around potentially dangerous areas, protection of workers working under elevated conditions, accident reporting, first aid provisions etc.
- Weekly safety reviews and 'risk assessments' shall be carried out in conjunction with the Project Manager and the Employer in order to identify potential safety hazards and to mitigate against them.
- Attending weekly or as scheduled safety meetings at site conducted by the site safety representative of project manager
- The Contractor will be required to provide all personnel entering the Site an Identity and safety rules card and verbal explanation of the safety programme.
- Requiring all Sub-Contractors and other workers under the responsibility of the Contractor (including the Vendors or later phases of the construction of the Project) to adhere to the written safety programme as per approved format.

Experienced safety officers with adequate number of supporting personnel shall be appointed by the Contractor for full time on the site during the Contract period.

**NON-COMPLIANCE OF REGULATIONS**

If the Project Manager or the Employer's Representative notifies the Contractor of non- compliance with the foregoing regulations, the Contractor shall immediately, if so directed, or in any event not more than eighteen (18) hours after receipt of such notice, make all reasonable efforts to correct such non-compliance. If the Contractor fails to do so, the Employer may suspend all or any part of the Work. When the Contractor has undertaken satisfactory corrective action, Employer shall lift the suspension of the Work. The Contractor shall not claim any extension of time to complete the Work or additional fees due to any such work

suspension.

The Client reserves the right to levy penalty if the safety norms such as not wearing helmets, safety gloves/belts/shoes/jackets. etc., even after a written notice by the enforcing authority, a penalty of Rs. 10,000/- per day per event or till the safety norms are adhered to in addition to stopping of work till the safety norms are adhered

### **Clause 32 Refund of Security Deposit (EMD & FSD):**

The Security Deposit lodged/paid by a Contractor shall be refunded to him after the final bill is paid or after the successful completion of defect liability period, during which period the work should be maintained by the Contractor in good order, whichever is later.

### **Clause 33. PENALTY FOR DELAY**

#### **(a) Written Order to Commence Work**

After acceptance of the tender, The Project Engineer cum Estate Officer, CCMD shall issue a written order to the successful tenderer to commence the work. The Contractor shall enter upon or commence any portion of work only with the written authority and instructions of The Project Engineer cum Estate Officer, CCMD. Without such instructions the Contractor shall have no claim to demand for measurements of or payment for, work done by him.

#### **(b) Programme of work**

The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor. It shall be reckoned from the date of handing over the site to the Contractor not less than 75 percent of work site area comprising a continuous block. The work shall throughout the stipulated period of the contract be proceeded with, all due diligence (time being deemed to be the essence of the contract on the part of the Contractor). To ensure good progress during the execution of the work, the contractor shall be bound (in all cases in which the time allowed for any work exceeds one month) to comply with the time schedule according to the programme of execution of the work as agreed upon and enclosed to the agreement.

#### **(c) Review of progress and responsibility for delay etc.,**

The Project Engineer cum Estate Officer, CCMD shall review the progress of all works with the contractor during the first fortnight of every month. Such a review shall take into account the programme fixed for the previous month, obligations on the part of the Contractor.

#### **(d) Apportioning of responsibility for delay between Contractor and Institute.**

In case the progress achieved falls short by more than 25 percent of the cumulative programme, the reasons for such shortfall shall be examined and a record made thereof apportioning the responsibilities for the delay between the contractor and the Institute. This record should be signed in full and dated both by The Project Engineer cum Estate Officer, CCMD and the Contractor.

### **Clause 34 BAR CHART / CPM CHART:**

BAR chart /CPM chart shall be produced during agreement by the contractor. According to the bar chart work is to be executed otherwise penalty will be levied for the delay of work

## REFERENCES OF CODE BOOK

<b><u>I.S SPECIFICATIONS</u></b>	
A general list of IS Specifications applicable to this contract is appended here with	
IS CODE NO	
SP 7-1970	National Building Code
1885	Symbols
4648	Guide for electrical layouts
5578	Marketing of insulated conductors
5216	Guide for safety in installations
374	Ceiling fans
5077	Decorative light fitting
1913	Safety requirement of fittings
1536 & 6616	Ballasts
3323	Bi-pin lamp holders
2215	Starters for fittings
2418	Flourescent lamps
1569	Discharge lamps
3324	Holders
5513	Boxes for enclosures for Ele Accessories
Sp-7-2675	Fuse distribution boards
371	Ceiling roses
2667 & 3387	Metal conduits – fittings and accessories
1653	Rigid metal conduits
3854	Switches for lighting circuit control
1293	Three pin plugs
2351	Danger Board
3106	Instalation and selection of fuses
3043	Earthing
2147	Degree of protection by switch and control gear
4237	Requirement for switch and control gear
40437	Heavy duty air break switch and Sf units
2208	HRG fuses
375	Switch gear bus bars
2607	Air break isolators
1951	PVC sleeveings
1255	Code of practice for laying cables.
1694	PVC insulated cables.
1554	PVC cables.
3961	Current rating of cables.

**LIST OF APPROVED MAKES FOR CIVIL WORKS**

	Item	Make
1	WINDOWS	UPVC, RG, Fenesta
2	ALUMINIUM	JINDAL/INDAL/HINDAL CO
3	STEEL	TATA/ SAIL
4	DOORS	SAL WOOD DOOR WITH FLUSH SHUTTER, GRP LAMINATED DOORS
5	GLAZING	JOHNSON, KAJARIA, NAVEEN, REGENT
6	GLAZED TILES	JOHNSON, KAJARIA, NAVEEN, REGENT
7	CERAMIC TILES	JOHNSON, KAJARIA, NAVEEN, REGENT
8	PAINTS AND DISTEMPER	ASIAN BRAND, BERGER
9	SYNTHETIC ENAMEL	ASIAN BRAND, BERGER
10	WATER PROOFING COMPOUND	FOSROC, DR.FIXIT
11	VITRIFIED FLOORING	JOHNSON, KAJARIA, REGENT
IF THE ABOVE BRAND IS NOT AVAILABLE THE EQUIVALENT MATERIAL TO BE APPROVED BY PROJECT ENGINEER-CUM-ESTATE OFFICER BEFORE FIXING		
ALL MATERIAL SHALL HAVE TO BE GOT APPROVED FROM THE PROJECT ENGINEER CUM ESTATE OFFICER BEFORE BEING PROCURED.		



## 10.0 ACCEPTED MAKE OF MATERIALS FOR WATER SUPPLY & SANITARY WORKS

CPVC PIPES	ASTRAL / ASHIRVAD /PRINCE
G.I.Pipes and G.I.Fittings	TATA /Jindal
Ball & Butterfly Valves, NRV, Foot Valve, PRV	AUDCO / NVR/ INTERVALVE
'Y' Strainer	AUDCO/ ZOLOTO/ LEADER/I TAP
HDPE pipe	GEBRIT /equivalent
U PVC pipes and Fittings	ASTRAL / ASHIRVAD/PRINCE /SUPREME
PVC external pipe	ASTRAL / SUPREME/ASHIRVAD
Pre cast Frame & cover	SOUTHERN CONCRETE INDUSTRIES
CI frame and cover	NECO
Insulation	VIDOFLEX / THERMAFLEX
Pumps	Grundfos/WILO/DP/KSB
GRP tanks	Binani / Devi Polymers
Level controller	Sridhan International / SRI VINAYAK
Water Meters	DESHMESH / CAPATAN / KENT
CI pipes	Neco / ELECTROSTEEL
Solar panel	EMVEE/Solariser/Equivalent
Heat Pumps	Emmerson/Tipco/AO smith/Unidyne
Oil and Grease trap	ACO/KESSEL

All material shall have to be got approved from the Project Engineer-cum-Estate Officer before being procured

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**FIRE ALARM WITH P.A. SYSTEM**

1.	FIRE ALARM CONTROL PANEL	:	EDWARDS / NOTIFIER / HONEYWELL
2.	MANUAL CALL POINTS	:	EDWARDS / NOTIFIER / HONEYWELL
3.	ELECTRONIC HOOTERS	:	EDWARDS / NOTIFIER / HONEYWELL
4.	MONITOR MODULAE	:	EDWARDS / NOTIFIER / HONEYWELL
5.	FAULT ISOLATOR MODULAE	:	EDWARDS / NOTIFIER / HONEYWELL
6.	CONTROL MODULAE	:	EDWARDS / NOTIFIER / HONEYWELL
7.	CONTROL REALY MODULAE	:	EDWARDS / NOTIFIER / HONEYWELL
8.	BATTERY	:	HITACHI / RESTOLITE / JOHNSON
5.	COPPER CONDUCTOR CONTROL CABLE / WIRES	:	POLYCAB / VARSHA / FINOLEX
6.	COMMUNICATION WIRES	:	POLYCAB / VARSHA / SHAKTICAB/
7.	M S CONDUITS	:	BHARATH / GB / PRINCE
8.	PVC CONDUITS	:	VIP / PRECISION / NELCO
9.	P.A. SPEAKERS	:	AHUJA / AGNI SURAKSHA
10.	P.A. AMPLIFIERS	:	PHILIPS / AHUJA / BOSCH
11.	P.A.CONSOLE	:	ROYAL ELECTRONICS/ RAVEL/EQUIL.

<b><u>List of approved makes – Plumbing and sanitary Works</u></b>		
1	VITREOUS CHINA SANITARY WARE	PARRY WARE / TOTO / JAGAOR
2	C.P FITTINGS	JAQUAR CONTINENTAL
3	PVC PIPES (SWR QUALITY)	ORIPLAST / SUPREME / ASTRAL
4	G.I FITTINGS	R BRAND
5	G.I PIPES	TATA B CLASS A GRADE
6	BALL VALVE (15MM TO 150MM DIA)	ZOLOTO/AM
7	GUN METAL GATE VALVE	ZOLOTO/LEADER
8	STONE WARE PIPES AND GULLY	NECO/TSL/ANDHRA
9	MAN HOLE COVERS	NECO
10	EWG SEAT COVER TO LID	COMMANDER/PRINCE
11	FLOAT GLASS MERCURY COATED	MODI/KONICA
12	PVC CONNECTION PIPE	KOHINOOR
13	PVC SWR PIPE	SUPREME
14	FLUSHING CISTREN	SLIMLINE
15	CP BOTTLE TRAP	JAQUAR
16	MIRROR	ATUL/MODIGUARD
If the above brand not available the Equivalent Material to be approved by the Project Engineer-cum-Estate officer before fixing		
All materials shall have to be got approved from the Project Engineer-cum-Estate Officer before procured.		

<b>List of approved makes – Electrical works</b>		
A	PVC CONDUITS	UNIVERSAL/UNI PLAST / POLYCAB
B	UG CABLES	UNIVERSAL CCI/ANCHOR/ GLOSER/FINO LEX
C	COPPER WIRES	WINCAP/FINOLEX/ANCHOR/Lappindia
D	DP SWITCHES, SP SWITCHES AND SOCKETS	ANCHOR/ROMA / GM / CONA
E	MCB/ELCB	MDS/L&T HAGER
F	SWITCH FUSE UNITS/FISE LINK	GEC/EE/L&T/SCHNIEDER
G	FLOURESENT /CFL TUBE FITTING	PHILIPS/CROMPTON / SYSKA
H	LAMPS	PHILIPS/CROMPTON / SYSKA
I	EXHUST FANS	GEC/CROMPTON / BAJAJ
J	TELEPHONE CABLES	DOORAVANI/DELTON
K	MAIN MCB-DB (MDB)	L&T HAGER/ABB/SCHNIEDER
L	DB-KIOSK	L&T HAGER/MDR/ABB/SCHNIEDER
M	CT	L&T HAGER/ABB/SCHNIEDER
N	VOLT METER – ANALOGUE METER	L&T HAGER/ABB/SCHNIEDER
O	AMMETER-ANALOGUE METER	L&T HAGER/ABB/SCHNIEDER
P	INDICATING LAMPS	L&T HAGER
Q	GRIMMING LUNGS	DOWELS MAKE ONLY
R	CEILING FAN	CROMPTON GREAVES
S	GEYSER	RACOLD/BAJAJ / WIPRO
If the above brand not available the Equivalent Material to be approved by the Project Engineer-cum-Estate Officer before fixing		
All materials shall have to be got approved from the Project Engineer-cum-Estate Officer before being procured.		



**KEY PLAN:**

[illegible]

R-01	04.10.2018	Elevation wall has been added
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No.	DATE	NOTES
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## REVISIONS:

## NOTES:

The contractor shall verify all dimensions and levels on site before commencement of work. Written dimension shall take precedence over scaled dimensions. Any discrepancy shall be brought to the notice of the architect for clarification.

Project:

**ROCK STORAGE & THIN  
SECTION LABORATORY BUILDING  
AT CEAS,IISC,BANGLORE**

**Structural consultants:**

Plumbing consultants:

**Electrical consultants:**

Architects:

**ADVANI & ASSOCIATES**  
Architects, Interior designers & Valuers  
30/1 Leeman's Complex  
Cunningham Road  
Bangalore- 560 052

**Title:**

### GROUND FLOOR PLAN

Drawn - Kumaresh/ Rai/ Harsh

**Date** - 04.10.2018

**File name** - Z:\Projects\BSC Earth Science  
Building Documentation\Floor Plans

Drawing No.	Sheet No.	Revision No.
IISC(ES)-A-200	201	R-01

### Detail Mark

### Elevation Mark

## Section Mark

Section Number

Sheet Where Detail Is Shown

## Types Of Walls

- 1 200mm thick block masonry wall  
colour and texture as per  
architects choice
- 2 150mm thick block masonry wall  
colour and texture as per  
architects choice
- 3 100mm thick block masonry wall  
colour and texture as per  
architects choice

**Notes:**

- ① All dimensions should be referred from Architectural drawings.
- ② All Height lines should be referred to the Structural Floor Finish.
- ③ For finishing 75mm has to be considered.

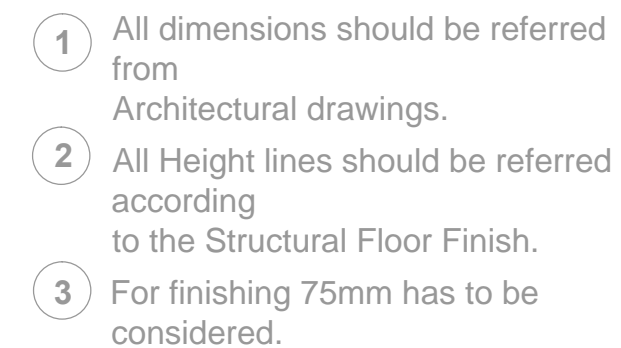
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Tender document for Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT







R-01	04.10.2018	Elevation wall has been added.
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NOTES:	
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<b>Project:</b>	

**Structural consultants:**

Plumbing consultants:

Electrical consultants:

Architects:

Title:

### THIRD FLOOR PLAN

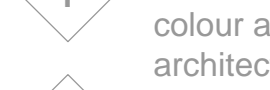
Drawn - Kumaresh/ Raj/ Harsh

Date	- 04.10.2018
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**File name** - Z:/Projects/IIJC Earth Science  
Building/Documentation/Floor Plan

Drawing No.	Sheet No.	Revision No.

IISC(ES)-A-200	202	R-01
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1 200mm thick block masonry wall  
colour and texture as per  
architects choice

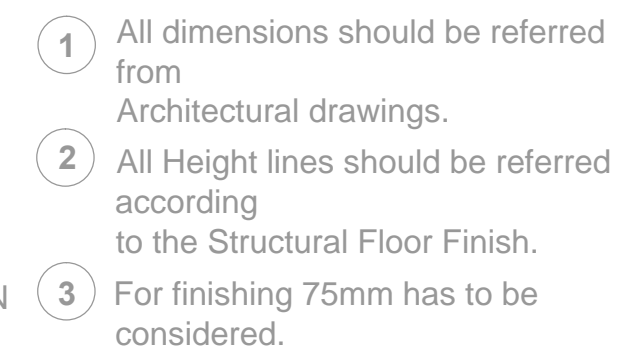
2 150mm thick block masonry wall  
colour and texture as per  
architects choice

3 100mm thick block masonry wall  
colour and texture as per  
architects choice

- 1 All dimensions should be referred from Architectural drawings.
- 2 All Height lines should be referred according to the Structural Floor Finish.
- 3 For finishing 75mm has to be considered.

1 THIRD FLOOR PLAN  
SCALE-1:60





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## 14 ARTICLES OF AGREEMENT

This Agreement is made at Bangalore, on this \_\_\_\_\_ day of \_\_\_\_\_ (month) in the year \_\_\_\_\_

BY AND BETWEEN

**INDIAN INSTITUTE OF SCIENCE**, a Trust registered under the Charitable Endowments Act, 1890, a deemed University and an autonomous Institution funded by the Ministry of Human Resource Development, Government of India having its office at **Sir C.V Raman Road, Malleswaram, BANGALORE 560 012**, (hereinafter referred to as the EMPLOYER which expression shall unless repugnant to the context or meaning thereof, mean and include its successors in interest, trustees and permitted assigns) of the ONE PART

AND

\_\_\_\_\_, hereinafter referred to as the "CONTRACTOR", (which expression shall unless repugnant to the context or meaning thereof, mean and include their partners, their respective heirs, executors, administrators and assigns) on the OTHER PART.

WHEREAS the Employer is desirous of getting the work of **"Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore"**

(hereinafter called the work) executed by the Contractor at the rates quoted by him amounting to **Rs. 460,00,000/- (Rupees Four hundred and sixty Lakhs Only)** which is the estimated amount put to tender.

**AND WHEREAS the Contractor has agreed to execute the aforesaid work on terms and conditions mentioned herein and subject to Tender Conditions of Contract and in accordance with the particular specifications, general notes and the schedule of quantities, schedule of rates, payment and penalty condition.**

**AND WHEREAS the contractor has deposited a sum of Rs 6,90,000/- (Rupees Six Lakh and Ninety Thousand Only) with Employer as security for the due performance of this Contract.**

NOW it is hereby agreed and declared by and between the parties hereto as follows;

1. In consideration of the payment to be made to them as hereinafter provided, the contractor shall, subject to the terms, conditions, specifications, schedule of quantities, drawings, etc., more particularly stated in the Schedules aforesaid, execute and complete the work within **15 (Fifteen) Months** starting after 10 days of issuance of work order or from the date of handing over of site, whichever is later.
2. The Employer shall pay to the contractor such sums as shall become payable hereunder at the time and in the manner specified in the conditions contained in the schedule aforesaid.
3. The time allowed for carrying out the work as entered in the tender Agreement shall be strictly observed by the contractor and shall be deemed to be the essence of the contract on the part of the contractor and shall be reckoned from 10 days after the date on which the order to commence the work is issued to the Contractor or the date of handing over of site, whichever is later. The work shall throughout the stipulated period of the contract be proceeded with all due diligence and the Contractor shall pay as compensation an amount equal to one percent, or such smaller amount, as the Director, Indian Institute of Science (whose decision in writing shall be final) may decide on the amount of estimated cost of the whole work as shown in the tender for every day that the work remains un commenced or unfinished, after proper dates.
4. The contractor shall to ensure good progress during the execution of the work the contractor shall be bound

in all cases in which the time allowed for any work exceeds one month (save for special jobs) to complete one-eighth of the whole work before, one-fourth of the whole time allowed under the contract has elapsed, three-eighths, of the work before one-half of such time has elapsed, and three-fourths of the work before three-fourths of such time has elapsed.

However, for special jobs if a time schedule has been submitted by the contractor and the same has been accepted by the Architects/ Project Engineer-cum-Estate Officer, CCMD the contractor shall comply with the said schedule. In the event of the Contractor failing to comply with the conditions he shall be liable to pay as compensation an amount equal to one percent or such smallest amount, as the Director, Indian Institute of Science (Whose decision in writing shall be final), may decide on the said estimated cost of the whole work for every day that the due quantity of work remains incomplete; provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed seven and a half (7 ½) percent of the estimated cost of the work as shown in the tender.

5 The Director of the Indian Institute of Science, without prejudice to his rights under the contract in any respect of any delay or inferior workmanship or otherwise, or to any claim for damages in respect of any breaches of the Contract and without prejudice to any rights of remedies under any of the 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 Architects/Project Engineer-cum-Estate Officer, CCMD a notice in writing to rectify reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un workmanlike manner, shall omit to comply with the requirements of such notice for a period of seven days of such notice thereafter or if the contractor shall delay or suspend the execution of the work so that in the judgment of the Project Engineer-cum-Estate Officer, CCMD (which shall be final and binding) either he will be unable to secure completion of the work by the date for completion of the work or he has already failed to complete the work by that date.
- (ii) If the Contractor being a company passes a resolution or if the Court passes an order to wind up the company or if a receiver or a manager is appointed on behalf of the creditors of the company or under circumstances which entitles the Court or the creditors to appoint a receiver or manager which would entitle the Court to make a winding up order.
- (iii) If the Contractor commits breach of any of the terms or conditions of this contract;
- (iv) If the contractor assigns or sublets without written approval of the Project Engineer-cum-Estate Officer, CCMD or becomes insolvent.

When the Contractor has made himself liable for action under any of the cases aforesaid, the Project Engineer-cum-Estate Officer, CCMD on behalf of the Director of the Institute shall have powers:

- (a) To determine or rescind the Contract as aforesaid (in which termination or recession notice in writing to the Contractor under hand of the Project Engineer-cum-Estate Officer, CCMD shall be conclusive evidence) Upon such determination or recession the security deposit of the Contractor shall be liable to be forfeited and shall absolutely be at the disposal of Institute.
- (b) To employ labor paid by the Institute and supply materials to carry out the work or any part of the debiting the Contractor with the cost of the labor and the price of the materials (of the amount of which cost and price certified by the Project Engineer-cum-Estate Officer, CCMD shall be final and conclusive against the Contractor) and crediting him with the value of the work done in all respect on the same manner and at the same rates as if it has been carried out by the contractor under the term of his contract. The certificate of the Project Engineer-cum-Estate Officer, CCMD as to the value of the work done shall be final and conclusive against the contractor, provided always that action under the sub-section shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the Institute are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the Contractor.
- (c) After giving notice to the contractor to measure up the work of the contractor and to take such part thereof as shall be un-executed out of his hands and to give it to another contractor to

complete in which case any expenses which may be incurred in excess a sum of which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Project Engineer-cum-Estate Officer, CCMD shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any monies due to him from the Institute under this contract or any other account whatsoever, of from his security deposit or the proceeds of sales thereof, or a sufficient part thereof as the case may be.

In the event of any one or more of the above courses being adopted by the Project Engineer-cum-Estate Officer, CCMD, 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 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 provisions, aforesaid, this contractor shall not be entitled for recover or be paid any sum for work thereto/for actually performed under this contract unless the Architect/ Project Engineer-cum-Estate Officer, CCMD 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.

6. The schedules above mentioned including the General Rules and Directions to Contractors and the following documents, viz.,

- i) Letter of Intent
- ii) Conditions of Contract – Volume I
- iii) Contractor's Bid – Bill of Quantities – Volume II
- iv) Technical Specifications – Volume III
- v) Drawings
- vi) The pre-Bid meeting proceedings and corrigendum
- vii) Any other document listed in the Contract Data as forming part of the contract

shall form an integral part of agreement and the decision of the Project Engineer-cum-Estate Officer, CCMD in reference to all matters of dispute as to material and workmanship shall be final and binding on both the parties.

7. The employer reserves to himself the right of altering the drawings of the works and of adding to or omitting any item of work from or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall not vitiate this agreement.

8. This agreement comprises the work aforesaid and all subsidiary works connected therewith even though such works may not be shown on the schedule appended hereto.

9. Notwithstanding anything contained in the tender submitted by the contractor, all the clauses of this agreement shall be binding on both the parties.

10. Where counter terms and conditions, printed or copied, are offered by the contractor, the same shall not be deemed to have been accepted by the Employer, unless specific written acceptance thereof is furnished by the Employer. Notwithstanding the foregoing, no verbal agreement or inference from conversation with any office members/representatives/employees of the Employer before, during or after the execution of the agreement, shall in any way affect or modify any of the terms/obligations contained herein.

11. In the event the contract is terminated by the Employer due to any aforementioned act/omission on the part of the contractor, or for any reason whatsoever, the Employer shall be entitled to engage the services of any other person, agency or Contractor to meet its requirement, without prejudice to its rights including claim for damages against the Contractor.

12. The Employer shall be indemnified for all losses due to commissions and omissions of persons deployed



by the contractor. If any loss or damage is caused to the Employer on account of any negligence, carelessness, acts of omissions, commissions of contractors, his employees or staff, the same shall be made good by the contractor. The contractor shall defend, indemnify and hold the Institute harmless from any liability or damage, lawsuits, penalties imposed by any State or Central Government Department or statutory body or by a third party for reasons of violation of any of statutory provisions or requirements by the contractor. The Employer shall not be liable for any damage or compensation payable to any workmen or to any person as a consequence of this work and the Employer shall be completely indemnified accordingly.

13. In case of disputes including all questions relating to the performance of the obligations under this agreement and all the dispute and differences which shall arise either during or after the agreement period or other matters arising out of or relating to this agreement or payments to be made in pursuance thereof shall be decided by the Director of IISc whose decision shall be binding on the contractor. The Contractor hereby agrees to be bound by the decision of the Director.

IN WITNESS WHEREOF the parties hereto have set their respective hands the day and the year here in above written.

In the presence of:

Signed by for and on behalf of the said Contractor.

In the presence of:

Signed by for and on behalf of the said Employer.

REGISTRAR  
INDIAN INSTITUTE OF SCIENCE  
BANGALORE-12

**INDIAN INSTITUTE OF SCIENCE, BANGALORE-12**  
**ITEM RATE TENDER FOR WORK**

I/We, hereby tender for the execution for the Indian Institute of Science, Bangalore-12 of the works specified in the under mentioned memorandum within the time specified in such memorandum at the rates specified therein and in accordance, in all respects, with the specifications, designs, drawings and instructions in writing which have been read by me/read and explained to me and with such materials as provided for by and in all other respects in accordance with such conditions as for as possible.

**MEMORANDUM OF WORK**

1.	GENERAL DESCRIPTION	<b>Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore"</b>
2.	ESTIMATED COST	Rs 460,00,000/-
3.	EARNEST MONEY	Rs. 6,90,000/-
4.	FURTHER SECURITY DEPOSIT	6.0% on the running account bills and final bill in addition to Earnest Money Deposit. When the F.S.D. deducted from the RA bills of the Contractor @ 6.0% of the bill amount exceeds Rs.1.00 lakhs, the amount in excess of Rs.1.00 lakh may, at the request of the Contractor, be released to him against the production of a bank guarantee issued by a Nationalised /Scheduled Bank only for an equal amount in the prescribed form. The bank guarantee should be valid till the completion of the defect liability period.
5.	TIME ALLOWED FOR THE COMPLETION OF WORK IN ALL RESPECTS FROM THE DATE OF COMMENCEMENT OF WORK	<b>15 (Fifteen) Months</b>
6.	BILLS OF QUANTITIES.	Enclosed.
7.	SPECIFICATIONS.	The work shall be carried out strictly in accordance with the enclosed specifications and wherever items are not covered by those specifications in accordance with specifications/drawings/designs/requirements and directions of the Project Engineer-cum-Estate Officer, CCMD or his representatives.

I/We hereby agree to abide by and fulfill all the terms and provisions of the conditions contained in the articles of agreement, which have been read by me/us or in default thereof to forfeit and pay to the Registrar, Indian Institute of Science or his successors the sums of monies mentioned in the said conditions.

The sum of **Rs.6,90,000/- (Rupees Six Lakh and Ninety Thousand Only)** has been deposited in cash/Bank draft as Earnest Money the full value which is to be absolutely forfeited to the Registrar or his successors in Office should I/We fail to commence the work specified in the above memorandum and complete the same.

Dated this .....

**Signature of the Contractor/s**

Witness to Contractor/s Signature:

NAME

ADDRESS

OCCUPATION

The above tender is hereby accepted by me on behalf of the Indian Institute of Science, Bangalore-

12.

**REGISTRAR  
INDIANINSTITUTE OF SICENCE  
BANGALORE.**

## Indian Institute of Science, Bangalore-12

### APPENDIX

1.Name of the work	<b>“Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore”</b>
2.Date of commencement of work	Within Ten days from the date of issue of work order or the date of handing over the site whichever is later
3.Time of Completion	<b>15 (Fifteen) Months</b>
4.Frequency of interim Certificate and payment	Once every month.
5.Further Security deposit	6.0% on the running bills and final bill in addition to earnest money deposit. When the F.S.D. deducted from the R.A. Bills of the contractor @ 6.0% of the bill amount exceeds Rs.1.00 Lakhs, the amount in excess of Ra.1.00 Lakh may, at the request of the contractor, be released to him against the production of bank guarantee issued from a Nationalised /Scheduled Bank only for an equal amount in the prescribed form. The bank guarantee should be valid till the completion of the defect liability period.
6. Defects liability period / retention amount from the final bill/release of balance of deposit.	The security deposit lodged/paid by a contractor shall be refunded to him after the final bill is paid or after twelve months from the date of completion of the work, during which period the work so executed should be maintained by the contractor in good order, whichever is later.
7. Penalty for delay	In respect of the shortfall in progress, assessed as due to the delay on the part of contractor as per clause 2(b) and 2(c), the contractor shall be liable to pay as penalty an amount equal to one percent of the estimated cost of the balance work assessed according to the programme, for every day that the due quantity of work remains incomplete, provided always that the total amount of penalty to be paid under the provisions of this clause shall not exceed 7 ½ percent of the estimated cost of the entire work as shown in the tender, provided further that in the event of the contractor making up the shortfall in progress within the stipulated or extended time of completion, the penalty so recovered may be refunded on an application in writing by the contractor.
8. Period for payment of Running Bill.	Three weeks from the date of submission of each Running account bills by the Contractor.
9. Period for submitting the final Bill.	One month from the date of virtual completion of the work by the Contractor.

### **GENERAL RULES AND DIRECTIONS TO CONTRACTORS**

1. A Schedule of Quantities (Bill of Quantities) is attached herewith. It should however, be clearly understood that these quantities are liable to alterations by omission, addition or variation, at the discretion of the Architects/Project Engineer Cum Estate Officer
2. The tenderer shall insert all rates and amounts and the totals in the schedule of quantities. Rate for alternative items, when asked for, shall be entered in red ink and shall not be included in the total.
3. The drawings together with specifications and conditions of contract are enclosed. These should be studied carefully by the intending tenderers. In the absence of specifications for any item of work, material or ingredient in the specifications, PWD specifications shall be followed and in the absence of specification for any item, materials are ingredient shall be fixed in all respects in accordance with the instructions and requirements of the Project Engineer Cum Estate Officer, the work will be the best of the kind.
4. The tenderer is expected to inspect the site and acquaint himself with the local conditions and will be deemed to have so done before submitting the tender.
5. The successful tenderer is required to sign an agreement for the due fulfillment of the contract and start the work immediately on of the acceptance of his tender. A draft of the Articles of the Agreement is enclosed. The Earnest Money referred to in item No.3 of Memorandum contained in the "Item Rate Tender for Works", will be forfeited and at the absolute disposal of the Employer if the Contractor defaults from signing the Agreement of in starting the work.
6. The rates quoted shall be for finished work and shall include for all necessary incidental work. Sales or any other tax on materials in respect of this contract will be payable by the Contractor. The Contractors cannot presume any details regarding the contract.
7. Water supply: The Contractor has to make his own arrangement for water supply. However, if water supply to the site at one convenient point is made available by the Institute, the charges for the consumption of water will be borne by the Contractor at 1.50% of the value of the work.
8. Supply of Electricity-electricity required for construction shall be arranged by the contractor itself. Electricity if supplied to the contractor by the institute will be metered and amounted will be recovered in the bills as per actual at rate fixed by the Institute. Supply of electricity from the institute is not mandatory. Non supply of electricity by the institute cannot be held as reason for short fall in progress.
9. The duration of the work is **15 (Fifteen) Months.**
10. Institute reserves the right to accept or reject any tender without assigning reasons thereof. He further reserves the right of deleting any item of work in this contract at his discretion.
11. The tenders are valid for a period of 3 (three) months from the date of opening.
12. This "General Rules and Directions to Contractors" shall also form part of the tender document.
- 12.1 Cement to be procured by contractor only, adhering to the following conditions.
  1. Only 43 grade OPC cement is to be used for the projects.
  2. The cement shall conform to IS 8119-1976.
  3. ACC, L&T, Coromandel, Birla brands only to be used.
  4. Test certificate is to be produced for every procurement made for.

13. This contract comprises:
  - a) General Builders work (Civil works).
  - b) Water supply and Sanitary installations.
  - c) Electrical Installations.
  - d) Sump and overhead tanks.
14. The General Builder should get the water supply and sanitary installations and the Electrical installations executed through licensed sub-contractor having good experience and qualified and competent tradesmen in the respective fields and approved by the Project Engineer Cum Estate Officer.
15. It is entirely the responsibility of the Contractor to arrange for and provide all materials required for successful completion of the work except such special materials that may be supplied if any.
16. The Brand, size and colour of vitrified/ceramic/glazed tiles shall be got approved from the Competent authority before procurement of materials. Brands recommended are Johnson, Naveen, Kazaria.
17. Water supply/Sanitary fixtures like Bibcocks, pillarcocks, Health-faucet, anglecock, bottle traps, EWC, IWC, urinal basins shall be as per approval from competent authority.
18. Tenders determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows
  - a) Where there is discrepancy between the rates in figures and in words, the lower of the two will be governed and
  - b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will be governed.
  - c) Where there is a discrepancy in entries of unit rate between the Original and Duplicate, the lower will govern.
19. Tol tax, Royalty for collecting earth, gravel, sand stone etc., GST or any other tax payable on account of this contract will have to be met from contractors account.
20. The Contractor should make his own arrangements to cover the all-round construction area, by providing polyester net/polythene sheet/barricading to avoid inconvenience to other surrounding departments, as directed by the Project Engineer-cum-Estate Officer of the work.
21. The debris arise during the period of construction will have to be cleared then and there to keep the surroundings clean and tidy. Such debris shall, if not cleared, be cleared at his risk and cost.
22. Work done as a sub- contractor under a prime contractor will not be considered for qualification.
23. "Prime Contractor" means a firm that performs a construction work itself and that the work is directly entrusted to the firm by the owner/ government/ local body/ quasi government/ Government undertaking bodies.
24. The contractor shall vacate the campus premises with all his men/ materials immediately after completion of the project.

## BOQ for the work of Construction of Rock Storage and Thin Section Laboratory Space at Centre for Earth Sciences, IISc, Bangalore

Item code	Description	Unit	Qty	Rate	Amount
Civil 1	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, including removal and disposal of top organic soil not exceeding 150 mm in thickness complete as per specifications. I. By Manual Means: A. In area of light jungle. MORTH Specification No. 201 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	sqm	10000.00		
Civil 2	Earthwork excavation all type of soil, for foundation of buildings, culverts, water supply, sanitary lines and electrical conduits either in pits or in trenches depth upto 1.5m. and above in width, in hard soil including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation after breaking of clods including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, etc., complete and directions of the Engineer in charge of the work and complete as per specifications.	cum	425.00		
Civil 3	Earthwork excavation all type of soil, for foundation of buildings, culverts, water supply, sanitary lines and electrical conduits either in pits or in trenches depth beyond 1.5m upto 3.0 mts and above in width, in hard soil including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation after breaking of clods including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, etc., complete and directions of the Engineer in charge of the work and complete	Cum	180.00		
Civil 4	Filling available excavated earth excluding rock in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	cum	580.00		

Civil 5	Filling new earth Brought from outside the campus in sides of foundations upto plinth in layers not exceeding 20 ems. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. The rate shall be inclusive of all taxes and GST and loading ,unloading, transportation etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	cum	125.00		
Civil 6	Providing and injecting chemical emulsion for Pre-constructional Anti .Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits, with chloropyriphos emulsifiable concentrates of 20% concentration, including cost of chemical, diluting in water to one percent concentration, labour, HOM of equipments, complete as per specifications. (Plinth area of the building at ground floor only shall be measured)specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	sqm	400.00		
Civil 7	Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement at 180kgs,with 40mm and down size graded granite metal coarse aggregates at 0.85cum and fine aggregates at 0.57cum machine mixed,machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications.	cum	102.50		
Civil 9	CONCRETE WORKS: Providing and laying in position plain cement concrete of mix M15 with OPC cement at 240kgs,with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted,, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. in plinth cills, The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	cum	7.50		



Civil 10	Providing and laying in position plain cement concrete of mix M15 with OPC cement at 240kgs,with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted,, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. in plinth cills, The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	cum	4.00		
Civil 11	Providing and laying in position plain cement concrete of mix M15 with OPC cement at 240kgs,with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted,, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. in plinth cills, The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. SECOND FLOOR	cum	7.50		
Civil 12	Providing and laying in position plain cement concrete of mix M15 with OPC cement at 240kgs,with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted,, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. in plinth cills, The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. THIRD FLOOR	cum	3.62		
Civil 13	Providing and laying in position plain cement concrete of mix M15 with OPC cement at 240kgs,with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted,, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. in plinth cills, The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. Terrace FLOOR	cum	2.50		
Civil 14	Providing and laying cement concrete using 20 mm and down size granite jelly of ready mixed concrete (RMC) M 25 for R.C.C works laid in 15 cms thick layers and well compacted vibrating, curing, finishing with necessary cement mortar, form works and scaffolding to withstand pumping of concrete, with all lead and lifts etc., complete exclusive of cost of steel and fabrication charges. For footing and pedestals	cum	74.00		

Civil 15	Providing and laying in position reinforced cement concrete of design mix M25 Site Mix with OPC cement at 340kgs, with 20mm and down size graded granite metal coarse aggregates at 0.70cum and fine aggregates at 0.47cum, with superplasticiser at 3lts confirming to IS9103 .1999 Reaffirmed .2008, at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, columns, Beams, slab, lift, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. GROUND FLOOR COLUMN	cum	18.75		
Civil 16	Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement at 340kgs, with 20mm and down size graded granite metal coarse aggregates at 0.70cum and fine aggregates at 0.47cum, with superplasticiser at 3lts confirming to IS9103 .1999 Reaffirmed .2008, at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, columns, Beams, slab, lift, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. for column . FIRST FLOOR	cum	8.50		
Civil 17	Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement at 340kgs, with 20mm and down size graded granite metal coarse aggregates at 0.70cum and fine aggregates at 0.47cum, with superplasticiser at 3lts confirming to IS9103 .1999 Reaffirmed .2008, at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, columns, Beams, slab, lift, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. for column . Second FLOOR	cum	8.50		
Civil 18	Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement at 340kgs, with 20mm and down size graded granite metal coarse aggregates at 0.70cum and fine aggregates at 0.47cum, with superplasticiser at 3lts confirming to IS9103 .1999 Reaffirmed .2008, at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, columns, Beams, slab, lift, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. for column . THIRD FLOOR	cum	8.50		

Civil 19	Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement at 340kgs, with 20mm and down size graded granite metal coarse aggregates at 0.70cum and fine aggregates at 0.47cum, with superplasticiser at 3lts confirming to IS9103 .1999 Reaffirmed .2008, at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, columns, Beams, slab, lift, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. TERRACE FLOOR COLUMN	cum	3.50		
Civil 20	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for plinth beam and sump base, roof and walls for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. exclusive of cost of steel and fabrication charges	cum	68.00		
Civil 21	Providing and laying in position Reinforced cement concrete of design mix M 25 with opc cement at 340kgs with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459 cum with super plasticiser at 3lts confirming to IS 9103 .1999 reaffirmed .2008, machine mixed, concrete laid in layers not exceeding 15 cms. thick, vibrated for all works in foundation and plinth, and ground floor level for slabs ,stair case, lintels, retaining walls return walls, walls any thickness including attached plasters , columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks anchor bolts, plain window sills, fillets, etc including cost of all materials, lead, lift, transportation, and other incidental charges labour, HOM of machinery, curing complete as per specifications. Ground floor	cum	16.50		

Civil 22	Providing and laying in position Reinforced cement concrete of design mix M 25 with opc cement at 340kgs with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459 cum with super plastisiser at 3lts confirming to IS 9103 .1999 reaffirmed .2008, machine mixed, concrete laid in layers not exceeding 15 cms. thick,vibrated for all works in foundation and plinth,and ground floor level for slabs ,stair case,lintles,retaining walls return walls,walls any thick ness including attached plasters ,coloums,piers,abutments,pillers,posts,struts,buttresses,string or lacingcourses,parapets,coping,bed blocks anchor bolts,plainwindow cills,fillets,etc including cost of all materials, lead,lift, transpotation, and other incidental charges labour, HOM of machinery, curing complete as per specifications. First floor	cum	16.50		
Civil 23	Providing and laying in position Reinforced cement concrete of design mix M 25 with opc cement at 340kgs with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459 cum with super plastisiser at 3lts confirming to IS 9103 .1999 reaffirmed .2008, machine mixed, concrete laid in layers not exceeding 15 cms. thick,vibrated for all works in foundation and plinth,and ground floor level for slabs ,stair case,lintles,retaining walls return walls,walls any thick ness including attached plasters ,coloums,piers,abutments,pillers,posts,struts,buttresses,string or lacingcourses,parapets,coping,bed blocks anchor bolts,plainwindow cills,fillets,etc including cost of all materials, lead,lift, transpotation, and other incidental charges labour, HOM of machinery, curing complete as per specifications. Second Floor	cum	16.50		
Civil 24	Providing and laying in position Reinforced cement concrete of design mix M 25 with opc cement at 340kgs with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459 cum with super plastisiser at 3lts confirming to IS 9103 .1999 reaffirmed .2008, machine mixed, concrete laid in layers not exceeding 15 cms. thick,vibrated for all works in foundation and plinth,and ground floor level for slabs ,stair case,lintles,retaining walls return walls,walls any thick ness including attached plasters ,coloums,piers,abutments,pillers,posts,struts,buttresses,string or lacingcourses,parapets,coping,bed blocks anchor bolts,plainwindow cills,fillets,etc including cost of all materials, lead,lift, transpotation, and other incidental charges labour, HOM of machinery, curing complete as per specifications. Third Floor	cum	16.50		

Civil 25	Providing and laying in position Reinforced cement concrete of design mix M 25 with opc cement at 340kgs with 20mm and down size graded granite metal coarse aggregates at 0.878cum and fine aggregates at 0.459 cum with super plastisiser at 3lts conforming to IS 9103 .1999 reaffirmed .2008, machine mixed, concrete laid in layers not exceeding 15 cms. thick,vibrated for all works in foundation and plinth,and ground floor level for slabs ,stair case,lintles,retaining walls return walls,walls any thick ness including attached plasters ,coloums,piers,abutments,pillers,posts,struts,buttresses,string or lacingcourses,parapets,coping,bed blocks anchor bolts,plainwindow cills,fillets,etc including cost of all materials, lead,lift, transpotation, and other incidental charges labour, HOM of machinery, curing complete as per specifications. Terrace floor	cum	6.50		
Civil 26	Providing RCC loft Atta 7.5 Cms thick with Cement Concrete Mix M20 using clean granite or trap jelly of 20 mm and down size with necessary form work, centring, curing, finishing the exposed faces with cement mortar 1:3 etc complete including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, HOM of machinery, curing complete etc as per specification.Exclusive cost of Steel and Fabrication charges The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . GROUND FLOOR	SQM	15.00		
Civil 27	Providing RCC loftAtta 7.5 Cms thick with Cement Concrete Mix M20 using clean granite or trap jelly of 20 mm and down size with necessary form work, centring, curing, finishing the exposed faces with cement mortar1:3 etc complete including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, HOM of machinery, curing complete etc as per specification. Exclusive cost of Steel and Fabrication charges The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . FIRST FLOOR	Sqm	20.50		

Civil 28	Providing RCC loft Atta 7.5 Cms thick with Cement Concrete Mix M20 using clean granite or trap jelly of 20 mm and down size with necessary form work, centring, curing, finishing the exposed faces with cement mortar 1:3 etc complete including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, HOM of machinery, curing complete etc as per specification. Exclusive cost of Steel and Fabrication charges The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . SECOND FLOOR	Sqm	15.00		
Civil 29	Providing RCC loft Atta 7.5 Cms thick with Cement Concrete Mix M20 using clean granite or trap jelly of 20 mm and down size with necessary form work, centring, curing, finishing the exposed faces with cement mortar 1:3 etc complete including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, HOM of machinery, curing complete etc as per specification. Exclusive cost of Steel and Fabrication charges The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . THIRD FLOOR	Sqm	20.50		
Civil 30	Providing RCC loft Atta 7.5 Cms thick with Cement Concrete Mix M20 using clean granite or trap jelly of 20 mm and down size with necessary form work, centring, curing, finishing the exposed faces with cement mortar 1:3 etc complete including cost and conveyance of all materials, cost of labour and equipment, with all lead and lift, loading and unloading and all other incidental charges required for successful completion of work as per specification, designs, drawings, HOM of machinery, curing complete etc as per specification. Exclusive cost of Steel and Fabrication charges The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . Terrace FLOOR	Sqm	16.00		
Civil 31	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for Roof beams and slabs for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. (exculsive of cost of steel and fabrication charges) Ground floor	CUM	56.00		

Civil 32	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for Roof beams and slabs for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. exculsive of cost of steel and fabrication charges First floor	CUM	62.50		
Civil 33	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for Roof beams and slabs for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. exculsive of cost of steel and fabrication chargesSecond floor	CUM	56.00		
Civil 34	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for Roof beams and slabs for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. exculsive of cost of steel and fabrication charges Third floor	CUM	62.50		
Civil 35	Providing and laying cement concrete using 20mm and down size granite jelly or ready mixed concrete M 25 Grade concrete for Roof beams and slabs for RCC works laid in 15 cm thick layers and well compacted including vibrating curing and necessary steel or ply wood or plank centering and form work etc., including smooth finish in CM 1:3, with all lead and lift loading , unloading and other incidental charges etc., complete. exculsive of cost of steel and fabrication charges Terrace floor	CUM	9.50		
Civil 37	CENTERING WORKS: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifcations.	SQM	100.00		
Civil 38	Providing and removing centering, shuttering, strutting, propping etc., and removing of form work for columns, pillars, piers, abutments, post and struts, square rectangular polygon in plan including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge GROUND FLOOR	SQM	250.00		

Civil 39	Providing and removing centering, shuttering, strutting, propping etc., and removing of form work for columns, pillars, piers, abutments, post and struts, square rectangular polygon in plan including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	SQM	100.00		
Civil 40	Providing and removing centering, shuttering, strutting, propping etc., and removing of form work for columns, pillars, piers, abutments, post and struts, square rectangular polygon in plan including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. Second FLOOR	SQM	100.00		
Civil 41	Providing and removing centering, shuttering, strutting, propping etc., and removing of form work for columns, pillars, piers, abutments, post and struts, square rectangular polygon in plan including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. THIRD FLOOR	SQM	100.00		
Civil 42	Providing and removing centering, shuttering, strutting, propping etc., and removing of form work for columns, pillars, piers, abutments, post and struts, square rectangular polygon in plan including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. TERRACE FLOOR	SQM	40.00		
Civil 43	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	SQM	850.00		
Civil 44	Providing and removing centering, shuttering, strutting, propping etc." and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specifications. Plinth Beam	SQM	153.00		
Civil 45	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for Stairs including landing except spiral staircase including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	SQM	30.00		



Civil 46	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for Stairs including landing except spiral staircase including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . FIRST FLOOR	SQM	42.00		
Civil 47	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for Stairs including landing except spiral staircase including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. SECOND FLOOR	SQM	42.00		
Civil 48	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for Stairs including landing except spiral staircase including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . THIRD FLOOR	SQM	42.00		
Civil 49	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for Stairs including landing except spiral staircase including cost of all materials, labour complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. TERRACE FLOOR	SQM	42.00		
Civil 50	Providing and removing centering, shuttering, strutting, propping etc" and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specifications. GROUND FLOOR	SQM	360.00		
Civil 51	Providing and removing centering, shuttering, strutting, propping etc" and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specifications, . FIRST FLOOR	SQM	350.00		
Civil 52	Providing and removing centering, shuttering, strutting, propping etc" and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specifications, . Second FLOOR	SQM	360.00		
Civil 53	Providing and removing centering, shuttering, strutting, propping etc" and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specifications, THIRD FLOOR	SQM	350.00		

Civil 54	Providing and removing centering, shuttering, strutting, propping etc" and removal of form work for sides and soffits of beams, beam haunchings, cantilever girders, bressumers and lintels not exceeding 1 m in depth including cost of all materials, labour complete as per specificaitons . TERRACE FLOOR	SQM	85.00		
Civil 55	Providng and removing centering, shuttering, strutting, propping etc., and removal of form work for flat surface such as suspended floors, roofs, landings, balconies and likes, thickness upto 200mm including cost of all materials, labour complete as per specifications.up to 3.50m from Ground level. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Height for 0 to 3.5 mts . GROUND FLOOR	SQM	770.00		
Civil 56	Providng and removing centering, shuttering, strutting, propping etc., and removal of form work for flat surface such as suspended floors, roofs, landings, balconies and likes, thickness upto 200mm including cost of all materials, labour complete as per specifications.up to 3.50m from Ground level.The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Height for 0 to 3.5 mts . FIRST FLOOR	SQM	300.00		
Civil 57	Providng and removing centering, shuttering, strutting, propping etc., and removal of form work for flat surface such as suspended floors, roofs, landings, balconies and likes, thickness upto 200mm including cost of all materials, labour complete as per specifications.up to 3.50m from Ground level.The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Height for 0 to 3.5 mts . Second FLOOR	SQM	770.00		
Civil 58	Providng and removing centering, shuttering, strutting, propping etc., and removal of form work for flat surface such as suspended floors, roofs, landings, balconies and likes, thickness upto 200mm including cost of all materials, labour complete as per specifications.up to 3.50m from Ground level.The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Height for 0 to 3.5 mts . THIRD FLOOR	SQM	300.00		
Civil 59	Providng and removing centering, shuttering, strutting, propping etc., and removal of form work for flat surface such as suspended floors, roofs, landings, balconies and likes, thickness upto 200mm including cost of all materials, labour complete as per specifications.up to 3.50m from Ground level.The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Height for 0 to 3.5 mts . TERRACE FLOOR	SQM	50.00		

Civil 60	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and /or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per design laps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FOOTING, PEDESTAL, COLUMN	MT	19.10		
Civil 61	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per design laps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	MT	14.50		
Civil 62	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per designlaps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	MT	12.80		
Civil 63	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per design laps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Second FLOOR	MT	12.80		

Civil 64	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per design laps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . Third FLOOR	MT	12.80		
Civil 65	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and or welding wherever required, tying with binding wire of approved and anchoring to the adjoining members wherever necessary complete as per design laps, hooks and wastage shall not be measured and paid cost of material, labour, HOM of machineries complete as per specifications. Specification No. KBS 4.6.3. Fe 550 The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	MT	3.00		
Civil 67	MASONRY WORKS : Providing and constructing granite or trapor basalt stone masonry in foundation with cement mortar 1:6 uncoursed , bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.Rate only	CUM	30.26		
Civil 68	Providing and constructing precast concrete solid blocks with compressive strength not less than 4 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185 or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	SQM	560.00		
Civil 69	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185 or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	SQM	495.00		

Civil 70	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185or 1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SQM	560.00		
Civil 71	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185 or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	SQM	495.00		
Civil 72	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185 or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	SQM	70.00		
Civil 73	Providing and constructing precast concrete solid blocks with compressive strength not less than 4 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	SQM	62.00		
Civil 74	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185or1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	SQM	75.00		

Civil 75	Providing and constructing precast concrete solid blocks with compressive strength not less than 4 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185 or 1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SQM	62.00		
Civil 76	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer blocks with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge THIRD FLOOR	SQM	75.00		
Civil 77	Providing and constructing precast concrete solid blocks with compressive strength not less than 5 Newton per sqmm with cement mortar 1:4 masonry quoin, Jamb, closer block with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	SQM	515.00		
Civil 78	Providing and constructing non .load bearing wall with cement concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 Jamb, closer blocks with blocks of size 40x10x20cms. lxbxh conforming to I.S : 2185 OR 1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications . GROUND FLOOR	SQM	10.00		
Civil 79	Providing and constructing non .load bearing wall with cement concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 Jamb, closer block with blocks of size 40x10x20cms. lxbxh conforming to I.S : 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications . FIRST FLOOR	SQM	25.00		
Civil 80	Providing and constructing non .load bearing wall with cement concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 Jamb, closer blocks with blocks of size 40x10x20cms. lxbxh conforming to I.S : 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications . SECOND FLOOR	SQM	10.00		

Civil 81	Providing and constructing non .load bearing wall with cement concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 Jamb, closer blocks with blocks of size 40x10x20cms. lxbxh conforming to I.S : 2185 1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications . THIRD FLOOR	SQM	25.00		
Civil 82	Providing and constructing non .load bearing wall with cement concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 Jamb, closer blockswith blocks of size 40x10x20cms. lxbxh conforming to I.S : 2185 1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications . TERRACE FLOOR	SQM	37.00		
Civil 83	Providing and constructing burnt brick masonry with approved quality of modular brick of standard size of class designation 7.5 newton persqmm tabel moulded with cement mortar 1:8 for super structure including cost of materials ,labour charges,scaffolding ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	Cum	2.50		
Civil 84	Providing and constructing burnt brick masonry with approved quality of modular brick of standard size of class designation 7.5 newton persqmm tabel mouldedwith cement mortar 1:8 for super structure including cost of materials ,labour charges,scaffolding ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	cum	2.50		
Civil 85	Providing and constructing burnt brick masonry with approved quality of modular brick of standard size of class designation 7.5 newton persqmm tabel moulded with cement mortar 1:8 for super structure including cost of materials ,labour charges,scaffolding ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	cum	2.50		
Civil 86	Providing and constructing burnt brick masonry with approved quality of modular brick of standard size of class designation 7.5 newton persqmm tabel mouldedwith cement mortar 1:8 for super structure including cost of materials ,labour charges,scaffolding ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	cum	2.50		

Civil 87	Providing and constructing burnt brick masonry with approved quality of modular brick of standard size of class designation 7.5 newton persqmm tabel mouldedwith cement mortar 1:8 for super structure including cost of materials ,labour charges,scaffolding ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	cum	6.00		
Civil 88	Providing White Sal wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves excluding cost of cement concrete and side clamps , but including cost of mater The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	cum	1.50		
Civil 89	Providing White Sal wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves excluding cost of cement concrete and side clamps , but including cost of mater The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	cum	2.00		
Civil 90	Providing White Sal wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves excluding cost of cement concrete and side clamps , but including cost of mater The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	cum	1.50		
Civil 91	Providing White Sal wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves excluding cost of cement concrete and side clamps , but including cost of mater The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	cum	2.00		
Civil 92	Providing White Sal wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves excluding cost of cement concrete and side clamps , but including cost of mater The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	Cum	0.25		



Civil 93	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	NOS	9		
Civil 94	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	NOS	12		
Civil 95	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	NOS	9		
Civil 96	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	NOS	12		
Civil 97	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	NOS	2		

Civil 98	Providing and fixing flush door shutter 35 mm thick both side teak made out of solid core black board type, well seasoned chemically treated hard wood battens and internal frame with 45 mm wide wooden frame all round door shutters covered with cross bonded wooden sheets core veneer hot pressed and fastened on both side of the door using liquid phenol formadehyde resin as per IS specification 2202 Part i 1991. From manufacturer complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	SMT	24		
Civil 99	Providing and fixing flush door shutter 35 mm thick both side teak made out of solid core black board type, well seasoned chemically treated hard wood battens and internal frame with 45 mm wide wooden frame all round door shutters covered with cross bonded wooden sheets core veneer hot pressed and fastened on both side of the door using liquid phenol formadehyde resin as per IS specification 2202 Part i 1991. From manufacturer complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	SMT	30		
Civil 100	Providing and fixing flush door shutter 35 mm thick both side teak made out of solid core black board type, well seasoned chemically treated hard wood battens and internal frame with 45 mm wide wooden frame all round door shutters covered with cross bonded wooden sheets core veneer hot pressed and fastened on both side of the door using liquid phenol formadehyde resin as per IS specification 2202 Part i 1991. From manufacturer complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SMT	24		
Civil 101	Providing and fixing flush door shutter 35 mm thick both side teak made out of solid core black board type, well seasoned chemically treated hard wood battens and internal frame with 45 mm wide wooden frame all round door shutters covered with cross bonded wooden sheets core veneer hot pressed and fastened on both side of the door using liquid phenol formadehyde resin as per IS specification 2202 Part i 1991. From manufacturer complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SMT	24		

Civil 102	Providing and fixing flush door shutter 35 mm thick both side teak made out of solid core black board type, well seasoned chemically treated hard wood battens and internal frame with 45 mm wide wooden frame all round door shutters covered with cross bonded wooden sheets core veneer hot pressed and fastened on both side of the door using liquid phenol formaldehyde resin as per IS specification 2202 Part i 1991. From manufacturer complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	SMT	3		
Civil 103	Providing and fixing 65mmx125mm GRP Doorframe fabricated using E .Glass Chopped Strand Mat CSM U.V . stabilized Isophthalic Gelcoat and Isophthalic resin. The thickness of the GRP skin shall not be less than 2.0mm. The doorframe consists of four segments, which are provided with plug .in .socket arrangement in .situ in the mould. The segments are plugged in and are joined together by means of screws. The GRP frame shall be provided with wooden reinforcement on 6 locations for high screw holding capacity for fixing metalling hold fast and shall be consolidated by filling with medium density foam/Plaster of Paris with fibre reinforcement. Six Numbers of 260mmx25mmx5mm size 'S' shaped M.S. flat hold fast shall be provided with the frame. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . GROUND FLOOR	Rmt	9		
Civil 104	Providing and fixing 65mmx125mm GRP Doorframe fabricated using E .Glass Chopped Strand Mat CSM U.V . stabilized Isophthalic Gelcoat and Isophthalic resin. The thickness of the GRP skin shall not be less than 2.0mm. The doorframe consists of four segments, which are provided with plug .in .socket arrangement in .situ in the mould. The segments are plugged in and are joined together by means of screws. The GRP frame shall be provided with wooden reinforcement on 6 locations for high screw holding capacity for fixing metalling hold fast and shall be consolidated by filling with medium density foam/Plaster of Paris with fibre reinforcement. Six Numbers of 260mmx25mmx5mm size 'S' shaped M.S. flat hold fast shall be provided with the frame. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . FIRST FLOOR	Rmt	33		

Civil 105	Providing and fixing 65mmx125mm GRP Doorframe fabricated using E .Glass Chopped Strand Mat CSM U.V . stabilized Isophthalic Gelcoat and Isophthalic resin. The thickness of the GRP skin shall not be less than 2.0mm. The doorframe consists of four segments, which are provided with plug .in .socket arrangement in .situ in the mould. The segments are plugged in and are joined together by means of screws. The GRP frame shall be provided with wooden reinforcement on 6 locations for high screw holding capacity for fixing metalling hold fast and shall be consolidated by filling with medium density foam/Plaster of Paris with fibre reinforcement. Six Numbers of 260mmx25mmx5mm size 'S' shaped M.S. flat hold fast shall be provided with the frame. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . SECOND FLOOR	Rmt	9		
Civil 106	Providing and fixing 65mmx125mm GRP Doorframe fabricated using E .Glass Chopped Strand Mat CSM U.V . stabilized Isophthalic Gelcoat and Isophthalic resin. The thickness of the GRP skin shall not be less than 2.0mm. The doorframe consists of four segments, which are provided with plug .in .socket arrangement in .situ in the mould. The segments are plugged in and are joined together by means of screws. The GRP frame shall be provided with wooden reinforcement on 6 locations for high screw holding capacity for fixing metalling hold fast and shall be consolidated by filling with medium density foam/Plaster of Paris with fibre reinforcement. Six Numbers of 260mmx25mmx5mm size 'S' shaped M.S. flat hold fast shall be provided with the frame. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . THIRD FLOOR	Rmt	33		

Civil 107	<p>Providing and fixing 65mmx125mm GRP Doorframe fabricated using E .Glass Chopped Strand Mat CSM U.V . stabilized Isophthalic Gelcoat and Isophthalic resin. The thickness of the GRP skin shall not be less than 2.0mm. The doorframe consists of four segments, which are provided with plug .in .socket arrangement in .situ in the mould. The segments are plugged in and are joined together by means of screws. The GRP frame shall be provided with wooden reinforcement on 6 locations for high screw holding capacity for fixing metalling hold fast and shall be consolidated by filling with medium density foam/Plaster of Paris with fibre reinforcement. Six Numbers of 260mmx25mmx5mm size 'S' shaped M.S. flat hold fast shall be provided with the frame. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . TERRACE FLOOR</p>	Rmt	9		
Civil 108	<p>Providing and fixing factory made single leaf rigid GRP Sandwich composite door shutter of 32mm thick, laminated with two GRP skins with wood grain finish, fabricated using U.V .stabilized Isophthalic Gelcoat and on layer of 450 gsm E .Glass Chopped strand Mat CSM, impregnated with orthophthalic polyester resin. The thickness of the skins shall not be less than 1.5mm. Expanded Polystyrene EPS structural foam panel of 29mm thickness and a density of 20 Kg cum shall be used as core material. Wooden reinforcements made of Seasoned Salwood block of cross section not less than 28mmx32mm and also necessary salwood reinforcements for fixing the metal fittings such as tower bolts, aldrops, handles, etc, shall be provided. A structural adhesive compatible with EPS foam shall be used for bonding the core material, the Salwood reinforcement and the skins. The material and process for manufacturing the door shutters shall confirm to RV/TIFAC Composites Design centre Standards and specifications and the door shutters tested in confirmation to IS 4020 .1994. The finish of shutter will be plain colour White/Ivory/Beige/Light Grey or any other colour using high quality pigments. Excluding cost of fixtures and inclusive of supply of shutters to respective work spot The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR</p>	SQM	3		

Civil 109	<p>Providing and fixing factory made single leaf rigid GRP Sandwich composite door shutter of 32mm thick, laminated with two GRP skins with wood grain finish, fabricated using U.V .stabilized Isophthalic Gelcoat and on layer of 450 gsm E .Glass Chopped strand Mat CSM, impregnated with orthophthalic polyester resin. The thickness of the skins shall not be less than 1.5mm. Expanded Polystyrene EPS structural foam panel of 29mm thickness and a density of 20 Kg cum shall be used as core material. Wooden reinforcements made of Seasoned Salwood block of cross section not less than 28mmx32mm and also necessary salwood reinforcements for fixing the metal fittings such as tower bolts, aldrops, handles, etc, shall be provided. A structural adhesive compatible with EPS foam shall be used for bonding the core material, the Salwood reinforcement and the skins. The material and process for manufacturing the door shutters shall confirm to RV/TIFAC Composites Design centre Standards and specifications and the door shutters tested in confirmation to IS 4020 .1994. The finish of shutter will be plain colour White/Ivory/Beige/Light Grey or any other colour using high quality pigments. Excluding cost of fixtures and inclusive of supply of shutters to respective work spot The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR</p>	SQM	10		
Civil 110	<p>Providing and fixing factory made single leaf rigid GRP Sandwich composite door shutter of 32mm thick, laminated with two GRP skins with wood grain finish, fabricated using U.V .stabilized Isophthalic Gelcoat and on layer of 450 gsm E .Glass Chopped strand Mat CSM, impregnated with orthophthalic polyester resin. The thickness of the skins shall not be less than 1.5mm. Expanded Polystyrene EPS structural foam panel of 29mm thickness and a density of 20 Kgcumshall be used as core material. Wooden reinforcements made of Seasoned Salwood block of cross section not less than 28mmx32mm and also necessary salwood reinforcements for fixing the metal fittings such as tower bolts, aldrops, handles, etc, shall be provided. A structural adhesive compatible with EPS foam shall be used for bonding the core material, the Salwood reinforcement and the skins. The material and process for manufacturing the door shutters shall confirm to RV/TIFAC Composites Design centre Standards and specifications and the door shutters tested in confirmation to IS 4020 .1994. The finish of shutter will be plain colour White/Ivory/Beige/Light Grey or any other colour using high quality pigments. Excluding cost of fixtures and inclusive of supply of shutters to respective work spot The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR</p>	SQM	3		

Civil 111	<p>Providing and fixing factory made single leaf rigid GRP Sandwich composite door shutter of 32mm thick, laminated with two GRP skins with wood grain finish, fabricated using U.V .stabilized Isophthalic Gelcoat and on layer of 450 gsm E .Glass Chopped strand Mat CSM, impregnated with orthophthalic polyester resin. The thickness of the skins shall not be less than 1.5mm. Expanded Polystyrene EPS structural foam panel of 29mm thickness and a density of 20 Kgcum shall be used as core material. Wooden reinforcements made of Seasoned Salwood block of cross section not less than 28mmx32mm and also necessary salwood reinforcements for fixing the metal fittings such as tower bolts, aldrops, handles, etc, shall be provided. A structural adhesive compatible with EPS foam shall be used for bonding the core material, the Salwood reinforcement and the skins. The material and process for manufacturing the door shutters shall confirm to RV/TIFAC Composites Design centre Standards and specifications and the door shutters tested in confirmation to IS 4020 .1994. The finish of shutter will be plain colour White/Ivory/Beige/Light Grey or any other colour using high quality pigments. Excluding cost of fixtures and inclusive of supply of shutters to respective work spot The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR</p>	SQM	10		
Civil 112	<p>Providing and fixing factory made single leaf rigid GRP Sandwich composite door shutter of 32mm thick, laminated with two GRP skins with wood grain finish, fabricated using U.V .stabilized Isophthalic Gelcoat and on layer of 450 gsm E .Glass Chopped strand Mat CSM impregnated with orthophthalic polyester resin. The thickness of the skins shall not be less than 1.5mm. Expanded Polystyrene EPS structural foam panel of 29mm thickness and a density of 20 Kgcum shall be used as core material. Wooden reinforcements made of Seasoned Salwood block of cross section not less than 28mmx32mm and also necessary salwood reinforcements for fixing the metal fittings such as tower bolts, aldrops, handles, etc, shall be provided. A structural adhesive compatible with EPS foam shall be used for bonding the core material, the Salwood reinforcement and the skins. The material and process for manufacturing the door shutters shall confirm to RV/TIFAC Composites Design centre Standards and specifications and the door shutters tested in confirmation to IS 4020 .1994. The finish of shutter will be plain colour White/Ivory/Beige/Light Grey or any other colour using high quality pigments. Excluding cost of fixtures and inclusive of supply of shutters to respective work spot The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR</p>	SQM	3		

Civil 114	WINDOW WORKS: Providing and fixing of glazed 3 Track .2 Panel Sliding doors, Windows with Mesh made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window. The sliding outer frame having a overall size of 108 x45 mm with reinforcement of 1 mm thickness and sash with overall size of 30x48.5 mm with reinforcement of 1.5mm thickness. Glazing bead for fixing of glass shall be of size 20x18mm and coextruded with gasket. fiber glass shall be provided in the mesh shutter.Windows shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm . GROUND FLOOR	SQM	45		
Civil 115	Providing and fixing of glazed 3 Track .2 Panel Sliding doors, Windows with Mesh made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window. The sliding outer frame having a overall size of 108 x45 mm with reinforcement of 1 mm thickness and sash with overall size of 30x48.5 mm with reinforcement of 1.5mm thickness. Glazing bead for fixing of glass shall be of size 20x18mm and coextruded with gasket. fiber glass shall be provided in the mesh shutter.Windows shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm . FIRST FLOOR	SQM	52		
Civil 116	Providing and fixing of glazed 3 Track .2 Panel Sliding doors, Windows with Mesh made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window. The sliding outer frame having a overall size of 108 x45 mm with reinforcement of 1 mm thickness and sash with overall size of 30x48.5 mm with reinforcement of 1.5mm thickness. Glazing bead for fixing of glass shall be of size 20x18mm and coextruded with gasket. fiber glass shall be provided in the mesh shutter.Windows shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm . SECOND FLOOR	SQM	45		
Civil 117	Providing and fixing of glazed 3 Track .2 Panel Sliding doors, Windows with Mesh made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window. The sliding outer frame having a overall size of 108 x45 mm with reinforcement of 1 mm thickness and sash with overall size of 30x48.5 mm with reinforcement of 1.5mm thickness. Glazing bead for fixing of glass shall be of size 20x18mm and coextruded with gasket. fiber glass shall be provided in the mesh shutter.Windows shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm . THIRD FLOOR	SQM	52		



Civil 118	Providing and fixing of glazed 3 Track .2 Panel Sliding doors, Windows with Mesh made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window. The sliding outer frame having a overall size of 108 x45 mm with reinforcement of 1 mm thickness and sash with overall size of 30x48.5 mm with reinforcement of 1.5mm thickness. Glazing bead for fixing of glass shall be of size 20x18mm and coextruded with gasket. fiber glass shall be provided in the mesh shutter.Windows shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm . TERRACE FLOOR	SQM	3		
Civil 119	Providing and fixing of glazed Ventilator made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window.ventilators shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . GROUND FLOOR	SMT	2		
Civil 120	Providing and fixing of glazed Ventilator made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window.ventilators shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . FIRST FLOOR	SMT	2		
Civil 121	Providing and fixing of glazed Ventilator made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window.ventilators shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . SECOND FLOOR	SMT	2		
Civil 122	Providing and fixing of glazed Ventilator made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window.ventilators shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . THIRD FLOOR	SMT	2		

Civil 123	Providing and fixing of glazed Ventilator made out of multi Chamered uPVC sections with TPV gaskets having Isolated drainage and reinforced with Galvanized iron profiles through out the window.ventilators shall be provided with 5mm plain float glass, standard hardware and single point locking system of flush lock, Wall thickness of frame and sash shall be 2 .2.2 mm. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. . TERRACE FLOOR	SMT	2		
Civil 124	Providing and fixing MS grill works for windows and ventilators using M.S. flats, or M.S. square rods, or combination of cutting steel sections and welding the same to required pattern with a coat of Red lead primer, cost of materials, fixtures, labour and HOM of machineries complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	Kgs	1500		
Civil 125	Providing Teak wood frames of doors ,windows,clesrestory windows,ventilatorsand other frames,wrought,framed or assembled including making plaster grooves(excluding cost of cement,labour,HOM of machineries complete as per specifications The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	CUM	1		
Civil 126	Providing and fixing in position fully panelled Teak wood shutters for doors ,with styles and rails of 40mm thick with bottom and lock rails 180mm wide top rail and styles .100 mm wide as per drawing and panels of 25 mm thick including cost of materials, labour,HOM of machineries complete as per specificatio excluding cost of fixtures specificatio No KBS 9.34 The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	SMT	6		

Civil 127	Providing and Fixing 304 grade stainless steel hand rails of 14 guage pipes for ramps staircase madeout of stainless steel hollow pipes , using 50 mm dia for verticals at 1.60 mtr cc fixed to the ramps or steps by drilling with bolts and 100 mm dia MS base plate 10 guage for fixing vertical pipes 4 .nos anchor bolts and 40 mm dia pipes fixed horizontally for 2 rows top and one pipe fixed with vertical pippes another one fixed with elbows and 25mm dia pipes are fixed horizontally for 2 rows below top measure at equal intervals including cutting ,welding ,bending wherever necessary with suitable caps at tops ,bottoms and corners finishing with mat or shining etc.complete including cost and conveyance of all materials ,labourfor all items of work ,HOM of equipment with all lead and lift ,loading and unloading ,transportation chargesand all other incidental charges etc,complete as per specification and directions of the Engineer .in .charge of the work Ground floor	SMT	12.50		
Civil 128	Providing and Fixing 304 grade stainless steel hand rails of 14 guage pipes for ramps staircase madeout of stainless steel hollow pipes , using 50 mm dia for verticals at 1.60 mtr cc fixed to the ramps or steps by drilling with bolts and 100 mm dia MS base plate 10 guage for fixing vertical pipes 4 .nos anchor bolts and 40 mm dia pipes fixed horizontally for 2 rows top and one pipe fixed with vertical pippes another one fixed with elbows and 25mm dia pipes are fixed horizontally for 2 rows below top measure at equal intervals including cutting ,welding ,bending wherever necessary with suitable caps at tops ,bottoms and corners finishing with matshining etc.complete including cost and conveyance of all materials ,labourfor all items of work ,HOM of equipment with all lead and lift ,loading and unloading ,transportation chargesand all other incidental charges etc,complete as per specification and directions of the Engineer .in .charge of the work First floor	SMT	12.5		
Civil 129	Providing and Fixing 304 grade stainless steel hand rails of 14 guage pipes for ramps staircase madeout of stainless steel hollow pipes , using 50 mm dia for verticals at 1.60 mtr cc fixed to the ramps or steps by drilling with bolts and 100 mm dia MS base plate 10 guage for fixing vertical pipes 4 .nos anchor bolts and 40 mm dia pipes fixed horizontally for 2 rows top and one pipe fixed with vertical pippes another one fixed with elbows and 25mm dia pipes are fixed horizontally for 2 rows below top measure at equal intervals including cutting ,welding ,bending wherever necessary with suitable caps at tops ,bottoms and corners finishing with mat or shining etc.complete including cost and conveyance of all materials ,labourfor all items of work ,HOM of equipment with all lead and lift ,loading and unloading ,transportation chargesand all other incidental charges etc,complete as per specification and directions of the Engineer .in .charge of the work Second floor	SMT	12.5		

Civil 130	Providing and Fixing 304 grade stainless steel hand rails of 14 guage pipes for ramps staircase madeout of stainless steel hollow pipes , using 50 mm dia for verticals at 1.60 mtr c/c fixed to the ramps or steps by drilling with bolts and 100 mm dia MS base plate 10 guage for fixing vertical pipes 4 .nos anchor bolts and 40 mm dia pipes fixed horizontally for 2 rows top and one pipe fixed with vertical pippes another one fixed with elbows and 25mm dia pipes are fixed horizontally for 2 rows below top measure at equal intervals including cutting ,welding ,bending wherever necessary with suitable caps at tops ,bottoms and corners finishing with mat /shining etc.complete including cost and conveyance of all materials ,labourfor all items of work ,HOM of equipment with all lead and lift ,loading and unloading ,transportation chargesand all other incidental charges etc,complete as per specification and directions of the Engineer .in .charge of the work Third floor	SMT	12.5		
Civil 131	Providing and Fixing 304 grade stainless steel hand rails of 14 guage pipes for ramps staircase madeout of stainless steel hollow pipes , using 50 mm dia for verticals at 1.60 mtr cc fixed to the ramps or steps by drilling with bolts and 100 mm dia MS base plate 10 guage for fixing vertical pipes 4 .nos anchor bolts and 40 mm dia pipes fixed horizontally for 2 rows top and one pipe fixed with vertical pippes another one fixed with elbows and 25mm dia pipes are fixed horizontally for 2 rows below top measure at equal intervals including cutting ,welding ,bending wherever necessary with suitable caps at tops ,bottoms and corners finishing with matorshining etc.complete including cost and conveyance of all materials ,labourfor all items of work ,HOM of equipment with all lead and lift ,loading and unloading ,transportation chargesand all other incidental charges etc,complete as per specification and directions of the Engineer .in .charge of the work terrace floor	SMT	12		
Civil 133	PLASTERING WORKS: Providing 12mm thick cement plaster ceiling in single coat with cement mortar 1:4 to ceiling including with smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND FLOOR	SMT	305		
Civil 134	Providing 12mm thick cement plaster ceiling in single coat with cement mortar 1:4 to ceiling including with smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	SMT	330		

Civil 135	Providing 12mm thick cement plaster ceiling in single coat with cement mortar 1:4 to ceiling including with smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SMT	305		
Civil 136	Providing 12mm thick cement plaster ceiling in single coat with cement mortar 1:4 to ceiling including with smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	SMT	298		
Civil 137	Providing 12mm thick cement plaste rceiling in single coat with cement mortar 1:4 to ceiling including with smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . TERRACE FLOOR	SMT	20		
Civil 138	Providing 18 mm thick cement plaster inside in single coat with cement mortar 1:6to brick masonry including rounding off corners wherever required smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . GROUND	SMT	690		
Civil 139	Providing 18 mm thick cement plaster inside in single coat with cement mortar 1:6to brick masonry including rounding off corners wherever required smooth rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	SMT	715		
Civil 140	Providing 18 mm thick cement plaster inside in single coat with cement mortar 1:6to brick masonry including rounding off corners wherever required smooth lime rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SMT	690		

Civil 141	Providing 18 mm thick cement plaster inside in single coat with cement mortar 1:6 to brick masonry including rounding off corners wherever required smooth rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge .THIRD FLOOR	SMT	715		
Civil 142	Providing 18 mm thick cement plaster inside in single coat with cement mortar 1:6 to brick masonry including rounding off corners wherever required smooth rendering, : Providng and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.TERRACE FLOOR	SMT	80		
Civil 143	Providing 18mm thick cement plaster in single coat with cement mortar 1:6 to brick masonry including water proof compound providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. External surface with sponge finish .GROUND FLOOR	SMT	340		
Civil 144	Providing 18mm thick cement plaster in single coat with cement mortar 1:6 to brick masonry including water proof compound providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. External surface with sponge finish .FIRST FLOOR	SMT	430		
Civil 145	Providing 18mm thick cement plaster in single coat with cement mortar 1:6 to brick masonry including water proof compound providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. External surface with sponge finish .SECOND FLOOR	SMT	340		
Civil 146	Providing 18mm thick cement plaster in single coat with cement mortar 1:6 to brick masonry including water proof compound providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. External surface with sponge finish.THIRD FLOOR	SMT	430		
Civil 147	Providing 18mm thick cement plaster in single coat with cement mortar 1:6 to brick masonry including water proof compound providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. External surface with sponge finish. Terrace FLOOR	SMT	400		

Civil 148	Providing rough cement plastering 15mm thick in singlecoat with cement mortar 1:4 to brick masonry for base of dadoing works with sand of approved quality,: Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	SMT	110		
Civil 149	Providing rough cement plastering 15mm thick in singlecoat with cement mortar 1:4 to brick masonry for base of dadoing works with sand of approved quality,: Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	SMT	126		
Civil 150	Providing rough cement plastering 15mm thick in singlecoat with cement mortar 1:4 to brick masonry for base of dadoing works with sand of approved quality,: Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	SMT	110		
Civil 151	Providing rough cement plastering 15mm thick in singlecoat with cement mortar 1:4 to brick masonry for base of dadoing works with sand of approved quality,: Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .THIRD FLOOR	SMT	126		
Civil 152	Providing and fixing plaster mesh 150mm wide manufactured out of hot dipped galvanised iron of nominal thickness 0.35mm with a zinc coating of 120gms per Sqm width, along route of walls chipped for services, junction between RCC and brick walls including cost of materials, labour for fixing, complete as per specifications.length of mesh only be measured for payment The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	Rmt	1575		
Civil 153	Providing and laying cinder concrete in cement 1:15 1 cement : 15 cinder of 12.5mm nominal gauge on terraced roof or sunken slabs, laid to slope compacting, including cost of materials, labour, curing complete as per specifications.	CUM	35		

Civil 154	Providing and applying water proofing to roof slab, terraces, landscape area, podium etc., using modified polyurethane cures conforming to ASTM C836 .84 to give a tough elastomeric waterproof membrane on the surface. The surface shall be cleaned free from dust and other particle before usage. standards and methodology : This compound has a medium viscosity grade with 620 percentage of elongation and shall be done either by roller application or brush application or spray. This will be applied for a thickness of 1.3mm first layer 0.5mm and 2nd layer 0.8mm. After applying the 2nd layer sand sprinkle shall be done to provide mechanical key.	SMT	310		
Civil 155	Providing waterproffing treatement to the sunken portion of toilet. Providing 15mm thick cement plaster in single coat with cement mortar 1:3, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.Extra for providing and mixing waterproofing compound in cement plaster work at one kg per bag or in the proportion recommended by the manufacturers, for cement mortar 1:3, 12mm thick cost of materials complete as per specifications Providing floating coat of cement to plastering and finishing smooth, including cost of materials, labour, curing complete as per specifications.	SMT	125		
Civil 156	Providing and laying the integral cement based water proofing treatment including preparation of surfaces as required for treatment of roofs ,balconies,terraces etc.consisting of following application.9a. applying and grouting a slurry coat of neat cement using 2.7kg per sqm of cement admixed with proprietary water proofing compound confirming to IS:2645 over the RCC slab after clening the surface before treatment.b Laying cement concrete using broken brick bats 25mm to 100mm size with 50percentage of cement mortar 1:5 admixed with proprietary water proofing compound to required slope and treating similarly the adjoining walls upto 300mm height including rounding off junctions of walls and slabs .c After two days of proper curing ,applying a second coat of cement slurry admixed with proprietary water proofing compound.d Finishing the surface with 20mm thick joint less cement mortar of mix 1:4 admixed with proprietary water proofing compound and finally finishing the surface with trowel and neat cement slurry and making 300 X 300 mm square.e The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test including cost of materials ,labour complete as per specifications .	SMT	325		
Civil 157	providing and laying in position yelahanka tiles of size 250 X120 mm or 250x250mm rectangle shape of approved quality and make ,over a bed of cement mortar 1:3 an average thickness 25mm over weather proof course and pointed with cement mortar 1:3 mix with red oxide including curing cost of materials loading , unloading , lift and other incidental charges. , labour complete as per specifications . Terrace area	SMT	300		



Civil 160	TILE WORKS .Providing and laying flooring 40 mm thick, with an under layer of 30mm thick M .15 ,1:2:4 cement concrete, using broken granite metal of 12.5mm nominal size and top layer of 10mm thick plaster with cement mortar 1:3, finished with floating coat of neat cement , including cost of materials, labour, curing, complete as per specifications . GROUND FLOOR	SMT	125		
Civil 161	Providing and fixing for flooring 20mm gangsaw water cut sadarhalli grey granite in CM 1:4 proportion ,cut to required shape, pattern with paper joints ,finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant ,grooves in joints including cost of including cost of all materials ,mortar,labour ,curing etc..., complete as per specification. with minimum width of 1200mm . GROUND FLOOR	SMT	280		
Civil 162	Providing and fixing for flooring 20mm gangsaw water cut sadarhalli grey granite in CM 1:4 proportion ,cut to required shape, pattern with paper joints ,finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant ,grooves in joints including cost of including cost of all materials ,mortar,labour ,curing etc..., complete as per specification. with minimum width of 1200mm . FIRST FLOOR	SMT	55		
Civil 163	Providing and fixing for flooring 20mm gangsaw water cut sadarhalli grey granite in CM 1:4 proportion ,cut to required shape, pattern with paper joints ,finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant ,grooves in joints including cost of including cost of all materials ,mortar,labour ,curing etc..., complete as per specification. with minimum width of 1200mm . SECOND FLOOR	SMT	280		
Civil 164	Providing and fixing for flooring 20mm gangsaw water cut sadarhalli grey granite in CM 1:4 proportion ,cut to required shape, pattern with paper joints ,finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant ,grooves in joints including cost of including cost of all materials ,mortar,labour ,curing etc..., complete as per specification. with minimum width of 1200mm . THIRD FLOOR	SMT	55		
Civil 165	Providing and fixing for flooring 20mm gangsaw water cut sadarhalli grey granite in CM 1:4 proportion ,cut to required shape, pattern with paper joints ,finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant ,grooves in joints including cost of including cost of all materials ,mortar,labour ,curing etc..., complete as per specification. with minimum width of 1200mm . TERRACE FLOOR	SMT	7		

Civil 166	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications.GROUND FLOOR	SMT	15		
Civil 167	Providing and fixing Vitrified glazed tiles of approved make,quality and colour of size 600 x 600x10mm thick fixed on a bed of 12mm thick cement mortar for flooring,skirting and jointed with neat cement slurry mixed with pigment to mach shade of tiles,including providing spacers at required interval and removing stains etc; complete as per specification. FIRST FLOOR Joints to be epoxy filling	SMT	215		
Civil 168	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications. GROUND FLOOR	SMT	15		
Civil 169	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications. FIRST FLOOR Joints to be epoxy filling	SMT	23		
Civil 170	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications.SECOND FLOOR	SMT	15		
Civil 171	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications. THIRD FLOOR .Joints to be epoxy filling	SMT	23		
Civil 172	Providing Ceramic tiles of approved make, shade and size 30x30 cms 6mm thick for flooring, treads of steps and landings laid on a bed of 12mm thick, cement mortar 1:3 mix, flush pointing with white cement using colour pigment, including cost of materials, labour, curing, complete as per specifications.TERRACE FLOOR	SMT	8		

Civil 173	Providing skirting, dado, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . colour glazed tiles 30x45cms 6mm thick with border of size 30x10cm . GROUND FLOOR	SMT	19		
Civil 174	Providing skirting, dado, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . colour glazed tiles 30x45cms 6mm thick with border of size 30x10cm . FIRST FLOOR	SMT	41		
Civil 175	Providing skirting, dado, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . colour glazed tiles 30x45cms 6mm thick with border of size 30x10cm .SECOND FLOOR	SMT	19		
Civil 176	Providing skirting, dado, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,.and work shall be carried out as per the technical specifications and instructions of Engineer in charge . colour glazed tiles 30x45cms 6mm thick with border of size 30x10cm.THIRD FLOOR	SMT	41		

Civil 177	Providing skirting, dado, rises of steps with colour glazed tiles 6mm thick on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . colour glazed tiles 30x45cms 6mm thick with border of size 30x10cm.TERRACE FLOOR	SMT	20		
Civil 178	Providing and fixing of wall cladding using 20mm thick gang saw water cut grey granite in CM 1;3 proportion cut to required shape pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealent,making holes 25mmx12mm grooves in joints including curing etc, complete The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	SMT	204		
Civil 179	Providing and fixing of wall cladding using 20mm thick gang saw water cut grey granite in CM 1;3 proportion cut to required shape pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealent,making holes 25mmx12mm grooves in joints including curing etc, complete The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	SMT	95		
Civil 180	Providing and fixing of wall cladding using 20mm thick gang saw water cut grey granite in CM 1;3 proportion cut to required shape pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealent,making holes 25mmx12mm grooves in joints including curing etc, complete The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge .SECOND FLOOR	SMT	204		
Civil 181	Providing and fixing of wall cladding using 20mm thick gang saw water cut grey granite in CM 1;3 proportion cut to required shape pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealent,making holes 25mmx12mm grooves in joints including curing etc, complete The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge.THIRD FLOOR	SMT	95		

Civil 182	Providing and fixing of wall cladding using 20mm thick gang saw water cut grey granite in CM 1;3 proportion cut to required shape pattern with paper joints, finished with cement mortal using white cement and colour pigments to match the colour of slab making through jointing with sealant,making holes 25mmx12mm grooves in joints including curing etc, complete The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge.TERRACE FLOOR	SMT	12		
Civil 183	Providing and laying pattern flooring for staircase treads and risers using the combination of 20mm thick Ruby red or Kanakapura multi colour or illakal granite threads at 66percentage ,20 mm thick grey granite at 20percentage , 20mm thick Shiva gold granite 7percentage , 20mm thick black granite Risers 7percentage . The granite materials are laid on existing bed of CM 1:3 20mm thick pointed with colour pigment, including full rounding for nosing, flaming the ruby red granite for 50 mm wide curing etc., complete. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge,GROUND FLOOR	SMT	35		
Civil 184	Providing and laying pattern flooring for staircase treads and risers using the combination of 20mm thick Ruby red or Kanakapura multi colour or illakal granite threads at 66percentage ,20 mm thick grey granite at 20percentage , 20mm thick Shiva gold granite 7percentage , 20mm thick black granite Risers 7percentage . The granite materials are laid on existing bed of CM 1:3 20mm thick pointed with colour pigment, including full rounding for nosing, flaming the ruby red granite for 50 mm wide curing etc., complete. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge.FIRST FLOOR	SMT	35		
Civil 185	Providing and laying pattern flooring for staircase treads and risers using the combination of 20mm thick Ruby red or Kanakapura multi colour or illakal granite threads at 66percentage ,20 mm thick grey granite at 20percentage , 20mm thick Shiva gold granite 7percentage , 20mm thick black granite Risers 7percentage . The granite materials are laid on existing bed of CM 1:3 20mm thick pointed with colour pigment, including full rounding for nosing, flaming the ruby red granite for 50 mm wide curing etc., complete. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge.SECOND FLOOR	SMT	35		

Civil 186	Providing and laying pattern flooring for staircase treads and risers using the combination of 20mm thick Ruby red or Kanakapura multi colour or illakal granite threads at 66percentage ,20 mm thick grey granite at 20percentage , 20mm thick Shiva gold granite 7percentage , 20mm thick black granite Risers 7percentage . The granite materials are laid on existing bed of CM 1:3 20mm thick pointed with colour pigment, including full rounding for nosing, flaming the ruby red granite for 50 mm wide curing etc., complete. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	SMT	35		
Civil 187	Providing and laying pattern flooring for staircase treads and risers using the combination of 20mm thick Ruby red or Kanakapura multi colour or illakal granite threads at 66percentage ,20 mm thick grey granite at 20percentage , 20mm thick Shiva gold granite 7percentage , 20mm thick black granite Risers 7percentage . The granite materials are laid on existing bed of CM 1:3 20mm thick pointed with colour pigment, including full rounding for nosing, flaming the ruby red granite for 50 mm wide curing etc., complete. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge .TERRACE FLOOR	SMT	35		
Civil 188	Providing and fixing granite flooring in combination of 19mm thick Avg gang saw water cut LAKARED granite with 86percentage and with 14percentage of 19mmthick avg black granite in CM 1;4 proportion with a coat of rough plastering using CM 1;4 cut to the required shape,pattern wih paper joints, finished with cement mortor using white cement and colour pigments to match the colour of the slab making through jointing with sealent,groovesin the joints including the cost of curing etc complete including cost of conveyance of all materials labour for all items of work, HOMof equipments etc, complete asper specification The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.GROUND FLOOR	Sqm	24		
Civil 189	Providing and fixing granite flooring in combination of 19mm thick Avg gang saw water cut LAKARED granite with 86percentage and with 14percentage of 19mmthick avg black granite in CM 1;4 proportion with a coat of rough plastering using CM 1;4 cut to the required shape,pattern wih paper joints, finished with cement mortor using white cement and colour pigments to match the colour of the slab making through jointing with sealent,groovesin the joints including the cost of curing etc complete including cost of conveyance of all materials labour for all items of work, HOMof equipments etc, complete asper specification The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . FIRST FLOOR	Sqm	25		

Civil 190	Providing and fixing granite flooring in combination of 19mm thick Avg gang saw water cut LAKARED granite with 86percentage and with 14percentage of 19mmthick avg black granite in CM 1;4 proportion with a coat of rough plastering using CM 1;4 cut to the required shape,pattern wih paper joints, finished with cement mortor using white cement and colour pigments to match the colour of the slab making through jointing with sealent,groovesin the joints including the cost of curing etc complete including cost of conveyance of all materials labour for all items of work, HOMof equipments etc, complete asper specification The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .SECOND FLOOR	Sqm	24		
Civil 191	Providing and fixing granite flooring in combination of 19mm thick Avg gang saw water cut LAKARED granite with 86percentage and with 14percentage of 19mmthick avg black granite in CM 1;4 proportion with a coat of rough plastering using CM 1;4 cut to the required shape,pattern wih paper joints, finished with cement mortor using white cement and colour pigments to match the colour of the slab making through jointing with sealent,groovesin the joints including the cost of curing etc complete including cost of conveyance of all materials labour for all items of work, HOMof equipments etc, complete asper specification The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.THIRD FLOOR	Sqm	24		
Civil 192	Providing and fixing granite flooring in combination of 19mm thick Avg gang saw water cut LAKARED granite with 86percentage and with 14percentage of 19mmthick avg black granite in CM 1;4 proportion with a coat of rough plastering using CM 1;4 cut to the required shape,pattern wih paper joints, finished with cement mortor using white cement and colour pigments to match the colour of the slab making through jointing with sealent,groovesin the joints including the cost of curing etc complete including cost of conveyance of all materials labour for all items of work, HOMof equipments etc, complete asper specification The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.TERRACE FLOOR	Sqm	15		
Civil 193	Providing and fixing cement based ,pre cast pre polished cement concrete designer tiles 25mm thick for flooring confirming to IS 1237 heavy duty tiles for flooring ,treads of steps and landing ,laid in abed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement ,including cost of materials ,mortar,including cutting, grinding the edge to half OR full round wherever required, labour ,curing complete as per specification. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	Sqm	210		

Civil 194	Providing and laying heavy duty Cobble stone 75 mm thick interlock pavers ,using cement and course sand for manufacture of blocks of approved size,shape and colour with a minium compressive strength of 281 kg per sqm over 50mm thick sand bed average thickness and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints,final compaction of pavers surface joints into its final levl , including cost of materials ,labour and HOM of machineries complete as per specifications .GROUND FLOOR	Sqm	220		
Civil 195	Providing and fixing pre cast solid concrete Kerb stone made out of CC1:2:4 with top and bottom width 114 and 165 mm respectively .400 mm high and 450 mm in length finished in Cm 1:3 plastering and finishing cutting,including form work ,curing,including cost of all materials ,labour,hire charges of machinery,loading ,unloading, lead and lift ,transportatio, etc., complete The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.GROUND FLOOR	Nos	470		
Civil 197	PAINTING WORKS: Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scraping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc; complete as per the specification. Area toi be considered .a 100percentage for fresh surface The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.GROUND FLOOR	Sqm	995		
Civil 198	Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scraping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc; complete as per the specification. Area toi be considered .a 100percentage for fresh surface The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.FIRST FLOOR	Sqm	1045		
Civil 199	Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scraping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc; complete as per the specification. Area toi be considered .a 100percentage for fresh surface The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .SECOND FLOOR	Sqm	995		



Civil 200	Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scraping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc; complete as per the specification. Area to be considered . a 100percentage for fresh surface The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .THIRD FLOOR	Sqm	1013		
Civil 201	Providing applying two coats of wall putty to inside plastered walls and ceiling using white cement putty. scraping and levelling the surface using steel blade and preparing the surface even and smooth by using different grade sand papers, including cost of all materials, cost of labour and scaffolding etc; complete as per the specification. Area to be considered . a 100percentage for fresh surface The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .TERRACE FLOOR	Sqm	100		
Civil 202	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on wall surface to given an even approved shade after thoroughly brushing the surface,free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour , complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.GROUND FLOOR	Sqm	690		
Civil 203	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on wall surface to given an even approved shade after thoroughly brushing the surface,free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour , complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	Sqm	715		
Civil 204	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on wall surface to given an even approved shade after thoroughly brushing the surface,free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour , complete as per specifications. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge .SECOND FLOOR	Sqm	690		

Civil 205	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on wall surface to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge .THIRD FLOOR	Sqm	715		
Civil 206	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on wall surface to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.TERRACE FLOOR	Sqm	80		
Civil 207	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on ceiling and or sloping roof to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge .GROUND FLOOR	Sqm	305		
Civil 208	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on ceiling and or sloping roof to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge.FIRST FLOOR	Sqm	330		
Civil 209	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on ceiling and or sloping roof to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge .SECOND FLOOR	Sqm	305		

Civil 210	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on ceiling and or sloping roof to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. THIRD FLOOR	Sqm	298		
Civil 211	Providing and applying painting in two coats with plastic emulsion paint with primer of approved brand on ceiling and or sloping roof to given an even approved shade after thoroughly brushing the surface, free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. TERRACE FLOOR	Sqm	20		
Civil 212	Providing and finishing external walls in two coats over one coat of 100percentage acrylic silicon glazed primer with antifungal paint for top coat of approved brand and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. GROUND FLOOR	Sqm	340		
Civil 213	Providing and finishing external walls in two coats over one coat of 100percentage acrylic silicon glazed primer with antifungal paint for top coat of approved brand and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. FIRST FLOOR	Sqm	430		

Civil 214	Providing and finishing external walls in two coats over one coat of 100percentage acrylic silicon glazed primer with antifugal paint for top coat of approved brand and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour,complete as per specifications. The rate shall be inclusive of all taxes and GST etc.,and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . SECOND FLOOR	Sqm	340		
Civil 215	Providing and finishing external walls in two coats over one coat of 100percentage acrylic silicon glazed primer with antifugal paint for top coat of approved brand and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour,complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge . THIRD FLOOR	Sqm	430		
Civil 216	Providing and finishing external walls in two coats over one coat of 100percentage acrylic silicon glazed primer with antifugal paint for top coat of approved brand and shade to give an even shade after thoroughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour,complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .TERRACE FLOOR	Sqm	400		
Civil 217	Providing and applying enamel metal paint two coats excluding priming coat over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.GROUND FLOOR	Sqm	46		
Civil 218	Providing and applying enamel metal paint two coats excluding priming coatover new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge .FIRST FLOOR	Sqm	54		

Civil 219	Providing and applying enamel metal paint two coats excluding priming coat over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. SECOND FLOOR	Sqm	46		
Civil 220	Providing and applying enamel metal paint two coats excluding priming coat over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. THIRD FLOOR	Sqm	54		
Civil 221	Providing and applying enamel metal paint two coats excluding priming coat over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge. TERRACE FLOOR	Sqm	4		
Civil 222	Applying red lead ready mix priming coat over new steel or other metal surface including preparing the surface after thoroughly cleaning oil, grease, dirt and other foreign matter, and scoured with wire brushes, fine steel wool, sand papers including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per the technical specifications and instructions of Engineer in charge. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	Sqm	104		
Civil 223	Providing and applying painting two coats including primer coat on new wood surface and or wood base surface with enamel paint to give even shade, cleaning the surface of all dirt, dust and foreign matter, sand papering. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	Sqm	70		
Civil 224	Providing and fixing 100mm wide venetian blinds of window fashion fabric of Taiwan make, with 50mm thick powder coated channel with balance, imported, acrylic self alignable mechanism and equally spaced spacers etc., imported tilting mechanism for easy tilting operation, with nylon imported thread and beadings, 100mm wide imported washable reusable fabric placed with top hanger etc., with all lead and lifts etc, complete as per specifications and directions of Engineer Incharge. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge	Sqm	425		

Civil 225	Providing and fixing in position as per the architect drawing electronic access control for all the doors . The material is to be procured after getting approval from the architect . Benzoville brand model no: BV .LEL .028847 The rate shall be inclusive of all taxes and GST etc,. and work shall be carried out as per the technical specifications and instructions of Engineer in charge.	Nos	4		
Civil 226	providing and fixing of Butch work cladding tiles of approved shade and size k on 12mm thick cement plaster 1 is to 3 and jointed with the required groutting material over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using butch work tiles of approved make and size including cost of materials, labour, complete as per specification. The rate shall be inclusive of all taxes and GST etc., and work shall be carried out as per technical specification and instruction of engineer in charge FIRST FLOOR	SMT	168		
Civil 227	Providing and fixing of Butch work cladding tiles of approved shade and size k on 12 mm thick cement plaster 1:3 and jointed with the required groutting material over rough plaster surface excluding cost of rough plastered surface which should be measured and paid separately using butch work tiles of approved make and size including cost of materials, labour, complete as per specifications. The rate shall be inclusive of all taxes and GST etc, and work shall be carried out as per the technical specifications and instructions of Engineer in charge .THIRD FLOOR	SMT	168		
Civil 228	Providing and fixing of stick type structural glazing using alluminium extrusions of 63.5mmX58.00 mmX2.25mm of 1.73 Kgs or mtr of vertical and horizontal members and 63.5mmX38.1X1.33 mm of 0.759 kg per mtr ,as outer frame with electro Anodized paint coated block finishing ,using 6mm thick imported glass reflective hard coated mirror finish raw glass with all necessary accessories like ultra glass ,silicon sealant of space tape,masking tape ,galvanized anchor bolt ,machine screws,6mm thick MS angle 50mmX150mmX6mm MS galvanized brackets ,structural sealant setting clocks,fasteners,wall connection etc., complete	SMT	86		
Civil 229	Providing and fixing to wall ,ceiling and floor unplasticised PVC 6.00 kgs per sqcm working pressure with pipe fittings, wall clips etc and making good the wall, ceiling and floor for sanitary pipelines including cost of all materials,Labour charges,HOM and testing complete as per specification.110mm dia for Rain water pipes	Rmt	650		
PHE 1	Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in hard soil depth not exceeding 1.5 m. in depth including lead ,lift transportation and other incidental charges , dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications.	Cum.	185		

PHE 2	Providing and fixing of square mouth gully trap complete with CI grating PVC gully trap over a bed of 75mm thick PCC 1:4:8 and fixing of 300 x 300mm size CI frame and cover. The quoted rate should include for necessary excavation in all sorts of soil, returning, filling, ramming and connecting to chamber etc., complete.	nos	4		
PHE 3	Constructing brick masonry inspection chamber 450mmX450mmmm, and 450mm depth, clear inside dimension for single pipeline, using table moulded non .modular bricks of class designation 50 in cement mortar 1:5, C.I cover with frame light duty 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg weight of cover 23kg and weight of frame 15 kg R.C.C. top slab with cement concrete 1:2:4 mix 20mm and downsize granite metal, foundation concrete 1:5:10 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finish smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications.	Nos	4		
PHE 4	Constructing brick masonry inspection chamber 600x600mm, and 750mm depth, clear inside dimension for single pipeline, using table moulded non .modular bricks of class designation 50 in cement mortar 1:5, C.I cover with frame light duty 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg weight of cover 23kg and weight of frame 15 kg R.C.C. top slab with cement concrete 1:2:4 mix 20mm and downsize granite metal, foundation concrete 1:5:10 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finish smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications.	Nos	2		
PHE 5	Construction brick masonry circular type manhole 1.22m internal dia at bottom 2.29m deep and 0.56m dia at top, with table moulded and non modular bricks of class designation 50 in cement mortar 1:4, inside cement plaster 12mm thick with cement mortar 1:3 finished with a floating coat of neat cement, foundation concrete M 10 using 40mm and down size granite metal and making necessaru channel in cement concrete M 15 with 20mm and down size granite metal,finished with a floating coat of neat cementm with S.F.R.C cover and frame heavy duty, HD .20 grade designation 560mm internal diameter confirming to IS : 12592, total weight lenght of cover and frame to be not ledd than 182 kg. fixed in cement concrete M 15 20mm and down size broken granite metal, providing and removing centering, shuttering incuding cost of materials, labour charges, HOM of machineries complete as per specification. Excavation, footrests and 12mm thick cement plaster on the external surface shall be paid separately	nos	1		

PHE 6	Providing and fixing Chlorinated Poly Vinyl Chloride CPVC pipes conforming to IS 15778, having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamp at 1.00 mtr spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete. Internal work exposed on wall 20 mm dia	Rmt.	75		
PHE 7	25 mm dia	Rmt.	45		
PHE 8	32 mm dia	Rmt.	30		
PHE 9	40 mm dia	Rmt.	25		
PHE 10	a. Providing and fixing in position brass gate valve with C.I wheel of approved quality screwed end 15mm nominal bore including cost of all materials, labour and HOM of equipments with all leads complete as per specifications.20 mm dia	Nos	12		
PHE 11	b. 25 mm dia	Nos	8		
PHE 12	c.32 mm dia	Nos	6		
PHE 13	d.40 mm dia	Nos	4		
PHE 14	Providing and fixing in position 25mm nominal bore non .return valve vertical type of approved make including cost of all materials, labour and HOM of equipments with all leads complete as per specifications 40mm nominal dia	Nos	2		
PHE 15	32mm nominal dia	Nos	4		
PHE 16	Providing and fixing water meter with stop cock, jam nut, socket in G.I pipe line including cutting and threading the pipe and making long screws including cost of all materials, labour, HOM of equipments and testing complete as per specifications 25mm nominal dia Domestic Treated Water Supply .	Nos	2		
PHE 17	Supply, installing, testing and commissioning of approved make water level controller for the UG sump and OHT. Complete Water transfer from Municipal water UG sump to OHT	Set	1		
PHE 18	Supplying, installing, testing and commissioning of approved make Chlorinated Polyvinyl Chloride pipes CPVC SDR.11, ASTM CTS, The fittings and specials such as tees, elbows, couplers, bends, enlargers etc., with CPVC brass threaded combination or transition specials such as male adapters brass threaded female adapters, brass FPT Tee, Brass FPT elbow etc., where connection with metal is to be made including necessary drilling holes, chasing walls and making the same good in cement mortar 1:1 restore the same original condition neatly as directed by the Engineer in .charge. Joints to be made with CPVC solvent cement as per ASTM D .2846. Etc external works 20 mm dia	Rmt.	25		
PHE 19	25 mm dia	Rmt.	75		



PHE 20	Construction of valve chamber with 230 mm best quality TM bricks in CM 1:4 over a bed of 100mm thick PCC1:4:8, internal walls plastered smooth in CM 1:3 and external walls plastered rough with sponge finish including curing with all necessary leads and lift and providing heavy duty cast iron cover with frame with locking arrangements etc., complete including Heavy duty cast iron cover of size 600 x 600 weight 115Kgs. Size of chambers	No.	1		
PHE 21	Providing, fixing, testing and commissioning of openwell submersible pump of adequate HP, capable of giving the required discharge at suitable head to work on 3Ph, 50Hz, 400 or 440V for complete automatic operation, non return valve, Butterfly valve or ball valve, necessary unions, flanges etc, complete. The Body of pump : CI, Impeller .CI, Delivery Casing . CI, Mounting casing : CI, Shaft : Cast steel. Make: Kirloskar, CRI, KSB or equivalent From Domestic water sump to Domestic overhead tanks 1 working + 1 standby = 1 set Duty : 1.8 lps at 50m head	Set	1		
PHE 22	Supplying, installing, testing and commissioning of white glazed wall hung European water closet with concealed cistern tank with necessary bend, check nut, stopcock etc., solid seat and cover with polythene buffers and flap, CP flanges, CP bolts and nuts, a pair of CI chair bracket with nuts and bolts etc., complete. Make : Jaquar Florentine Model no : FLS .WHT .5951 : Jaquar cisterns .WHT .2400WS plates Make : Jaquar Flush Model no : JCP .CHR .152415	Nos.	4		
PHE 23	Supplying, fixing of 110mm dia straight type straight syphon U PVC WC pan connector with neoprene rubber ring and necessary accessories etc., complete.	Nos.	4		
PHE 24	Supplying, installing, testing and commissioning of oval white glazed wash basin below counter type, 32mm dia CP waste coupling, 32mm dia. CP bottle trap with extension pipe pair of stainless steel bolts, with MS bracket to support the basin, 1 No. 15mm CP pillar cock with sensor operated, 15mm CP angle valve with 450mm long heavy duty CP inlet connecting pipe, CP wall flanges, 1 no. all of approved make etc., complete. Counter shall be supplied by the other agency Make : Jaquar Model no : CNS .WHT .705 Make : AOS System Battery operated Sensor	Nos.	10		

PHE 25	Supply and Installing, Testing and Commissioning of white glazed flat back large Urinal Sensor Type with 50mm dia CP waste coupling with dome type grating, 40mm dia CP bottle trap / inbuilt bottle trap type with extension pipe, SS bolts and nuts to fix the urinal with all hangers and brackets etc complete. Make : Jaquar Model no : URS .WHT .13259 Sensor Make : AOS Systems Battery operated	Nos.	2		
PHE 26	Supplying, installing and testing 15mm CP health faucet and angular stop cock of approved make with necessary CP flexible hose 1000mm long nozzle, CP wall flange complete. Make : Jaquar Allied Model No : ALD .565	Nos.	12		
PHE 27	Supplying, installing, testing and commissioning stainless steel sink with Double bowl and single drain board manufactured from 8mm thick stainless steel, 18G high grade indestructable chromenickel steel with top quality polish, 2 no 40mm dia CP waste coupling, with 2 no. 40mm dia CP bottle trap with extension pipe, 15mm dia. sink cock swinging type wall mounted unit and necessary wall flanges etc., complete. Make : Nirali Model : Graceful elegance	Nos.	10		
PHE 28	Supplying and installing CP toilet paper holder fixed with SS screws complete. Make : Jaquar Continental Model No : ACN .1153N	Nos.	12		
PHE 29	Providing and fixing to wall, ceiling and floor medium density polyethylene pipes 6.00 kg fper sq.cm working pressure 32mm outside diameter raising mains and exposed distribution pipes with special flange, compression type fittings, wall clips, making good the wall, ceiling and floor, including cost of all materials, labour charges, HOM of equipments and testing complete as per specifications. for soil pipe 40mm dia Internal dia.	Rmt	40		
PHE 30	50mm dia Internal dia	Rmt	25		
PHE 31	Providing and Fixing unplasticised PVC pipes with working Pressure 10 Kg/sq.cm with pipe fittings, clips, amking good the floor, including cost of all materials, labour charges, HOM and testing complete as per specification for sanitary line 90 mm dia Clear OD	Rmt	80		
PHE 32	110mm dia Clear OD	Rmt	60		
PHE 33	160mm dia clear OD	Rmt	95		
PHE 34	Supplying, fixing and testing PVC rain water collection kurra with leaf trap grating made out of UPVC with flange complete. 160mm dia	Nos.	5		
PHE 35	Supplying, installing, testing and commissioning of PVC floor trap with 110mm dia inlet and 75mm dia. outlet fixed on a bed of cement concrete with 150 x 150mm stainless steel hinged type frame Heavy duty type etc., complete. The frame and grating shall be approved by Architects	Nos	20		

PHE 36	Drilling with core cutting machine in RCC beams, slabs floors etc., for laying pipes and rendering the same in RCC 1:2:4, finishing the same to the satisfaction of the owner or his authorized representative etc., including nominal reinforcement wherever required, complete. The quoted rate shall also include for providing EPOXY based water proofing compound for sealing the joints around the pipes. Core cut shall be done using rebar detector Depth shall be 175 mm RCC beams .25mm dia upto 50 mm dia	Nos	4		
PHE 37	RCC beams 65mm dia upto 110 mm dia	Nos	2		
PHE 38	RCC beams 125mm dia upto 160 mm dia	Nos	2		
PHE 39	RCC slabs 25mm dia upto 50 mm dia	Nos	2		
PHE 40	RCC slabs 65mm dia upto 110 mm dia	Nos	2		
PHE 41	RCC slabs 125mm dia upto 160 mm dia	Nos	2		
PHE 42	RCC walls 25mm dia upto 50 mm dia	Nos	2		
PHE 43	RCC walls 65mm dia upto 110 mm dia	Nos	3		
PHE 44	RCC walls 125mm dia upto 160 mm dia	Nos	2		
PHE 45	Stone Masonry walls 25mm dia upto 50 mm dia	Nos	2		
PHE 46	Stone Masonry walls 65mm dia upto 110 mm dia	Nos	2		
PHE 47	Stone Masonry walls 125mm dia upto 160 mm dia	Nos	2		
PHE 48	Rain water harvesting pits A 600 mm diameter well is dug to a depth of 6 .8 feet to which a concrete rings of 600mm diameter of height 2'0" is inserted to the same.with the mentioned layers respectively as mentioned, in the figure below .	Nos	4		
ELE 1	Supplying heavy gauge PVC conduit pipe .....mm dia .....mm thick confirming to IS 2509 with suitable size bends, metal/PVC junction boxes, adhesive paste etc., and running before concreting the slab. The conduit should be tied to the reinforcement rods by using binding wires and unused ways of junction boxes and pipe ends should be covered using PVC end enclosures, run with 18SWG GI fish wire wherever necessary . a 19or 20mm dia 2mm thick P .2,i .1.2.1	Mtr	420		
b	25mm dia 2mm thick P .2,i .1.2.2	Mtr	510		
c	32mm dia 2.5mm thick P .2,i .1.2.3	Mtr	440		
ELE 2	Supplying and fixing of PVC casing and capping on the wall or ceiling using necessary materials like bends, screws at an interval of 300mm .... etc. as required.P .3,i .1.8 . A 20mmP .3,i .1.8.1	Mtr	280		
b	25mmP .3,i .1.8.2	Mtr	200		
c	50mmP .3,i .1.8.5	Mtr	200		
ELE 3	Supplying PVC or GI flexible conduit pipe...mm dia fixing on surface over inverted tapered wooden plugs or phill plugs or rawl plugs and clamped using heavy gauge saddles at an interval of 300mm using NF screws and on either end of the pipe terminated completely . a 20mmP .3,i .1.9.1	Mtr	100		
b	25mmP .3,i .1.9.2	Mtr	110		
c	50mmP .3,i .1.9.5	Mtr	45		

ELE 4	Extra for Groove cutting in brick wall or CC floor to the suitable depth for concealing of Conduit or GI pipe and plastering, finishing upto wall surface complete. P .3,i .1.7 . a upto 50mm conduit in brick wall P .3,i .1.7.1	Mtr	2800		
ELE 5	Supplying and fixing PVC or metal conduit Deep junction box P .2,i .1.5 . A. 19or20mm deep junction box P .2,i .1.5.1	Each	120		
b	25mm deep junction boxP .3,i .1.5.2	Each	60		
ELE 6	Supplying And Fixing "S" Hook made out of 14mm dia M.S.Rod.P .3,i .1.1	No	90		
ELE 7	Point wiring using Copper wire with switch: Supplying and wiring adopting loop system in existing PVC Conduit or casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet or gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. P .5,i .2.1 . GROUP A : a. Short point upto 3Mtr from tapping point to out let via switch P .5,i .2.1.1	Point	150		
b	Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch P .5,i .2.1.2	Point	120		
c	Long point above 6Mtr upto 10Mtr from tapping point to out let via switch P .5,i .2.1.3	Point	180		
ELE 8	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS .694:1990 and confirming to GTP of GROUP .A. P .6,i .2.4.5 . a.1.5 sqmmP .6,i .2.5.2	Mtr.	4650		
b	2.5 sqmmP .6,i .2.5.3	Mtr.	8850		
c	4 sqmmP .6,i .2.5.4	Mtr.	6850		
d	6 sqmm P .6,i .2.5.5	Mtr.	1800		
ELE 9	Supplying and fixing surface/flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick or C.C wall, including necessary rawl plugs, Machine/NF screws etc., complete.P .15,i .3.4 . a 1 .3Way P .15,i .3.4.1	Each	210		
b	4 .5Way P .15,i .3.4.2	Each	340		
c	6 .8Way P .15,i .3.4.3	Each	480		
d	10 .12Way P .15,i .3.4.4	Each	85		
ELE 10	Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nuts etc., complete on the existing metal/PVC box.P .16,i .3.6 . a 1 to 3 Module P .16,i .3.6.1	Each	100		
b	4 Module P .16,i .3.6.2	Each	110		
c	6 Module P .16,i .3.6.3	Each	300		
d	8 Module P .16,i .3.6.4	Each	180		
e	12 module P .16,i .3.6.6	Each	85		

ELE 11	Supplying and fixing of modular switch/ Socket/stepped electronic fan regulator/ dimmer/telephone socket etc on existing modular switch plate as per IS 3854 and IS 1293P .16,i .3.7 . GROUP A : . a 6Amps one way.P .16,i .3.7.1	Each	849		
b	6Amps Two way.P .16,i .3.7.2	Each	110		
c	6Amps 3way socket.P .16,i .3.7.3	Each	700		
d	Stepped Fan Regulator.P .16,i .3.7.4	Each	90		
e	16Amps one way switchP .16,i .3.7.7	Each	200		
f	6Amps Bell pushP .16,i .3.7.8	Each	50		
g	32Amps DP switchP .16,i .3.7.9	Each	120		
h	6/16Amps universal socketP .16,i .3.7.10	Each	200		
ELE 12	FITTING: Supplying of 2' feet . LED PVC Square Batten ..W with high quality diffuser with Life of 25000 burning hours and 70% lumen maintenance with CRI 80. Power Input: 220 .240V at 50Hz and Power factor I 0.9 along with CE approved drivers. 5 years Warranty against any manufacturing defect working under standard electrical conditionP .25,i .4.27.14.29 . a LED light fighting 2' . 14 wattsP .25,i .4.27.14.1	Each	100		
b	LED light fighting 4' . 28 wattsP .25,i .4.27.14.29.2	Each	150		
ELE 13	Supply of recess mounted rolling type LED square or round Down light 12 watts with 4or 6W GU 10 LED Lamp Rib Fabricated from Die cast aluminum with white powder coated prewired to mains connector with suitable driver and having swiveling unit of aluminum die cast eye ball and LED Lamp position retained by circular wire spring. 5 years Warranty against any manufacturing defect working under standard electrical condition. P .25,i .4.31	No	100		
ELE 14	Supply of 2'x2' LED recessed luminaire with ...Watts system wattage. Housing shall be with pressure die cast aluminum alloy with corrosion proof resistant polyester power coated. Driver operates with voltage range from 100V to 270V 50/60 Hz with short circuit, overload and mis .wiring protection. Lumen Maintenance of 70% at 50000 Hrs. Injection moulded poly carbonate diffuser for better mechanical stability, light transmission and avoid pot hole effect. Junction temperature shall be < 70 degree Celsius. Driver is on constant current driver at 0.06A with PF > 0.92 with line voltage at 220 .240V at 50/60Hz, driver efficiency > 85% and THD<15%. LED Efficiency > 130 lm/W at 1W and Fixture Efficiency >75lm/w with CRI > 75 with injection moulded Polycarbonate lens with < 80mm depth. 5 years Warranty against any manufacturing defect working under standard electrical condition . a) LED modular down light 2'x2' .36 watts P .26,i .4.33.2	No	35		
ELE 15	Fixing all types and all capacities of fluorescent or false ceiling or spot light or CFLor LED fittings indoor on the wallor ceilingor raftersor girders using 23/0.0076" twin twisted PVC insulated wires, required Nos of round blocks and clamps.Pg .108,i .17.7 . a On wall or ceiling or Rafter or GirdersPg .108,i .17.7.1	Each	35		

ELE 16	Supplying capacitor type ceiling fan complete with down rod blades, shackle, canopies etc., for operation on 230 volts, 50 cycles. Single phase AC supply conforming to ISS .374 .1979 and with double ball bearing system.Pg .78,i .9.3 . 48" Sweep 1200mm Pg .78,i .9.3.1 . a) Regular model Pg .78,i .9.3.1.1	Each	80		
ELE 17	Fixing a ceiling or wall mounting fan of all capacities and all types, with necessary clamps and 'S' hook made out of 15mm dia MS rod, with 5 amps. ceiling rose of approved quality with necessary length of 23or 0.0076 inch PVC insulated twin twisted wire of approved quality, mounted on a suitable size wooden board and wired. Pg .109,i .17.9	Each	80		
ELE 18	Supplying of 1440rpm heavy duty exhaust fan with bracket blades suitable to operate on 230V 50Hz, AC Supply complete.Pg .78,i .9.2 . a) 12" Sweep 300mm Pg .78,i .9.2.1	Each	10		
ELE 19	Fixing one exhaust fan in the nitch already left in the wall with bolts and nuts and 5 amps. ceiling rose with sufficient length of 23 or 0.0076 inch PVC insulated twin core wire. Pg .109,i .17.12	Each	10		
ELE 20	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp.P .20,i .4.3	Each	10		
ELE 21	Supplying and fixing miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross .3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898 . a) 5 .32Amps SP Pg. No.47,i .6.16.1	Each	80		
b	5 .32 Amps DP Pg. No.47,i .6.16.3	Each	80		
c	40 .63Amps TPN Pg. No.47,i .6.16.6	Each	40		
ELE 22	Supplying and fixing regular MCB distribution boards on wall orwood boardorflush mounting using required clamps, bolts, nuts etc., with provision for fixing suitable type capacity MCB's single phase or3 phase or single door with powder coated painting. Made out of 14 SWG MS enclosure.Pg. No.47,i .6.17 . III . Double Door . 4Way TP and N Pg. No.47,i .6.17.7	Each	40		
b	8Way TP and N Pg. No.47,i .6.17.9	Each	30		
ELE 23	PANEL: Fabricating supplying and mounting MS box made out ... SWG suitable for flooror wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished with 2 coats of red oxide primer paint and finally finished with approved colour enameled metal paint etc., complete. P .49,i .6.4 . a) 16SWG P .49,i .6.40.2	sq.cms	849991		
ELE 24	Supplying of multi function digital meter with three line back light LCD type display for voltage, Current, frequency, Power, power factor, KVA, KWH,KVAR suitable for 3 phase, 4 wire LT network with IP 54 degree of protection and completely wired as required with communication Port and Class 0.5s accuracy. P .48,i .6.31	Each	3		

ELE 25	Supplying, fixing and wiring 50/5 to 400 per 5Amps 5VA burden Current Transformer. Class 0.5 accuracy with Tape Wound.P .48,i .6.32	Each	9		
ELE 26	Supplying and fixing of LED type panel board indicating lamp with required colour suitable for 220v A.C. 50 Hz 12/24v D.C. P .48,i .6.36	Each	9		
ELE 27	Supplying ..... amps rated 3phase with neutral bus bar using required capacity electrolytic aluminum strips covered with heat shrinkable coloured PVC sleeve, mounted on phenolicor FRP or DMC insulator which are mounted on powder coated 40x6mm M.S.flat frame work in existing panel board. The bus bar shall have suitable holes for termination of incoming and outgoing cables as per IS specification with necessary bolts, nuts and washers etc., complete.P .49,i .6.38 . a) 250Amps 4x30x10mm Aluminum Strips P .48,i .6.38.2	Mtr	24		
ELE 28	Supplying and fixing angle iron frame work fabricated out of M.S. angle iron.. and M.S. flat ... with bolts, washers etc., and painted with 2 coats of red oxide and then two coats of approved paint.P .49,i .6.39 . A 40x40x6mm P .49,i .6.39.1	Mtr	20		
b	50x50x6mm P .49,i .6.39.2	Mtr	20		
ELE 29	Supplying and fixing Moulded Case Circuit Breaker MCCB over the existing wood/panel board using necessary screws, bolts, nuts and wiring complete. Protection of Overload and Short circuit with thermal Magneticor Micro processor release and Earth Fault as per IS .13947. Icu = Ics P .46,i .6.13 . FOUR POLE . a 100Amps 25kA. P .46,i .6.13.6	Each	20		
b	125 .160Amps 25kA. P .46,i .6.13.7	Each	18		
c	250Amps 35kA. P .46,i .6.13.9	Each	8		
d	320 .400Amps 50kA. P .46,i .6.13.10	Each	4		
ELE 30	EARTHING: Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all .round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm diaPg .55,i .7.1	No	32		
ELE 31	Supplying and running of GI/Copper strips for grounding connections, using necessary fixing materials as required. Pg .55,i .7.3 . GI strip . a25x3mmPg .55,i .7.3.1	Mtr	250		
b	600x600x3mm GI PlatePg .55,i .7.3.5	Each	24		
ELE 32	Supplying and running GI or Copper conductor for grounding and along with other wires in conduit system of wiring using necessary suitable size clamps, nails, guttasor spacers etc.Pg .64,i .7.22 . GI Wire . a 8 SWGPg .64,i .7.22.3	Mtr	220		

ELE 33	CABLES: Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip except 2CX10Sq.mm wire armoured confirming to IS .3975:1990 No. of Strip indicated in GTP and extruded PVC outer sheathed armoured cable with specified IS .1554 Part .1:1988 and confirming to GTP of GROUP .A.Pg .55,i .7.4 . a 3.5 core 25 sqmmPg .55,i .7.4.5	Mtr	150		
b	3.5 core 35 sqmmPg .56,i .7.4.6	Mtr	150		
c	3.5 core 120 sqmmPg .56,i .7.4.10	Mtr	200		
d	3.5 core 240 sqmmPg .56,i .7.4.13	Mtr	500		
ELE 34	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe or stoneware pipe or on wall or on pole as required.Pg .61,i .7.8 . In existing trench/duct. . a 25 sqmm to 75 sqmmPg .61,i .7.8.2	Mtr	300		
ELE b	95 sqmm to 150SqmmPg .61,i .7.8.3	Mtr	200		
c	185sqmm to 240SqmmPg .61,i .7.8.4	Mtr	500		
ELE 35	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete.As per Civil SR KSRB I .2, P .7Pg .61,i .7.9 . A In soil hard Pg .62,i .7.9.2	Mtr	500		
ELE 36	Supplying and fixing of heavy duty cable glands suitable for UG cable of 1.1 KV class metal only . a 100mm diaPg .63,i .7.14.8	Each	15		
ELE 37	Supplying and fixing 2mm thick perforated cable tray with powder coated paint on existing MS angle support using necessary GI bolts/nuts and washer or welding as required.Pg .63,i .7.19 . a)150x50mmPg .63,i .7.19.1	Mtr	365		
ELE 38	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of the following sizes.Pg .63,i .7.21 . A. 25 sqmm Long Barrel Pg .64,i .7.21.7	Each	75		
b	35 sqmm Long Barrel Pg .64,i .7.21.8	Each	50		
c	120 sqmm Long Barrel Pg .64,i .7.21.12	Each	32		
d	240 sqmm Long Barrel Pg .64,i .7.21.15	Each	30		
ELE 39	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.MR	Each	100		
ELE 40	Burn Bricks Class Designation 35 Non Modular Ground Moulded Civil SR Pg Noi. 12 0064	Nos	4850		
ELE 41	Supplying and fixing 2mm thick perforated cable tray with powder coated paint on existing MS angle support using necessary GI bolts or nuts and washer or welding as required.Pg .63,i .7.19 . a)150x50mmPg .63,i .7.19.1	Mtr	200		
b	300x50mmPg .63,i .7.19.2	Mtr	225		