Government eProcurement System

eProcurement System Government of India

Tender Details

Date : 20-Mar-2025 04:03 PM

Print

Basic Details

Organisation Chain	Indian institute of Technology - Dharwad||Material Management Divison		
Tender Reference Number	IITDH/IPS/EE/2024-25/072		
Tender ID	2025_IITDW_853945_1	**Withdrawal Allowed**	Yes
Tender Type	Open Tender	**Form of contract**	Works
Tender Category	Works	**No. of Covers**	2
General Technical Evaluation Allowed	No	**ItemWise Technical Evaluation Allowed**	No
Payment Mode	Offline	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No	**Allow Two Stage Bidding**	No

Payment Instruments

Offline

S.No	Instrument Type
1	Direct Credit
2	Bank Guarantee
3	Demand Draft
4	R-T-G-S
5	FDR
6	NEFT

Cover Details, No. Of Covers - 2

Cover No	Cover	Document Type	Description
1	Fee/PreQual /Technical	.pdf	Technical Bid Document
2	Finance	.xls	Price BoQ
		.pdf	Financial Breakup Document

Tender Fee Details, [Total Fee in ₹ * - 0.00]

Tender Fee in ₹	0.00		
Fee Payable To	Nil	**Fee Payable At**	Nil
Tender Fee Exemption Allowed	No		

EMD Fee Details

EMD Amount in ₹	15,80,000	**EMD Exemption Allowed**	No
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	Registrar IIT Dharwad	**EMD Payable At**	Dharwad

Work /Item(s)

Title	Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase 1A 24 facilities from G plus 1 storey buildings to G plus 11 storey buildings including external development works at IIT DH				
Work Description	Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase 1A 24 facilities from G plus 1 storey buildings to G plus 11 storey buildings including external development works at IIT DH				
Pre Qualification Details	As per tender document				
Independent External Monitor/Remarks	NA				
Tender Value in ₹	NA	**Product Category**	Construction Works	**Sub category**	Annual Maintenance Contract
Contract Type	Tender	**Bid Validity(Days)**	90	**Period Of Work(Days)**	365
Location	IIT Dharwad	**Pincode**	580011	**Pre Bid Meeting Place**	Indian Institute of Technology DHarwad

Pre Bid Meeting Address	IPS Office Meeting room First FLoor Admin Block Permanent Campus IIT Dharwad	**Pre Bid Meeting Date**	28-Mar-2025 11:00 AM	**Bid Opening Place**	IIT Dharwad
Should Allow NDA Tender	No	**Allow Preferential Bidder**	No		

Critical Dates

Publish Date	20-Mar-2025 04:00 PM	**Bid Opening Date**	11-Apr-2025 04:00 PM
Document Download / Sale Start Date	20-Mar-2025 04:03 PM	**Document Download / Sale End Date**	10-Apr-2025 04:03 PM
Clarification Start Date	NA	**Clarification End Date**	NA
Bid Submission Start Date	20-Mar-2025 04:00 PM	**Bid Submission End Date**	10-Apr-2025 04:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	Bid Document	1922.73

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	BOQ	BOQ_897755.xls	Price BiQ	237.50

Tender Inviting Authority

Name	Executive Engineer IIT Dharwad
Address	Executive Engineer IIT Dharwad

॥ सा विद्या या विमुक्तये ॥

ಭಾ.ತಂ.ಸಂ. ಧಾರವಾಡ

भा. प्रौ. सं. धारवाड

IIT DHARWAD

Chikkamallegewad, Dharwad-580 011.

Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamallegewad, Dharwad-580 011 for one year (2025-26) and extendable up to 2 years (2026-27 and 2027-28).

Tender no: IITDH/IPS/EE/2024-25/072

PART – A

Indian Institute of Technology Dharwad

NOTICE INVITING e-TENDERS

The Executive Engineer, IIT Dharwad, Dharwad invites online composite Item rate bids from approved and eligible composite category contractors for the following work:

NIT No. : IITDh/IPS/EE/2024-25/072

Name of Work : Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamallegewad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27 and 2027-28).

Sub head: Minor works, Day to day maintenance of installations and services, Annual Repairs and Special Repairs work (Civil, Electrical and Mechanical works).

Period of completion: 12 Months + Extendable up to 24 Months

Last time and date of submission of bid: 16:00 Hrs. on 10.04.2025.

The bid forms and other details can be obtained from the website www.eprocure.gov.in

---

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e- TENDERING FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEB SITE

(Applicable for inviting open bids)

The Indian Institute of Technology Dharwad, Chikkamalligawad, Dharwad – 580 011. Phone No. 0836-2309606, (**Email: ee.ips@iitdh.ac.in**) invites online composite **Open Bids** from approved and eligible composite category contractors for the following work.

Sl No	NIT No.	Name of work & Location	Sub Head	Period of completion	Last date & time of submission of bid	Time & date of opening of bid
1	2	3	4	5	6	7
Pre bid Meeting : Scheduled on 28-03-2025 at 11:00 AM at IPS Meeting Hall, First Floor, Administrative Block, IIT Dharwad.						
1.	IITDH/IPS/EE/2024-25/072	**Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**	**Minor works, Day to day maintenance of installations and services, Annual Repairs and Special Repairs work (Civil, Electrical and Mechanical works).**	**12 Months (Twelve) + Extendable Up to 24 (Twenty-four) months**	**Up to 16.00 Hrs. on 10.04.2025**	**Up to 16.00 Hrs. on 11.04.2025**

"The Extension of the Contract is not just automatic and mandatory. It is subject to satisfactory performance of the contractor throughout the contract period and at the discretion of the institute."

1. The intending bidder must read the terms and conditions carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

2. Information and instructions for bidders posted on website shall form part of bid document.

3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website www.eprocure.gov.in on free of cost.

4. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

5. The intending bidder must have valid class-III digital signature to submit the bid.

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

7. Contractor can upload documents in the form of PDF format.

8. Contractor must ensure to **quote the item rate** in figures and words at appropriate place at which he is willing to execute the work. The column meant for quoting rate appears in pink colour and the moment rate is entered, it turns sky blue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0" (ZERO). However, if a bidder quotes nil rates, the bid shall be treated as invalid, and he will not be considered as lowest bidder.

9. Contractor should quote the rates above or below to the placed decimal only.

10. List of Documents to be scanned and uploaded by bidder within the period of bid submission:

ELIGIBILITY CRITERIA:

Only those bidders fulfilling the following Eligibility Criteria (supported by documents) are expected to participate in the Tender **(all criteria to be mandatorily fulfilled for technical qualification)**.

Sl.no.	Eligibility Criteria	Document required
1.	Proof of establishment of company/business for a period of more than 7 years.	The Bidder must be in the business of Civil Works and Electrical works as described in the specification for a period not less than 7 years (i.e., must be in this business from 2017 or earlier).
2.	Previous experience & copy of performance certificates along with Work Orders	The bidder should have executed one contract for similar works of **₹ 6.31 Cr** (or) The bidder/OEM should have executed two

		contracts for similar works of **₹ 4.73 Cr.** (or) The bidder/OEM should have executed three contracts for similar works of **₹ 3.13Cr.** in any one year of the previous seven financial years (2017-18,2018-19,2019-20, 2020-21, 2021-22, 2022-23, 2023-24) in any IITs/IIMs/State/Central Govt. offices / PSUs /Central Universities/ ESCOM / KPTCL/Limited companies etc. during a period of last 7 years (i.e., Work orders issued before during December 2017 till date). copies of work orders or successful completion certificates to be submitted along with the technical bids. Similar works mean Civil Works, Civil Maintenance Works, Landscaping works, Electrical Works, Electrical Maintenance Works, AMC for Fire Fighting System, O&M of STP (Sewage Treatment Plant) and HVAC Works. The bidder should be having work done/experience in minimum 7 out 8 aforementioned disciplines of works.
3.	Minimum Annual Turnover of the bidders in any of the financial years during the last seven financial years ending 31st March 2024.	₹12.00 Cr.
4.	**Non-Black listing**	A Certificate/Undertaking on the letter head of the Company to the effect that the bidder has not been blacklisted anywhere in India or abroad by any organization. A self-certification to this effect is required to been closed.
5.	**GST and Income Tax**	The Bidder should be registered with statutory authorities concerned for GST/Income Tax etc. The bidder should furnish relevant GST registration documents and PAN/TAN copies along with the bank details of the firm and also the ITR of last 7

		financial years
6.	**ESI, EPFO & PROFESSIONAL TAX**	Registration for ESI, EPF and Professional Tax or a self-declaration to submit the said documents at the time of award of contract.
7.	**Registered Office**	Bidder should have registered office within 500 kms radius of IIT Dharwad Permanent Campus/should provide an undertaking for establishment of Local office within two months.
8.	**Contractor License**	Bidder should possess Class-I Civil works license issued by Karnatak State PWD/CPWD and Class-I Electrical License issued by respective State /Central authorities.
9.	**EMD (Earnest Money Deposit)**	**EMD** of **₹15.80 Lakhs** to be paid in the name of "**Registrar IIT Dharwad**" Payable at Dharwad. Original EMD shall be submitted with a cover letter to this office on or before 04:00 PM on the last day of BID Submission. The tenderer should submit the requisite interest free Earnest Money Deposit (EMD, if applicable) by pay order or Demand Draft in favor of The Registrar, IIT Dharwad. Tenders not accompanied by the Earnest Money Deposit shall not be considered. The EMD of unsuccessful tenderers will be returned within one month of award of work. In case EMD exemption is sought under SME/MSME/NSIC, Valid certificate from MSME explicitly mentioning the tender work herein, is required to be submitted. "BID Security" (also known as Earnest Money Deposit) shall mean Insurance Surety BOND, Account Payee Deman Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (including e-Bank Guarantee) from any of the Commercial Banks. If the soft copy of the EMD is not uploaded

<table>
<tr><td></td><td></td><td>along with technical bid and physical EMD in the form of Demand Draft/FD etc is not submitted with a covering letter before the due date & time, The bid will be rejected.

The EMD / Performance Security Deposit can be paid online which is acceptable to the institute, for online payment institute bank details are as follows.

<table>
<tr><td>Name of the Bank A/C</td><td>IIT Dharwad, Dharwad</td></tr>
<tr><td>SBI A/C No.</td><td>35636327083</td></tr>
<tr><td>Name of the Bank</td><td>State Bank of India</td></tr>
<tr><td>IFSC Code</td><td>SBIN0000833</td></tr>
<tr><td>MICR Code</td><td>580002302</td></tr>
</table>
</td></tr>
<tr><td>10.</td><td>Integrity Pact</td><td>Bidder should mandatorily submit the Integrity Pact as mentioned in NIT and in prescribed format at Page no’s 16 to 23.</td></tr>
<tr><td>11.</td><td>Duly Signed Bid Document</td><td>Bidder should sign on every page of bid document.</td></tr>
</table>

Note:

1) For details of Performance security Please refer Clause (i) of Schedule ‘C’ at Page no 26.

2) Performance security Deposit shall be given by the successful bidder for contract period of one year + 2 months initially and may be required to extend for 2 more years + 2 months if contract is extended.

3) Security deposit: 5% of certified bill’s value shall be deducted from each running bill (monthly) and shall be released after completion of Defect Liability Period (DLP) of one year from the last month of contract period.

If the contract is extended for more than one year each year security deposit shall be released subsequently on completion of Defect Liability Period of One Year.

BRIEF PARTICULARS OF THE WORK

1. Salient details of the work for which bids are invited are as under:

Sl. No.	Name of Work	Sub Head	Period of completion
1	**Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamallegewad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**	Minor works, Day to day maintenance of installations and services, Annual Repairs and Special Repairs work (Civil, Electrical and Mechanical works).	12 Months + Extendable up to **24 Months.**

2. The work site is situated at IIT Dharwad, Chikkamalligawad, Dharwad

3. Work shall be executed according to General Conditions of Contract 2023 for Maintenance Works with up-to-date correction slips and conditions of this contract document.

Annexure-I

Proforma for Earnest Money Deposit Declaration

Whereas I / We…….(name of agency)……. have submitted bids for ……. (name of work)……..

I / We hereby submit the following declaration in lieu of submitting Earnest Money deposit.

1. If after opening of tender, I/we withdraw or modify my/our bid during the period of validity of tender (including extended validity of tender) specified in the tender documents.

Or

2. If, after award of work, I/we fail to sign the contract, before the deadline defined in the tender documents.

I / we shall be suspended for one year and shall not be eligible to bid for IIT Dharwad tenders from date of issue of suspension order.

Signature of the contractor(s)

Contractors Sign & Seal

Annexure-II

LETTER OF TRANSMITTAL

From:

To

The Executive Engineer,
IIT Dharwad, Dharwad.

Subject: Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).

Sir,

Having examined details given in tender notice and bid document for the above work, I/we hereby submit the bid along with all required information and documents.

1. I/We hereby certify that all the statements made, and information supplied by me/us are true and correct.
2. I/ We have furnished all information and details necessary for bid and have no further pertinent information to supply.
3. I/We also authorize Executive Engineer, IIT Dharwad to approach individuals, employers, firms and corporation to verify our details, if required.

4. Certificate: It is certified that the information given by me/us in the bid are correct. It is also certified that I/We shall be liable to be debarred, disqualified/ cancellation of enlistment in case any information furnished by me/us is found to be incorrect.

5. Contact Details of our authorized representative are as under:

   Name
   Mobile Number:
   Email id:
   Contact Address:

Name of Bidder :
Contact Address :
Email Id of Bidder :
Mobile Number of Bidder(s):

Signature(s) of Bidder(s)
Seal of bidder

IIT Dharwad FOR E- TENDERING

Item rate bids are invited on behalf of IIT Dharwad appropriate class in composite category in Two bid system for the Work of: **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27 and 2027-28).**

1. The authority competent to approve NIT for the combined cost and belong to the major discipline will consolidate NITs for calling the bids.

   For composite bid, the eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 8** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in.** Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

3. The time allowed for carrying out the work will be 12 (Twelve) months and extendable up to 24 months from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4. The site for the work will be made available.

5 The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website **www.eprocure.gov.in** free of cost**.** The standard publications like General Conditions of Contract, Delhi Schedule of Rates 2023 (for Civil), Specifications for Civil and Electrical works and Delhi Analysis of Rates 2023 (for civil and electrical) with amendments / correction slips issued up to the previous day of the last date of submission of bid can be seen free of cost from website **www.cpwd.gov.in**. Those contractors not registered on the website mentioned above, are required to get registered themselves beforehand. If needed they can be imparted training on online tendering process as per details available on the website. The intending bidder must have valid class III digital signature to submit the bid.

6 **Proforma for Earnest Money Deposit Declaration, License in Civil and Electrical** and certificate of work experience and other documents as specified in the tender notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission.

7 The contractor whose bid is accepted will be required to furnish performance guarantee of **5%** (Five Percent) of the bid amount within the period specified in Schedule F. The Performance bank Guarantee shall be submitted inform of Demand Draft or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, **the contractor shall be suspended for one year and shall not be eligible to bid for IIT Dharwad tenders from date of issue of suspension order**. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If

applicable and also ensure the compliance of aforesaid provisions by the subcontractors, if any engaged by the contractor for the said work within the period specified in Schedule F.

8 **The description of the work is as follows:**

Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27 and 2027-28).

Sub Head: Minor works, Day to day maintenance of installations and services, Annual Repairs and Special Repairs work (Civil, Electrical and Mechanical works).

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent to any misunderstanding or otherwise shall be allowed.

The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plants, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

9 The competent authority on behalf of IIT Dharwad does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed conditions are not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

10 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

11 The competent authority on behalf of IIT Dharwad reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

12 The contractor shall not be permitted to bid for works at IIT Dharwad responsible for award and execution of contracts, in which his near relative is posted as a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

13 No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person

who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

14 The bid for the works shall remain open for acceptance for a period of **(90) days** from the date of opening of bids. Further

(i) If after opening of the tender, the tenderer withdraw or modify the bid during the period of validity of tender (including extended validity of tender) specified in the tender documents

Or

(ii) If after the award of work, the contractor fails to sign the contract, before the deadline defined in the tender documents, the contractor shall be suspended for one year and shall not be eligible to bid for IIT Dharwad tenders from date of issue of suspension order.

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

(a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, form part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

(b) Standard **CPWD Form 8.**

For Composite Bids

16.1.1 The Executive Engineer in charge of the major component will call bids for the Composite work. The Earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite bid.

16.1.2 The bid document will include the following three components:

Part A: **CPWD-8,** including schedule A to F for the major component of the work. Standard General Conditions of Contract for CPWD 2023 for Maintenance works as amended/modified up to the last date of submission of the bid.

Part B: General/Special conditions, particular specifications (Civil component). General/specific conditions, specifications.

Part C: Schedule A to F for minor component of the work (competent authority under clause 2 and clause 5 shall be same authority as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.

Part D: Schedule of quantities applicable for the work, proforma for quoting the rates

16.1.3 The bidders must associate themselves with agencies as per NIT conditions

16.1.4 The eligible bidders shall quote rates for all items of major component as well as for all items of minor components of work.

16.1.5 After acceptance of the bid by competent authority, the EE in charge of the work shall issue a letter of award on behalf of IIT Dharwad. After the work is awarded, the main contractor will have to enter into an agreement with the EE in charge of major component.

16.1.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.

16.1.7 The main contractor has to associate agencies for specialized component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-charge of relevant component(s). Within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of relevant component(s).

16.1.8 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of relevant specialized component(s).

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

16.1.9 The main contractor has to enter into MoU with agency(s) associated by him. Copy of such MOU shall be submitted to EE in charge of each relevant component as well as to EE in charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU /agreement with the new contractor.

16.1.10 **Terms of payment**: As per the measurements at site and on certification of Junior Engineer, IIT Dharwad.

a) The payment shall be released through NEFT/RTGS payment system only in the bank account of the contractor after necessary deduction of statutory dues.
b) TDS and other Statutory taxes shall be deducted at the source from the monthly bills..
c) “Performance security” shall mean Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt from a Commercial Bank or Online Payment. PBG equals to 5% of Contract Value shall be submitted by Successful bidder within 15 days from the date of Award of Letter of Intent which shall be valid for a period of 60 days beyond Defect Liability period of One Year.
d) In case of deviation, where the executed Value of work exceeds the contract value 5% of the deviated bill Value will be recovered from the final bill towards the PBG.

16.1.11 A The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by an Engineer-in-charge.

16.1.11 B. Final bill of whole work shall be finalized and paid by the EE of major component.

17 Goods and Service Tax (GST) applicable in respect of this contract shall be payable by the contractor.

Executive Engineer
IIT Dharwad

GUIDELINES REGARDING SIGNING OF INTEGRITY PACT BY THE BIDDER AT THE TIME OF SUBMISSION OF BID

Sub: Clarification regarding Introduction of Integrity Pact introduced vide OM No. CON 255 dated 23.05.2011

A new provision of Integrity Pact (IP) was introduced in GCC-2014. It is mentioned that at the time of submission of bid, it shall be mandatory to sign the pact by the bidder failing which the bidder will stand disqualified from the tendering process and such bid would be summarily rejected.

Some field units have raised their doubts regarding the submission of duly signed Integrity Pact by the bidder at the time of submission of bid. In this regard it is clarified that:-

1. Submission of the duly signed Integrity Pact by the bidder is applicable in case of manual tendering where e-tendering is not followed.

2. In case of e-tendering, Integrity Pact shall be treated in the same manner as other components of the bid document. In e-tendering, the intending bidder does not sign any document physically and entire bid document is submitted through digital signature. Since IP is a part of bid document no separate physical submission is required with other documents to be submitted in the office of tender opening authority. In addition to other component of bid document, the Integrity Pact shall also be signed between Executive Engineer and successful bidder after acceptance of bid.

INTEGRITY AGREEMENT PACT TO BE SIGNED BY THE BIDDER

To

Executive Engineer,
IIT Dharwad,
Chikkamalligawad,
Dharwad-580011.

Sub: **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**

Dear Sir,

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

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

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

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

Yours faithfully

(Duly authorized signatory of the Bidder).

Contractors Sign & Seal

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of IIT DHARWAD.

On non-judicial stamp paper of minimum Rs.500

INTEGRITY AGREEMENT

This Integrity Agreement is made at ……. on this ……. day of …… 20…...

BETWEEN

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

AND

…… ……
(Name and Address of the Individual/firm/Company)
through ……. Hereinafter referred to as the
(Details of duly authorized signatory)
"Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No: **IITDH/IPS/EE/2024-25/056** (hereinafter referred to as **"Tender/Bid"**) and intends to award, under laid down organizational procedure, contract - **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**

hereinafter referred to as the **"Contract".**

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

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

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

Article 1 : Commitment of the Principal / Owner

1) The Principal / Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

   (a) No employee of the Principal / Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

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

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

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

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

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

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

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

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

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

   d) The Bidder(s) / Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Bidder(s) / Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal

directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent / parallel tender for the same item.

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

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

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

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

Article 3 : Consequences of Breach

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

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

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit :** If the Principal / Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated / determined the Contract or terminated / determined the Contract or has accrued the right to terminate / determine the Contract according to Article 3(1), the Principal / Owner apart from exercising any legal rights that may have accrued to the Principal / Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder / Contract.

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

Article 4 : Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central / State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings / holiday listing of the Bidder / Contractor as deemed fit by the Principal / Owner.

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

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

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

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

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

Article 6 - Duration of the Pact

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

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

Article 7 - Other Provisions

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

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

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

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

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

Article 8 - LEGAL AND PRIOR RIGHTS

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

Independent External Monitor/Monitors

(1) EMPLOYER has appointed a panel of Independent External Monitors (IEMs) for this Pact with the approval of Central Vigilance Commission (CVC), Government of India, out of which one of the IEMs has been indicated in the NIT/IFB.

(2) The IEM is to review independently and objectively whether and to what extent the parties comply with the obligations under this agreement. He has the right of access to all project documentation. The IEM may examine any complaint received by him and submit a report to Chairman-cum-Managing Director, EMPLOYER, at the earliest. He may also submit a report directly to the CVO and the CVC, in case of suspicion of serious irregularities attracting the provisions of the PC Act. However, for ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter shall be referred to the full panel of IEMs, who would examine the records, conduct the investigations and submit report to Chairman-cum-Managing Director, EMPLOYER, giving joint findings.

(3) The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairman-cum-Managing Director, EMPLOYER.

(4) The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all documentation of EMPLOYER related to this contract including that provided by the Contractor/Bidder. The Bidder/Contractor will also grant the IEM, upon his request, and demonstrate of valid interest, unrestricted and unconditional access to his documentation. The same is applicable to Subcontractors. The IEM is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.

(5) EMPLOYER will provide to the IEM with information as sought by him which could have an impact on the contractual relations between EMPLOYER and the Bidder/Contractor related to this contract.

(6) As soon as the IEM notices, or believes to notice, a violation of this agreement, he will so inform the Chairman-cum-Managing Director, EMPLOYER and request the Chairman-cum-Managing Director, EMPLOYER to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to

EMPLOYER and the Bidder/Contractor, as deemed fit, to present its case before making its recommendations to EMPLOYER.

(7) The IEM will submit a written report to the Chairman-cum-Managing Director, EMPLOYER within 8 to 10 weeks from the date of reference or intimation to him by EMPLOYER and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the IEM has reported to the Chairman-cum-Managing Director, EMPLOYER, a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairman-cum-Managing Director, EMPLOYER has not, within the reasonable time taken visible action to proceed against such offence or reported it to the CVO, the Monitor may also transmit this information directly to the CVC, Government of India.

(9) The word '**IEM**' would include both singular and plural.

IEM Empanelled for IIT Dharwad :
1) Shri Jagadish Rai Garg. E-mail: Jrgarg@yahoo.com
2) Shri Anil Kumar Ganeriwala. E-mail: anil ganeriwala86@gmail.com.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witness :

……
(For and on behalf of Principal / Owner)

……
(For and on behalf of Bidder / Contractor)

WITNESS :

1. ……
(Signature, name and address)

2. ……
(Signature, name and address)

Place :
Dated :

Contractors Sign & Seal

CPWD 8

INDIAN INSTITUTE OF TECHNOLOGY DHARWAD

Open Tender & Contract for Works

Tender for the work of: **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**

(i) To be submitted / uploaded on **20.03.2025 upload at www.eprocure.gov.in/eprocure/app**

(ii) To be opened in the presence of tenderers who may be present on **11.04.2025** in the office of **EE, IIT DHARWAD, Dharwad.**

TENDER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for IIT Dharwad within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for **Ninety (90)** days from the due date of its opening and not to make any modification in its terms and conditions.

A declaration in lieu of submitting Earnest money Deposit in the Proforma as per Annexure -I is hereby submitted. **A copy of Declaration in lieu of submitting Earnest Money Deposit is scanned and uploaded.**

If I/We fail to furnish the prescribed performance guarantee within prescribed period. I/We agree that the IIT Dharwad or its successors, in office shall without prejudice to any other right or remedy, be at liberty **to suspend me / us for one year and shall not be eligible to bid for IIT DHARWAD tenders from date of issue of suspension order.** Further, if I/We fail to commence work as specified, I/We agree that the IIT Dharwad or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said **performance guarantee** absolutely. The said Performance Guarantee shall be guaranteed to execute all the works referred to in the tender documents upon the terms and conditions contained are referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in clause 12.2 and 12.3 of the tender form.

Further, I/We agree that in case of suspension for not giving declaration in lieu of submitting Earnest Money Deposit and forfeiture of Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work

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

Dated: Signature of Contractor

Witness: Postal Address

Address :

Occupation :

Contractors Sign & Seal

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of IIT Dharwad for a sum of Rs. ……*…….…….. (Rupees ……*…… ……)

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

(a) *

(b) *

(c) *

For & on behalf of IIT Dharwad

Dated: * Signature …*…….

Designation *…….

*To be filled by EE

Contractors Sign & Seal

PROFORMA OF SCHEDULES
(CIVIL COMPONENT OF WORK)

SCHEDULE 'A'

Tender schedule for quoting : **Page : 96-138**

SCHEDULE 'B'

Extra schedule for specific requirements / documents for the work, if any - As per NIT

SCHEDULE 'C'

Reference to General Conditions of contract. **GCC 2023 maintenance works as amended / modified up to last date of submission of Tender.**

Name of work: Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).

i) **Performance Guarantee : 5% of L-1 Bid Value.**
ii) Security Deposit : 5% of Running Bill certified value (monthly)

SCHEDULE 'D'

General Rules & Directions: General conditions of contract for Maintenance works 2023 with up-to-date online receipt of amendments shall be read with NIT.

Officer inviting tender : **EE, IIT DHARWAD, Dharwad**

Definitions:

2 (v)	Engineer- in- Charge	:	**EE, IIT DHARWAD, Dharwad or successor thereof**
2 (viii)	Accepting Authority	:	**The Director, IIT DHARWAD, Dharwad or successor thereof**
2 (x)	Percentage on cost of materials and labor to cover all overheads and profits	:	**15 %**
2 (xi)	Standard Schedule of Rates for Civil	:	**DSR-2023 with correction slips issued up to date of Online receipt of tender and Market Rate**
2(xii)	Department	:	**Infrastructure, Planning and support, IIT Dharwad**

Contractors Sign & Seal

Clause-1

i) Time allowed for submission of Performance Guarantee, program chart (time and progress) **and applicable Labour licenses, registration with EPFO, ESIC, and Professional Tax or proof of applying thereof from the date of issue of letter of acceptance.** : 21 (Twenty-One)days

ii) Maximum allowable extension with late fee @ 0.1% per day of performance Guarantee amount beyond the period (provided in) above : **7 (Seven)days**

Clause 1A

Recovery of security Deposit : 5% of Certified Bill Amount [Monthly]

Clause 2

Authority for fixing compensation under clause 2 : **The Director, IIT Dharwad or as notified from time to time**

Clause 2A
Applicable ***YES***

Clause 5
Authority to decide

i) Extension of time ……. : **EE, IIT DHARWAD or successor thereof**

ii) Rescheduling of milestone …… : **The Dean IPS, IIT DHARWAD, Dharwad or successor thereof**

iii) Shifting of date of start in case of delay in handing over of site ……. : **The Dean IPS, IIT DHARWAD, or successor thereof**

Number of days from the date of issue of letter acceptance for reckoning date of start : **10 (Ten) days**

PROFORMA OF SCHEDULES (Clause 5)
Schedule of handing over of site

Part	Portion of site	Description	Time period for handing over reckoned from date of issue of letter of intent
Part A	Portion without any hindrance	100% of site	10 days
Part B	Portions with encumbrances	Nil	NA

Contractors Sign & Seal

Part C	Portions dependent on work of other agencies	Nil	NA

Milestone(s):	**:**	**Not applicable**
Time allowed for execution of work	**:**	**12 (Twelve) Months Plus Extendable up to 24 (Twenty-Four) Months**
Applicable Clause 5/5A	**:**	**Clause 5**
Clause 6		Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract.
Clause 7 Gross work to be done together with net payment / adjustment of advances for material collected, if any since the last such payment for being eligible to interim payment	**:**	Rs.5 (Five) lakhs
Clause 7A Whether Clause 7A shall be applicable:	**:**	**Yes, Applicable** No Running Account Bill shall be paid for the work till the applicable Labour licenses, registration with EPFO, ESIC and Professional Tax, whatever applicable are submitted by the contractor to the Engineer-in-charge.
Clause-7B:		
Whether clause 7B as per DG/CON/310 dtd 17.07.2020 shall be applicable	**:**	Yes applicable Payment to third party shall be paid after prior written approval of The Director, IIT DHARWAD, Dharwad.
Clause 10A	**:**	List of testing equipment to be provided by the contractor at site lab as per Page-36, Table-I**. List of equipment for field testing laboratory (Table-I)**
Clause 10B Whether Clause 10B shall be applicable	**:**	Not Applicable
Clause 10C	**:**	Applicable
Component of labor expressed as percentage of value of work	**:**	
Clause 10 CA	:	Not Applicable
	:	

Contractors Sign & Seal

Clause 10 CC

Whether clause 10CC shall be applicable	:	Applicable
Schedule of component of other materials, Labour, etc. for price escalation:-	:	
Component of civil (Except materials covered under clause 10CA Expressed as percent of total value of civil work)	:	Xm = 30%
Component of Labour expressed as percent of total value of work	:	70%
Component of P.O.L. expressed as percent of total value of work	:	NIL

Note: Xm : 30% (should be equal to (100) – (materials covered under Clause 10CA i.e. cement, steel and other material specified in Clause 10CA + Component of Labour.

Clause 11

Specifications to be followed for execution of work for Civil work	:	CPWD specifications 2023 Vol. I to II with up-to-date correction slips – of receipt of tender including extension if any and conditions attached with the tender document. CPWD General specifications for electrical works, Part –I: Internal, 2013, Part-II: External-1995, Part –III: Lifts and Escalators-2003, Part IV substation-2013, Part V wet-riser & sprinkler system-2020, Fire detection and Alarm System-2018 as amended up to last date of submission**/uploading of tender. Special condition, particular specification, relevant BIS codes and if both are not available manufactures specification.**

Clause 12

Authority to decide deviation up to 50% of tendered amount	:	**The Dean IPS, IIT DHARWAD, or successor thereof**
Type of work	:	**Maintenance work**

12.2 & 12.3	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work	**:**	**No limit**
12.5 (i)	Deviation Limit beyond which clauses 12.2. & 12.3 shall apply for foundation work. (except items mentioned in earth work subhead in DSR related items)	**:**	**No limit**
12.5 (ii)	Deviation limit for items mentioned on earth work subhead of DSR and related items	**:**	**No limit**

Clause 13 Foreclosure of contract due to Abandonment or Reduction in Scope of Work	:	**Applicable**
Clause 16 Competent Authority for deciding reduced rates	:	**The Executive Engineer, IIT DHARWAD, Dharwad or successor thereof**
Clause 17 Contractor Liable for Damages, defects during defect liability Period	:	**12 Months from the date of last month of contract period.**
Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site	:	**(Table-I) Page-31**
Clause 19C Authority to decide penalty for each default	:	**EE, IIT DHARWAD, Dharwad or successor thereof**
Clause 19D Authority to decide penalty for each default	:	**EE, IIT DHARWAD, Dharwad or successor thereof**
Clause 19G Authority to decide penalty for each default	:	**EE, IIT DHARWAD, Dharwad or successor thereof**
Clause 19K Authority to decide penalty for each default	:	**EE, IIT DHARWAD, Dharwad or successor thereof**
Clause 21 **Work not to be sublet. Action in case of in solvency**	:	**Applicable**

Clause 25

1	Conciliator	The Director, IIT DHARWAD,
2	Arbitrator Appointing Authority	The Director, IIT Dharwad
3	Place of Arbitration	Dharwad

Clause 32 Minimum Qualifications & experience required for Technical Staff.

S N	Min. Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience	No.	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32
1	*Graduate Engineer*	*Civil*	*Project manager*	**5 (and having experience of 1 similar nature of work)**	**1**	*Rs. 25000/- per month (Rupees Twenty-Five Thousand per month per person)*
2	*Graduate Engineer or Diploma Engineer*	*Civil/Electrical*	*Project planning / Quality / billing Engineer*	*2 years or 5 years respectively*	*1*	*Rs.15000/- per month per person. (Rupees fifteen thousand per month per person)*

Assistant Engineers retired from government service who are holding Diploma will be treated at par with graduate engineers. **Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.**

Clause 38

(i)	(a)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates	**DSR 2023 with up-to-date correction slips.**
(ii)		Variations permissible on theoretical quantities:	
	(a)	Cement	
		For works with estimated cost put to tender more than Rs. 5 lakhs.	**2% (Two percent) plus / minus.**
		Bitumen for all works	**2.5% (Two-point five percent) plus only and nil on minus side.**
	(b)	Steel Reinforcement and structural steel sections for each diameter, section and category	**2% (Two percent) plus / minus**
	(c)	All other materials	**Nil**

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Rate in figures and words at which recovery shall be made from the contractor

		Excess beyond Permissible variation	Less use beyond the Permissible variation
1	Ordinary Portland cement 43 Grade	NIL	Rs.6,032/ +10% per M.T
2	Portland Pozzolana Cement	NIL	Rs.6,032/ +10% per M.T
3	Steel Reinforcement TMT Bar of all diameters	NIL	Rs.64,935/ +10% per M.T
4	Structural steel	NIL	Rs.69,790/ +10% per M.T

Clause 41

Release of Security deposit : The Security Deposit of the work shall be refunded if no Labour complaint has been received from the Labour officer till the due date of its payment. If a Labour complaint is received during this period, the Engineer-in-Charge shall, after issue of notice in this regard to the contractor, deduct the amount required to settle the complaint from his security deposit and refund the balance amount.

List of equipment for field testing laboratory (Table-I)

1. Balances

   (i) 7 kg to 10 kg capacity, semi-self-indicating type – accuracy 10 gm
   (ii) 500 gm capacity, semi-self-indicating type – accuracy 1 gm
   (iii) Pan balance – 5 kg capacity – accuracy 10 gm

2. Ovens-electrically operated, thermostatically controlled up to 110^{o}C – sensitivity 1^{o}C

3. Sieves: as per IS 460 – 1962
   (i) I.S. sieves – 450 mm internal Dia, of sizes 100 mm, 80 mm, 63 mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75 mm, complete with lid and pan
   (ii) I.S. sieves – 200 mm internal Dia (brass frame) consisting of 2.36 mm, 1.18 mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan

4. Sieve shaker capable of 200 mm and 300 mm diameter sieves, manually operated with timing switch assembly.

5. Equipment for slump test – slump cone, steel plate, tamping rod, steel scale, and scoop.

6. Dial gauges, 25 mm travel – 0.01 mm/division least count – 2 nos.
   (i) Graduated measuring cylinders 200 ml capacity – 3 Nos.
   (ii) Enamel trays (for efflorescence test for bricks)
      (a) 300 mm x 250 mm x 40 mm – 2 Nos.
      (b) Circular plates of 250 mm Dia – 4 Nos.

T&P (Table-II) -

1) Megger (0 - 1000v)
2) Tongue Tester
3) Aluminum Ladder- Suitable for internal & external electrical work.
4) Tacho Meter
5) Hydro Meter
6) Crimpling tool for all sizes
7) Wheel ladder for streetlight repairing
8) Ammeter
9) Voltmeter 0 – 500 volts
10) Chain wrench 2”, 4”, 6”
11) Pipe wrench up to 4 “
12) Spanners kit
13) Insulation tester
14) Earth resistance tester
15) Lux Meter (Digital)
16) Vernier, Screw gauge (Digital)

PART-B

Special Conditions and particular specifications

1.0 General Conditions

1.1 Contractor is advised to visit the site before quoting the rates to get acquainted with the area, services, installations, condition of the building and overall scope of the work.

1.2 The installation, services, buildings and equipment mentioned in the tender document shall be handed over on, as is where is basis and nothing extra shall be paid toward pre-maintenance as they are in running condition.

1.3 After the expiry of the contract, the firm shall have to hand over complete installation to the department in proper working order. All defect and deficiencies shall have to be rectified by the firm to the entire satisfaction of Engineer-in- charge failing which the work shall be done at the risk and cost of the firm.

1.4 Unless otherwise specified, the agreement rates for all items of work of the schedule of quantities are for all heights, depths, leads and lifts involved in the execution of work.

1.5 No advance payment will be made to the contractor. Running payment shall be made on the basis of services rendered by the contractor as per the terms and conditions of contract.

1.6 No T & P will be issued to the contractor.

1.7 The contractor shall make his own arrangements for obtaining electric connection for carrying out any work like special repair, any modification work from BESCOM and make necessary payment directly to BESCOM. In the absence of electric connection or failure of power supply, the contractor shall make his own arrangement of silent type generators.

1.8 Contractor may note the provision of General condition of contract Maintenance works 2023 clause 6 where computerized measurement & bill is only acceptable. No other form of bill shall be acceptable. GST/Income Tax/other taxes as applicable shall be recovered from the contractor's bill.

1.9 The contractor or his staff should not remove/disturb/dislocate the existing equipment and its parts from its position until unless it is authorized by the Engineer-in-charge. The entire installation should be intact at any time of inspection & as handed over to him at the time of initial taking over for its maintenance & operation. Care should also be taken to prevent damage or theft.

1.10 The contractor shall employ qualified/ trained persons for operation/maintenance of the equipment & shall be fully responsible for obtaining such licenses for taking up the above work as prescribed by the State/Local bodies/ IIT DHARWAD both for execution & operating staff. He shall also be responsible for any periodic statutory inspection to be carried out on the equipment, rectification of defects pointed out during such inspection etc. A failure to comply with this clause by the contractor will render him liable for payment of all penalties imposed by the state/local bodies & the inspection and / or subsequent rectification will be carried out by the department at his risk & cost besides recovering the penalty amounts imposed by the state/local bodies.

1.11 The Contractor shall employ their regular staff in the works and related names of employees shall have to be given by the contractor.

1.12 The contractor shall deputy required engineers who shall remain present at IIT DHARWAD from 9:00 A.M. to 5:00 P.M. on all days excluding Sunday and National Holidays. On Sunday and National holidays, the Supervisor shall be present at IIT Dharwad.

1.13 All Maintenance work will operate in full of 9:00 A.M to 5:00 P.M on all days except Sundays and National Holidays.

1.14 The contractor shall also be responsible for using computerized complaints receiving and monitoring system and login IIT DHARWADS CIMS website before 9.30 a.m. daily. The contractor will have to arrange and maintain telephones, computers along with peripherals and broadband Internet connections to operate IIT DHARWAD website.

1.15 Operations in which assistance shall be provided by the agency to the IIT DHARWAD:

(i) Assistance for occupation and vacation for quarters.

(ii) Assisting the department in detection of unauthorized encroachments in the area being maintained.

(iii) Informing to the IIT DHARWAD Engineers regarding the failure in any service being provided by other departments, in so far as they affect the assets being maintained under this contract, so that they can be taken up with the concerned local body / department for rectification.

(iv) Stores & bins as available shall be handed over to the contractor for storing the material.

(v) A minimum number of supervisors, Project Manager etc. to be deployed at IIT Dharwad by the contractor from 9 A.M. to 5 P.M. shall be as follows:

(a) Supervisor-1no.

1.16 The contractor will maintain attendance record of the staffs, which will be checked by the Junior Engineer/Assistant Engineer/Executive Engineer-in-charge of the work.

1.17 The contractor will have to arrange all registers/stationery etc. These registers will be issued by Engineer-in-charge duly marked in chronological order. Nothing extra shall be paid on this account.

1.18 Complaint register, attendance register, and other records will have to be produced either daily according to the requirement or when asked to do so by the Engineer-in-charge or his authorized representative.

1.19 When a register is filled up completely, it will be handed over to the concerned JE/AE. It will not be returned to the contractor and the same will become the property of the department.

1.20 Each worker should maintain a complaint diary and get the feedback recorded from the allottees regarding attending the complaints. In the event it is found that the complaint has been attended unsatisfactorily, it will be considered unattended. List of such complaints shall be submitted to the Assistant Engineer-in-Charge or his representative on daily basis.

1.21 The contractor will have to arrange all the required Computer, furniture etc. in fulfilling his obligations of the contract at his own cost and can take them back only after the expiry of the contract for which nothing extra shall be paid.

1.22 The Engineers and Supervisors shall carry mobile telephone(s) to enable the Engineer-in-charge/AE/JE to have easy and quick communication. Nothing extra shall be paid to the contractor on this account and his quoted rates for various items under this contract will be inclusive of this obligation.

1.23 If needed Police verification of regular staff deployed by the contractor shall be done by the contractor compulsorily and a copy of police verification shall be provided to Engineer-in-Charge after which an identity card duly countersigned by Engineer-in-Charge or his representative shall be issued to each employee of the contractor for proper identification. The contractor shall provide uniform along with Badge and shoes within 15 days of start of

work. All the employees and workers engaged by the contractor should necessarily wear neat and clean uniform, name badges and Identity Cards.

1.24 The contractor must have Employees Provident Fund (EPF) Registration ESIC facility, documentary proof regarding the ESIC should be produced to the department.

1.25 While on duty workers should be in neat and clean uniforms (different for different streams with name plate on the pocket of the shirt. Recovery shall be made **as Rs. 50/- per person / per shift** for not wearing the uniform and shoes.
Note: There has to be a dress code for the workers. The agency has to decide the colour of the dress code in consultation with Engineer-in-charge.

1.26 In case of any accident during the operation / Maintenance of the equipment leading to injuries/damages to human being equipment or loss of life, the contractor shall be fully responsible for settling all claims & indemnify the department against any claims arising out of such accidents.

1.27 Staff employed by the contractor should be well-behaved, polite & courteous. Any complaint against staff on behavior should be taken very seriously and such staff should be removed by the contractor immediately from the site and arrange replacement. If the replacement is not done then for the same, the Engineer-in-Charge shall make recovery

1.28 The workers employed by the firm shall be their own employees. Any labor claims such as their permanency etc. raised by the workers engaged for this work is to be settled by the contractor itself and department shall not be responsible for the same. In case of any accident or fatal cases the department is not held responsible for the same. The contractor should have proper insurance for the workers against such exigencies.

1.29 In case a labor of the contractor as above fails to attend the duty, the contractor shall have to provide suitable substitute arrangement. If contractor fails to provide suitable substitute arrangement, the recovery will be made.

1.30 Safety of the staff employed will be the responsibility of the contractor. IIT DHARWAD will not be responsible for any mishap, injury/accident or death of the staff. No claim in this regard shall be entertained/ accepted by the department. In case of any non - fulfillment of obligation, necessary recovery shall be made from his bill / security deposit / performance guarantee. The contractor shall take all precautions to avoid accidents by exhibiting caution boards, red flags, red lights and providing necessary barriers and all other measures required from time to time. The contractor shall be responsible for all damages and accidents due to negligence on his part.

1.31 No claims of the labours shall be entertained by the Department including that of providing employment, regularization of services etc.

1.32 The contractor shall comply with proper legal orders and directions of the local or public authority or Municipality and abide by their rules and regulations and pay all fees and charges of which he may be liable.

1.33 In case any major defects or abnormalities found in the system during checking it should be informed to the Engineer-in-Charge.

1.34 This contract includes the emergency services whenever required after contract time; no extra charge will be made for that.

1.35 The contractor will carry out preventive maintenance / Checks as per IIT DHARWAD Specifications / respective standard trade practice and as per details attached. The result of such tests will be recorded in proforma as decided by the Engineer-in-charge.

1.36 The contractor shall arrange to render efficient service as outlined above. However, if he fails to maintain the service to the satisfaction of the Engineer-in-charge and the department has to incur any expenditure to maintain the installation by alternate arrangement, the expenditure thus incurred will be recovered from the contractor, for which Engineer-in-change's decision shall be final.

1.37 The department reserves the right to terminate this contract, at any time if the performance of the contractor is found unsatisfactory.

1.38 The contractor shall give due notices to Municipality, Police and/ or other authorities under intimation to the Engineer in Charge that may be required under the law/ rules under force and obtain all requisite licenses for temporary obstructions/ enclosures and pay all charges which may be leviable on account of his execution of the work under the agreement. Nothing extra shall be payable on this account.

1.39 Other agencies working at site will also simultaneously execute the work entrusted to them and the contractor shall offer necessary co-operation wherever required to other agencies.

1.40 On account of security consideration, there could be some restrictions on the working hours, and movement of vehicles for transportation of materials. The contactor shall be bound to follow all such restrictions and adjust the program for execution accordingly.

1.41 The work shall be carried out in a manner complying in all respects with the requirements of relevant bye laws of the local bodies, labor laws, minimum wages act, workmen compensation act and other statutory laws enacted by Central Govt. as well as State Govt.

1.42 All the malba or rubbish obtained from dismantling or otherwise during the process shall be brought down through the stair case and shall not be thrown to the ground directly from upper floors etc. Malba / rubbish generated due to any operation from houses and other open spaces whatsoever shall be disposed off on daily basis by the contractor to the specified common disposal point. After the collection of full truck load of the said malba (approx. 4.5 cubic meters), the same shall be disposed of same day by the contractor to the authorized municipal dhalao/ dumping ground and nothing extra shall be paid on this account. In case of non-removal/disposal in the specified period, a recovery of **Rs.2000/- per day** shall be made from the contractor.

1.43 No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor should also not be allowed to erect any temporary set up for staff in the campus.

1.44 Materials used shall be in order of preferences as under:
(a) Under the Nomenclature of the item
(b) Particular specifications and special conditions
(c) CPWD specifications
(d) ISI marked
(e) IIT DHARWAD approved
(f) Direction of the Engineer-in-Charge

1.45 Contractor shall be fully responsible for any damages caused to Government property or allottee's property by his or his labor in carrying out the work and shall be rectified by the contractor at his own cost.

1.46 The contractor shall maintain sufficient quantity of materials and spares at site to meet the requirement of attending the complaints as per direction of the Engineer-in-charge.

1.47 Chases, holes & drilling works etc. shall be done using power operated tools.

1.48 The contractor shall have to carry out the work other than day to day maintenance according to program given by the Executive Engineer / Assistant Engineer / Junior Engineer-in-charge. The contract shall not carry out any work in any building without permission of Engineer-in-charge or his authorized representatives. The contractor shall have to adhere to this program failing which he shall be wholly responsible for any inconvenience caused to the occupants. No claim for idle labor on any account shall be entertained. The contractor shall depute his representative daily to the site of work. His name and Signature shall be attested by the contractor for record in the department.

1.49 The portions of the building where the work is to be executed on any day shall be approved from the representative of the Engineer-in-charge at the site of work. No work shall be carried out without the approval of the representative of the Engineer-in-charge. Any work carried out without the approval of the representative of the Engineer-in-charge at the site of work shall be rejected and shall not be measured and paid for.

1.50 The contractor shall, if required, have to furnish the manufacturer's certificate and that the material supplied satisfy the requirements of the relevant specifications.

1.51 The Engineer-in-Charge shall be at liberty to take respective sample(s) of each item of SCHEDULE OF QUANTITIES in any approved laboratory as decided by him. The sample for testing shall be provided by the contractor. All expenditure required to be incurred for taking sample, conveyance and packing & testing charges etc. shall be borne by the contractor himself. In case any sample particular lot fails in testing the contractor shall be bound to replace the entire lot with fresh material of prescribed specification and the rejected lot shall be returned to the contractor only after fresh lot is supplied. Testing charges in respect of failed sample will be borne by the contractor himself.

1.52 Rejected materials shall have to be removed by the contractor at his own cost immediately because of the instructions of doing so.

1.53 In case of any dispute regarding rejection of quality of materials the decision of the Engineer-in-Charge shall be final and binding upon the contractor.

1.54 Royalty, Octroi, Terminal, GST taxes etc. At applicable rates shall have to be paid by the contractor himself and the rates quoted by him shall include these duties and nothing extra on, this account shall be payable.

1.55 All dismantled fittings, fixtures and other materials shall be taken away by contractor with prior approval of AE / JE and suitable credit shall be assessed and considered while quoting the tender as credit shall have to be given for dismantled materials to be taken over by the contractor.

1.56 All safety precautions relating to COVID-19 issued by MHA / MoHFW regarding protection gear, sanitization, social distancing has to be followed and nothing extra shall be payable for the same.

1.57 **Details of Installations to be maintained**

All the facilities developed under Phase 1A, including external development of built-up area: 1,62,000 Square meters.

2.0 SPECIAL CONDITIONS

2.1 The contractor shall take instructions from the Engineer in charge of stacking materials in any place. No excavated earth or building material shall be stacked on areas where other buildings, roads, services or compound walls are to be constructed.

2.2 All the material to be used on works shall bear ISI certification mark unless otherwise the make is specified in the item or special conditions appended with this tender document. In case ISI mark materials or the materials mentioned in the tender documents are not available, as per opinion of Engineer-in-charge, which shall be final and binding, the material to be used shall conform to IIT DHARWAD specifications applicable in this tender or IS Code. In such cases Engineer-in-charge shall satisfy himself about the quality of such materials and give his approval in writing. Only articles classified as first quality by the manufacturers shall be used unless otherwise specified. All material not having ISI mark shall be tested as per relevant ISI specification. The Engineer in charge may relax the condition regarding testing if the quantity of the materials required for the work is small. In all cases of use of ISI marked materials proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the entire satisfaction of Engineer in charge.

2.3 All materials equivalent to the one specified should be approved by the Engineer- in-Charge before using the said materials in the work.

2.4 The contractor shall be responsible for the protection of sanitary and water supply fittings and fixtures against pilferage and breakage during that period of installation and thereafter until the warrantee period is over.

2.5 Any damage to work resulting from rains or from any other cause until the work is taken over by the Department after completion of work shall be made good by the contractor, at his own cost.

2.6 The contractor shall comply with the provision of any Government acts which relate to the work and to the regulations and laws of any local authorities. The contractor shall give all notices required by the said acts, laws etc. and pay all fees payable to such authorities and allow for those contingencies, cost of restorations etc. and all other fees payable to the local authorities.

2.7 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws and specifications of the municipal body/corporation where CPWD specifications are not applicable. The work of water supply, internal sanitary installations, drainage etc. shall be carried out as per local Municipal Corporation or such local body byelaws. The contractor shall get the materials (fixtures/fittings) tested by the Municipal body/Corporation authorities wherever required at his own cost and after completion of work shall produce necessary completion certificates from such authorities.

2.8 The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by the rules and regulations and pay all fees and charges which he may be liable.

2.9 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

2.10 **BRIEF WORDING OF ITEMS:**

2.10.1 For the purpose of recording measurements and preparing running account bills, the underlined portions of the nomenclature of items included in the Schedule of Quantities shall be adopted as the abbreviated nomenclature of the particular item. The abbreviated nomenclature shall be taken to cover all the materials and operations as per

the complete nomenclature of the relevant item in the agreement and relevant specifications. In the case of items for which abbreviated nomenclature is not indicated in the Schedule of Quantities, the full nomenclature shall be reproduced while recording measurements and preparing the bills.

Also following abbreviations may be adopted.

a) P/L for: Providing and Laying
b) P/F for: Providing and Fixing
c) C.C. for: Cement Concrete
d) C.M. for: Cement Mortar

2.10.2 In case of extra/substituted items of work for which brief wording is not provided in the agreement, the full nomenclature of the item shall be reproduced in the measurement books and bill forms of running bills.

2.10.3 The full nomenclature of the items shall be adopted in preparing abstract of final bill in the measurement books and also in the forms for final bills.

2.11 Water proofing treatment

2.11.1 The water proofing items should be got done through the firms approved by the Engineer in charge.

2.11.2 **GUARANTEE FOR WATER PROOFING TREATMENT**

Ten years guarantee in prescribed Performa attached must be given by the contractor for the water proofing treatment. In addition, 10% (ten percent) of the cost of these items would be retained as guarantee to watch the performance of the work executed. However, half of this amount (withheld) would be released after two monsoon seasons after the date of completion of the work, if the performance of the waterproofing works is satisfactory.

The remaining withheld amount can be released after completion of five monsoon seasons after the date of completion of work, if the performance of the waterproofing work is satisfactory. If any defect is noticed during the guarantee period, it should be rectified by the contractor within seven days and, if not attended to, the same shall be got done by other agency at the risk and cost of the contractor. In any case the guaranteeing firms during the guarantee period should inspect and examine the treatment once in every year and make good any defect observed. However, the security deposit can be released in full, if bank guarantee of equivalent amount for five (5) years is produced and deposited with the department

2.12 VARIATION IN CONSUMPTION OF MATERIALS

2.12.1 The variation in consumption of material shall be governed as per CPWD specification and clauses of the contract to the extent applicable.

2.13 THEORETICAL QUANTITY OF MATERIAAS

2.13 The theoretical quantity of cement to be utilized in items of concrete involving use of single aggregate and mixed by volume batching shall be computed on the basis of the coefficient for cement to be used in different items of the work provided in the DSR 2019 after reducing each of the coefficients by 5%. However, where the concrete is mixed by weight batching no such reduction shall be made from the theoretical coefficient given in DSR 2019 for concrete with crushed stone aggregate

2.14 Materials obtained from dismantlement

2.14.1 The contractors in course of their work should understand that all materials (e.g. stone and other materials) obtained in the work of dismantling excavation etc. will be considered Government property and may be issued to the contractor if required for use in this work at rates approved by the Engineer in charge

2.15 Materials brought by the contractor

2.15.1 The contractors shall have to deposit the approved paints of required color and shade as per actual requirements of the work to be done, with the Engineer-in- Charge at his departmental stores at the site of work.

(a) The paint will be issued to the contractor from time to time according to his requirements. For the work in the same manner as the issue of materials stipulated to be issued departmentally.

(b) Similar procedure shall be followed for water proofing compound.

(c) The day-to-day receipt and issue quantity account of water proofing compound, paints etc. shall be maintained by the Junior Engineer and signed daily by the contractor or his authorized agent.

(d) Empty containers should not be removed without the written permission of the Engineer-in-charge.

2.16 The steel windows & ventilators shall be factory made, and ISI marked.

2.17 TESTING OF MATERIALS

2.17.1 The contractor shall procure all the materials in advance so that there is sufficient time for testing and approval of the material and clearance of the same before use in work.

2.17.2 The contractor's rates for the items involving the use of materials shall be deemed to cover the cost of samples. The cost of packaging, sealing, transportation, loading, unloading etc. shall be borne by the contractor. Testing charges shall be borne by the department only when the samples satisfy the provisions specified and conform to the requirements of the relevant specifications. If the results show that the samples do not satisfy the relevant specifications, the testing charges shall be borne by the contractor.

2.17.3 With a view to avoid controversy about quality of cement concrete as revealed in the test results of 7 days cubes falling short of the prescribed standards by over 10% to 20% and pending testing of balance 3 cubes for 28 days as final confirmatory acceptance test, crushed samples of cement concrete from the failed 7 days cubes should be preserved in a sealed bag.

2.17.4 In case of concrete and reinforced concrete work, the contractor shall be required to make arrangement for carrying out compression strength tests at his own cost. He shall render all assistance for the preparation of cubes, safe custody of the same, proper curing and carriage up to the laboratory where the test is to be performed. The cube test can be performed at any laboratory approved by the Engineer-in-charge.

2.17.5 The contractor shall make his own arrangements for obtaining electrical connections, if required, and make necessary payments directly to the department concerned.

2.17.6 Other agencies will also be executing simultaneously the works like electrification, horticulture or external services and other building works for the same project along with this work in particular. The contractor shall afford necessary facilities for the same. No claim in this respect shall be entertained. The contractor shall leave such necessary holes, opening etc. for laying/burying in the work, pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for electric, sanitary, air conditioning, firefighting, P.A. system, telephone system, C.C.T.V. system etc. and nothing shall be paid for the same. Conduits for electrical wiring/cables will be laid in such a way that they

leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rate shall be paid for the same.

2.17.7 Any cement slurry if added over base surface (or for continuation of concreting) for bond, its cost shall be deemed to have been included in the respective items, unless otherwise, explicitly stated and nothing extra shall be payable nor extra cement considered in the cement consumption on this account.

2.18 MIXER MACHINE

Mixer having arrangement of weighing water for controlling W.C. ratio should only be used in all PCC and RCC works

2.19 COVER BLOCKS

Only factory-made round type concrete cover blocks shall be used. No other type of cover blocks shall be permitted.

2.20 STORAGE OF STEEL BARS

All steel bars should be stored above 30 to 45 cm above Ground. A coat of cement wash should be given to steel bar, which are likely to be stored for a long time. In places where rainfall is heavy, steel bars may be stored in a protective environment to reduce corrosion.

2.21 Unless otherwise specified, the brand / make of materials as specified in the item nomenclature shall be used in the work. In case of non-availability of the brand specific in the contract the contractor shall be allowed to use alternate equivalent brand of the materials subject of documentary evidence of non-availability of the specific brand. The necessary cost adjustment on account of above change shall be made for materials with wastage and contractor profit.

2.22 The premises shall be thoroughly cleaned after execution of work with all floors, walls, doors, windows, etc. before handing over and nothing shall be paid extra in this account.

3. ADDITIONAL CONDITIONS

3.1 The contractor shall take immediate action to attend any complaint assigned to him through complaint register / site order book / verbal instructions from Engineer-in-charge / on telephones / IIT Dharwad complaint management / call Centre / personnel complaints from occupants. In all cases he shall attend to the complaints in the specified duration as mentioned below:

(a) **No delay complaints**-complaints of emergent nature such as plumbing or sewerage systems not working / blocked / overflow etc. are to be attended to within 3 hours, however complaints of emergent nature such as electricity not being available, shall be attended within 5 hours.
(b) **Minor complaints**-complaints relating to the repair works of trades of mason and carpenter are to be attended within 24 hours.
(c) **Major complaints**-complaints other than no delay and minor complaints – within 15 days or as decided by Engineer-in-charge.

In case of failure to meet these deadlines a lump sum amount of **Rs. 500/-** (Rupees Five Hundred Only) per complaint per day for (a) above and Rs. **300/-** (Rupees Three hundred only) per complaint per day for (b) & (c) shall be levied. One default shall be treated as one complaint

3.2 A minimum number of masons, carpenters, fitters, sewer men, beldars, to be deployed by the contractor:

3.3 The workmen engaged by the contractor shall be responsible for attending all repair works

related to water supply and sanitary installations, carpentry works, mason works involving all repair works related to minor works involving plastering patch works, cementing cracks, holes, touch up work, attending seepages in toilets, kitchen or any other works assigned to him, sewer men work related blockages in sanitary lines inside and outside the building. Complaints should be attended within the benchmark period as specified in IIT DHARWAD maintenance. The plumber shall be equipped with necessary tools to carry out the repair work.

3.4 The duty timings of the workmen shall be from 9.00AM to 5.00PM including ½ hour lunch break every day including on Sundays and national holidays as per frequency mentioned above. However, in case of emergency, the workmen shall attend repair works after duty hours or even on Sundays and National Holidays also for which no extra payment will be made.

3.5 The payment will be made based on attending to the complaint as per item no.1 of schedule of quantities. If the plumber is absent or does not attend complaints assigned to them on any particular day/ days, a penalty as mentioned in this document will be imposed on the contractor and will be deducted from the bills. Further, the complaints not attended by the contractor / plumber will be got done at the risk and cost of the contractor and the expenditure incurred thus will be recovered from the contractor without any notice. The decision of the Engineer-in-charge or his authorized representative at the service Centre, imposing the penalty/recovery will be final and binding on the contractor. The Junior Engineer should maintain the attendance register for plumber and check if the plumber is doing his designated work.

3.6 Materials shall be brought and deposited with the department as directed by the Engineer-in- charge. All samples of sanitary, water supply and fittings required for woodwork shall be got approved by the Engineer-in-charge and shall be displayed on board in each enquiry office.

3.7 The manufacturing date and batch No. inscribed or printed on packs/containers by manufacturers are only acceptable for all the above-mentioned materials. Fresh material shall be brought at site as far as possible and materials more than 4 months old from the date of manufacturing will be rejected.

3.8 The paints/other material shall be issued by the Junior Engineer / Assistant Engineer to the contractors after breaking the seal of the containers / packing and quantity to be issued shall be as per the daily requirement at the site. After a day's use balance quantity of paints etc., if any left, will be returned by the contractor to the Department. After use, the empty container shall have to be returned to the Department and shall be preserved by JE In charge and will not be disposed off till the finalization of the work.

3.9 The site for the collection and stacking of the material shall be got approved from the Engineer- In-charge.

3.10 The theoretical consumption of materials like lime, distemper, paint, waterproof cement paint etc. shall be computed, as per the consumption given in the schedule of Theoretical consumption of materials. In case of variation between the actual and the theoretical calculations action shall be taken.

3.11 Old doors, windows, floors, furniture, Electrical, Fire and other fittings shall be cleaned from all splashes, dust, dirt and mortars etc. The rate for the whitewashing/color washing / distempering / painting etc. includes the cost of removal splashes and paint marks. In the event of failure on the part of contractor to remove the splashes and the paint mark the recoveries will be made at the following rates.

Sl. No.	For splashes of Internal Finishing	For splashes of paint	For splashes of External finishing or paint marks
1	Rs. 2000/- Each Qtr.	Rs. 2500/- Each Qtr.	Rs.3000/- Each Qtr.

3.12 The labor for attending complaints shall carry the necessary tool kit, container (Tasla), required for mixing any cement sand or other material, water bottle and waste bag for collection of minor rubbish material if received during attending the complaints, so that the site of work remains neat and clean.

3.13 The material such as sanitary items / water supply items / Aluminum / Steel fittings etc. as required shall be of approved brand and manufacture as given in the list of approved makers of materials or as approved by the Engineer-in-Charge.

3.14 The sample of all the items shall have to be got approved by the Contractor from the Engineer-in-charge before the supply commences and shall be without prejudice to the right of Engineer-in-Charge to get random samples tested out of the actual lot received.

3.15 The contractor shall if required furnish the manufacturer's certificate that the material supplied satisfy the requirements of the relevant specifications.

3.16 The contractor shall have to produce the cash memo to satisfy the department that the material has been purchased from the authorized dealer to ensure GST has been paid. The necessary Legal registers, Forms, Returns etc. required as per the Law or to be maintained and complied with by the Agency and should be available for inspection at any time.

3.17 The contractor shall assume all liability, financial or otherwise in connection with his contract and shall protect and indemnify the Engineer-in-Charge from any and all damages and claims that may arise on any account. The contractor shall indemnify the Department against all claims in respect of patent rights, royalties, damages to adjacent buildings, roads or members of public in course of execution of work or any other reason whatsoever and shall himself defend all actions arising from such claims and shall keep the department saved harmless and indemnified in all respect from such actions, costs and expenses.

3.18 The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental work required to be carried out for complete execution of the item of work. There may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted for various items in the schedule of quantities by the tenderer. No adjustment of rates shall be made for any variation in quantum of incidental works with respect to drawings and/or instructions of the Engineer-in-Charge, as deviation in any such elements of work which are incidental to the items of work or are necessary to complete such items in all respects. Nothing extra shall be payable on this account.

3.19 All ancillary and incidental facilities required for execution of work like labor camp, stores, fabrication yard, offices for contractor, watch and ward, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of electricity/telephone/water, liaison works, protection works, barricading etc. during execution or any other activity which is necessary for execution of work in the opinion of Engineer-in-Charge, shall be deemed to be included in rates quoted for various items in the schedule of quantities, by the contractor. Nothing extra shall be payable on these accounts.

3.20 The rates quoted for various items in the schedule of quantities shall include cost of preliminary works like setting out the lines, alignment of various services, establishing temporary benchmarks, reference points etc. as per the drawings and directions of the Engineer-in-Charge. It shall also include making adjustments in layout, if required as per site conditions and as directed by the Engineer-in-Charge. Nothing extra shall be payable on this account.

3.21 Unless otherwise provided in the Schedule of Quantities, the rates tendered by the contractor shall be inclusive and shall apply to all heights, lifts, leads and depths and nothing extra shall be payable.

3.22 The contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labor etc. They require, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence their tenders. No claim whatsoever shall be entertained from the contractor, on the plea that the information supplied by the department is insufficient or is at variance with the actual site conditions.

3.23 The contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of bodies, tribunals having any jurisdiction or authority which in any manner affect those engaged or employed and anything related to carrying out the work. All the byelaws laid down by CIDCO / BMC and any other local bodies while executing the work shall be adhered to. All taxes / levies payable to local bodies shall be borne by the contractor. The contractor shall arrange to give all notices required by any authority and to pay to such authority all the fees that may have to be paid for execution of the work. All traffic restrictions notified by the local authorities shall also be adhered to by the contractor. He shall protect and indemnify the Department and its officials & employees against any claim or liability arising out of violations of any such laws, ordinances, orders, decree, whether by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

3.24 All care shall be taken by the contractor, so as not to damage any other adjacent existing property or other services permanent or temporary, running in the plot. If any damage is carried, the same shall be made good by the contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. Also, the contractor shall use such methodology and equipment so as to cause minimum environmental pollution of any kind during construction to have minimum construction time and minimum hindrance to users in the plot and to the occupants in the campus etc. Nothing extra shall be payable on this account.

3.25 The contractor shall maintain in good condition all work till the completion of entire work allotted to him. The contractor is to be held responsible for and to make good all injuries, damages and repair, rendered necessary by fire, rain, traffic, floods or other causes. Engineer-in-Charge shall not be held responsible for any claims for injuries to person/workmen or for structural damage to existing property happening from any neglect, default, want of proper care or misconduct on the part of the contractor or of any other of his authorized representatives in his employment during the execution of the work. The compensation, if it any, shall be paid directly to the department/authority / persons concerned, by the contractor at his own cost.

3.26 Arrangement of temporary water and electricity and telephone connection required, by him, shall be made by the contractor at his own cost and also necessary permissions directly from relevant departments shall be obtained by him under intimation to the Department. Also, all initial and running charges, and security deposit, if any, in this regard shall be borne by him. The contractor shall abide by all the rules/ bye laws applicable in this

regard and he shall be solely responsible for any penalty on account of violation of any of the rules / byelaws in this regard.

3.27 The contractor shall be responsible for maintenance and watch and ward of the complete installation and meter and shall also be responsible for any pilferage, theft, damage, penalty etc. in this regard. The contractor shall indemnify the department against any claim arising out of pilferage / theft, damage, penalty etc. whatsoever on this account. Security deposit for the work shall be released only after the clearance is obtained from the local authorities, from whom temporary electrical / water / telephone connection have been obtained by the contractor.

3.28 The department shall in no way be responsible for either any delay in getting electric and / or water and / or telephone connections for carrying out the work or not getting Connection at all and no claim whatsoever on this account shall be entertained from the contractor. Also, contingency arrangement of stand-bye water and electric supply shall be made by the contractor for smooth progress of the work on account of power Failure or disconnection for any reason whatsoever it may be. No claim of any kind. Whatsoever shall be entertained on this account from the contractor. Nothing extra shall be payable on this account.

3.29 All incidental charges of any kind including cartage, storage, wastage and safe custody of material etc. shall be borne by the contractor and no claim whatsoever shall be entertained on this account.

3.30 The contractor shall make available, on request from the Department, for record, copies of challan, cash memos, receipts and other and certificates, if any, vouchers towards the quantity and quality of various materials procured and the same shall be kept in record. These shall also provide information on the name of the manufacturer, manufacturer's product identification, manufacturer's instructions, warning, date of manufacturing, test certificates from manufacturers for the product for each consignment delivered at site, shelf life, if any, for the department to ensure that the material have been procured from the approved source and of the approved quality, as directed by the Engineer-in-Charge.

3.31 The contractor shall depute Site Engineer & skilled workers as required for the work. Necessary protective and safety equipment shall be provided to them by the contractor at his own cost and used at site.

3.32 The contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labor laws and other regulations applicable to the works, at site office.

3.33 The approval by the Engineer-in-Charge of the setting out of the alignment of services / pipelines by the contractor shall not relieve the contractor of any of his responsibilities and obligation to rectify the error/ defect, if any, which may be found at any stage during the progress of the work or after the completion of the work.

5.0 GUARANTEE TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made this……day of ……..Two thousand and ……. between ……son of ……..of …… hereinafter called the Guarantor of the one part) and the PRESIDENT OF INDIA (hereinafter called Government of the other part).

WHEREAS THIS agreement is supplementary to a contract (hereinafter called the contract) dated ……and made between the GUARANTOR OF THE ONE part and the Government of the other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak –proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak-proof for ten years from the date of giving of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak-proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of firewood and things of the same nature which might cause damage to the roof.

Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts.

The decision of the Engineer-in-charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer- in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the GUARANTOR „S cost and risk. The decision of the Engineer-in-charge as to the cost payable by the guarantor shall be final and binding.

That if Guarantor fails to execute the water proofing or commits breach there under then the Guarantor will indemnify the principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHEREOF these presents have been executed by the Obligor……...and by ……and for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, SEALED and delivered by OBLIGOR in the presence of –

1.

2.

SIGNED for and on behalf of THE PRESIDENT OF INDIA by…….….in the presence of-

1.

2.

6.0 CONDITION FOR CEMENT & STEEL TO BE BROUGHT BY THE CONTRACTOR

6.1 Cement

a) The contractor shall procure 43 grade (conforming to IS: 8112) ordinary Portland cement as required in the work, from reputed manufacturers of cement having a production capacity of one million tons per annum or more, such as ACC, Ultra Tech, J.P. Rewa, Vikram, Shree Cement, Birla Jute and Cement Corporation of India, etc., as approved by the Ministry of Industry, Government of India, and holding license to use ISI certification mark for their product whose name shall be got approved from the Engineer-in-Charge. Supply of cement shall be taken in 50 kg bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be got tested in accordance with provisions of relevant BIS codes. In case, test results indicate that the cement arranged by the contractor do not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

b) The cement shall be brought at site in bulk supply of approximately 50 tons or as decided by the Engineer-in-Charge.

c) The cement go-down of the capacity to store a maximum of 2000 bags of cement shall be constructed by the contractor at site or work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement go-down. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement go-down. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.

d) The contractor shall supply free of charge the cement required for testing. The frequency and the details of the tests shall be decided by the Engineer-in-Charge depending on the quantum of supply in each batch.

e) The actual issue and consumption of cement at work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in the contract and shall be governed by conditions laid therein. Items for which standard coefficients for cement consumption are not available in DSR 2019, the same shall be decided by the Engineer-in-Charge.

f) Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.

g) The cement bags shall be stacked on proper floors consisting of two layers of dry bricks laid on well-consolidated earth at a level of at least one-foot above ground level. The stacks shall be in rows of 2 and 10 bags high with minimum of 0.67 m clear space all-round. The bags should be placed horizontally continuously in each line. Actual size/shape of godown shall be as per site requirements, and nothing shall be paid on this account. The decision of Engineer-in-Charge regarding capacity shall be final. Cement register for the cement shall be maintained at site. The account of daily receipts and issues of cement shall be maintained in register in the pro forma prescribed and signed daily by contractor or his authorized agent.

6.2 STEEL

a) The contractor shall procure IS marked TMT bars of various grades from
The steel Manufacturers such as SAIL, TATA steel Ltd., RINL, JINDAL steel & power Ltd, and JSW steel Ltd or their authorised dealers having valid BIS license for IS: 1786-2008 (Amendmant-1 November 2012).

b) The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

c) Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week's time of written orders from the Engineer-in-charge to do so.

d) The steel reinforcement bars shall be brought to the site in bulk supply of 2 tons or more or as decided by the Engineer-in-Charge.

e) Steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

f) For checking nominal mass, tensile strength, bend test, re-bend test, etc., specimen of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of bar	For consignment below 100 tons	For consignment over 100 tons
Under 10mm Dia	One sample for each 25 tons or part thereof	One sample for each 40 tons or part thereof
10 mm to 16mm Dia	One sample for each 35 tons or part thereof	One sample for each 45 tons or part thereof
Over 16 mm Dia	One sample for each 45 tons or part thereof	One sample for each 50 tons or part thereof

g) The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor / Department in the manner indicated below:

   a. By the contractor, if the results show that the steel does not conform to relevant BIS codes.
   b. By the Department, if the results show that the steel conforms to relevant BIS codes.

h) The actual issue and consumption of steel on work shall be regulated and proper accounts shall be maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations, recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment needs to be made.

i) The steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.

7.0. PARTICULAR SPECIFICATIONS FOR CIVIL & SANITARY INSTALLATION / WATER SUPPLY / DRAINAGE WORK

7.1 EARTH WORK

The work shall be done in accordance with CPWD Specifications-2023 - Vol.I to Vol.II with up-to-date correction slips. However, nothing extra shall be payable for clearing jungle & removal of grass as required at site of works. The rate of earthwork also includes the cost for jungle clearance & removal of grass.

7.2 CONCRETE WORK

The work shall be done in accordance with CPWD Specifications - 2023 - Vol.I to Vol II with up-to-date correction slips.

7.3 RCC Work (Ordinary)

The work shall be done in accordance with CPWD Specifications - 2023 - Vol.I to Vol II with up-to-date correction slips.

7.4 FORM WORK

7.4.1 The work shall be done in general as per CPWD specification 2023 - Vol.I to Vol II with up-to-date correction slips.

7.4.2 The contractor has to arrange at site centering and shuttering of adequate plan area. Only M.S. centering / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the Engineer-in-charge.

7.4.3 Nothing extra shall be paid for the centering and shuttering, circular in shape whenever the form work is having a mean radius exceeding 6m in plan.

7.4.4 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the Contractor. As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm or as required, lower than general floors shuttering should be adjusted accordingly. Nothing extra is payable on this account.

7.4.5 Steel shuttering as approved by the engineer-in-charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces required completing the shuttering panels. Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work.

7.4.6 The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound shall be applied on the surface of the shutter plates in the requisite quantity before assembly of steel reinforcement.

7.5 REINFORCEMENT

7.5.1 The reinforcement shall be done as per CPWD Specifications - 2023 - Vol.I to Vol II with up-to-date correction slips.

7.5.2 The rate of reinforcement of RCC work includes all operations including straightening,

cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specification - 2023 - Vol.I to Vol II with up-to-date correction slips.

7.5.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or approved equivalent) of high early strength and same color as surrounding concrete precast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, rate of RCC items is inclusive of cost of such cover blocks.

7.5.4 The reinforcement bars are not to be placed directly on the ground, in rainy season, due to lack of drainage, the water accumulates causing considerable corrosion of steel to avoid this, steel bars should be stored about 30 to 45 cm above ground. A coat of cement wash should be given to steel bars. Nothing extra shall be paid on this account.

7.5.5. Every care shall be taken to avoid mixing different types of grades of bars in the same structural members as main reinforcement to satisfy clause 25.1 of IS:456. In case of buildings, wherever the situation necessitates, the changeover shall be made only from any one level onwards. In case of foundations, all foundation elements (footing and grade beams) shall have the same kind of steel. In the case of columns, all structural elements up to the level of change where the changeover is taking place should have the same kind of steel as those in columns. However, in the case of slabs, at any level, it is permissible to use a different kind of steel other than used in beams and columns, provided the entire steel in the slab at that level is of same kind of steel. It is also permissible to use a different kind of steel for stirrups/binders for beams and columns than the main steel used in them.

7.5.6 The point of change over shall be planned at any one particular level and shall be done through columns only. At the point of change over, it shall be necessary to increase the area of main steel in columns by 10% and the length of lap of bars by 50%.

7.6 BRICK WORK

7.6.1 The brick work shall be carried out with good quality well burnt FPS bricks of 75 designation as per CPWD specifications - 2023 - Vol. I to Vol. II with up-to-date correction slips.

7.6.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work

7.7 STONE / MARBLE WORK

7.7.1 General: The execution of stones work shall be in general as per CPWD Specifications - 2023 - Vol.I to Vol. II with up-to-date correction slips.

7.7.2 **Samples for Stonework :** Samples of each item of stonework either individually or in combination shall be prepared for approval of Engineer-in-charge before commencement of work

7.8 STEEL WORK

7.8.1 The work shall be carried out as per CPWD Specifications - 2023 - Vol.-I to Vol.-II with up-to-date correction slips.

7.8.2 Steel Pressed Steel Frame / T Iron Frames: - The work shall be done as per CPWD specifications. The frames shall be fabricated in approved workshops approved by the NIT approving authority.

7.8.3 The contractor shall procure RS Joist/Girder from main producer only. The contractor have to obtain original purchase invoices or other invoices accompanied with duly endorsed manufacturer's test certificate and furnish to the Engineer-in-charge in respect of all the lots of structural steel (R.S. Joists/Girder) brought by him to the site of work.

7.9 FLOORING

7.9.1 All work in general shall be carried out as per CPWD Specifications - 2023 - Vol.-I to Vol.-II with up-to-date correction slips.

7.9.2 Whenever flooring is to be done in patterns of tiles / stone, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such [flooring for which nothing extra shall be paid.

7.9.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if there is any, shall be accounted for any extra payment.

7.9.4 The proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard, etc. as per the directions of Engineer-in-charge.

7.9.5 Only machine cut, mirror polished & finished except where specifically mentioned stone slabs of marble, granite, Kota, Sandstone, Jaisalmer, Baroda etc., specifically specified shall be used for flooring work. Nothing extra shall be payable on this account.

7.9.6 The marble, Kota, Chittor, Jaisalmer, white sandstone and black cuddapah or any other stones mentioned in the tender document and as directed by Engineer-In-Charge shall be executed as per patterns and cuttings or patterns of various combinations of marbles / granite / stones shown in the architectural drawings and or as directed by Engineer-in-Charge. Nothing extra shall be payable on this account.

7.9.7 Samples of flooring marbles / stones / granites shall be deposited well in advance with the Engineer-in-Charge for approval. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.

7.9.7.1 The following will be read in addition to the CPWD specifications

7.9.7.1.1 Ceramic Tiles flooring and dado

- The tiles shall be procured from the approved manufacture of the approved shade & color.
- The tile shall be conforming to IS-15622 for floor and wall.
- Wall tiles shall be of size (approx.) 300mm x 450mm as per manufacturer's specification GROUP-III as approved.
- Floor tiles shall be of size (approx.) 300mm x 300mm as approved.

7.9.7.1.2 Vitrified tiles flooring and dado

- The tiles shall be procured form the approved manufacturer of approved shade & color.
- The tiles shall be confirmed to IS 15622 as approved for floor and wall.
- Wall tile shall be of size (approx.) 300mm x 450mmm as per manufacturer's specification of double charged series, as approved.
- Floor tiles shall be of size (approx.) 600mm x 600mm as per manufacturer's specifications of double charged series as approved.
- Test shall be conducted to satisfy the quality of material as per IIT DHARWAD Specifications.

7.9.8 The Kitchen work top shall be provided with stone of specified material and quality as per description of item preferably in one piece in one direction as far as possible.

7.9.9 The rate of items of flooring is inclusive of providing sunken flooring in bathrooms, kitchen etc. and nothing extra on this account is admissible. The marble / stone flooring in treads and risers of staircase is to be laid in single piece. Nothing extra shall be paid on these accounts. The measurement shall be made for finished work of flooring.

7.10 TERRACING / WATER PROOFING

7.10.1 The work shall be got executed from the specialized agency as approved by NIT approving authority.

7.10.2 The water-proofing compound used in water proofing treatment shall satisfy all the performance requirements indicated in IS:2645 and shall be got tested before its use. The compound shall be used @ 2% by weight of cement used or as recommended by the manufacturer.

7.10.3 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.

7.10.4 The finished surface after water proofing treatment for roof slab shall have smooth slope.

7.10.5 Before commencement of treatment on roof surface, it shall be ensured that the outlet drainpipes / spouts have been fixed and the spout openings have been eased and rounded off properly for easy flow of water.

7.11 FINISHING

7.11.1 The work shall be done in accordance with CPWD Specifications - 2023 - Vol.-I to Vol.-II with up-to-date correction slips.

7.11.2 All painting material of approved brand and manufacturer shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for at least 30 days of work. The material shall be kept under the joint custody of contractor and representative of the Engineer-in-charge. The empty containers shall not be removed from the site till the completion of the work without permission of the Engineer-in-charge.

7.12 MISCELLANEOUS WORK

The work shall be done in accordance with CPWD Specifications - 2023 - Vol.I and Vol.II with up-to-date correction slips.

7.13 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE

7.13.1 The work in general shall be carried out as per CPWD Specifications - 2023 - Vol.I and Vol.II with up-to-date correction slips. Rate includes all materials, labor and all the operations mentioned in the respective items unless and otherwise specifically mentioned.

7.13.2 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.

7.13.3 The Centrifugally spun cast iron pipe and fittings confirming to IS:3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with Rawl plugs of approved quality and nothing extra shall be paid for on this account.

7.13.4 The contractor shall give a satisfactory performance test of the entire installation(s) before the work is finally accepted and nothing extra shall be payable to the contractor on this account.

7.13.5 P/S floor traps shall be of deep seal type of approved make P/S traps shall have a minimum water seal of 75mm. While for floor traps shall have a minimum water seal of 50mm.

7.13.6 The contractor shall be responsible for all the protection of sanitary water supply fittings and fixtures against pilferage and breakage during the period of installation until the completion / handing over of the work.

7.13.7 The pig lead to be used in jointing as per C.P.W.D. specification- 2023 - Vol.I and Vol.II with up-to-date correction slips.

7.13.8 In case services are encountered during excavation / earth work and such services are required to be shifted, the contractor is bound to carry out the shifting operation as per guidance / instructions and with the approval of the Engineer-In-Charge. However, necessary payments shall be made in this regard as per provision of the agreement.

7.13.9 For the work of water supply and sanitary installations, the contractor shall engage the approved licensed plumbers and submit the name of proposed plumbing agencies with their credentials for approval of the Engineer-in-Charge.

7.13.10 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a guaranteed bond as per Performa.

7.13.11 Vitreous China sanitary fittings procured from the approved firms shall only be used subject to approval of sample by the Engineer-in-Charge unless otherwise specified in the items.

7.13.12 C.P. Brass pillar taps, bib cocks, flush valves, angle valves etc. shall be of approved make subject to approval by the Engineer-in-Charge.

7.13.13 Centrifugally Cast (Spun) Iron pipes and fittings shall conform to the BIS specifications and code IS 3989-1984 with up-to-date correction slips and of approved make & to be approved by the Engineer-in-Charge.

7.13.14 Sanitary fixtures shall be of the best quality and shall be of approved make and manufacture (wherever specified) as defined in the item of work or defined anywhere in this document or shall be as mentioned in the IIT DHARWAD specifications failing which the same shall be of ISI mark subject to approval by the Engineer-in-Charge. All fixtures and fittings shall be provided with all such accessories as are required to complete the item in working condition whether specifically mentioned or not in the Schedule of Quantities, specifications, elsewhere in this tender document & drawings. The quoted rates shall be deemed to be all inclusive for a complete item fit for use including all materials, labor, T&P, specials, equipment, testing & commissioning etc. Accessories shall include proper fixing arrangement, brackets, nuts, bolts, screws and required connection pieces. All the accessories shall be of the arrangements required and recommended by manufacturer including testing and commissioning.

8. ADDITIONAL CONDITIONS AND PARTICULAR SPECIFICATION FOR R.C.C. WORK (DESIGN MIX CONCRETE)

(Before start of RCC work concrete Mix Design shall be got done by the contractor

from a NABL accredited laboratory/ IIT/ NIT laboratory with the approval of Engineer-in-Charge. The RCC Work shall be carried out as per the Mix Design approved by the Engineer-in-charge)

GENERAL:

8.1 The RCC work shall be done with RMC or Design Mix Concrete, unless otherwise specified in the nomenclature of items, wherever letter M has been indicated , the same shall imply for the Design Mix Concrete. The Ready-Mix Concrete shall be as per IS : 4926 and as per CPWD Specification and guidelines. For the nominal mix in RCC, CPWD specification shall be followed. The Design Mix Concrete will be designed based on the principles given in IS : 456, 10262 and SP 23. The contractor shall carry out design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirements specified. The cement shall be actually weighed as presumption of each bag having 50 kg shall not be allowed. In case of use of admixture, the mix shall be designed with these ingredients as well. The specification mentioned herein below shall be followed for Design Mix Concrete.

INGREDIENTS:

i) Coarse Aggregate: As per CPWD Specifications
ii) Fine Aggregate: As per CPWD Specifications
iii) Water: As per requirements laid down in IS 456-2000 and CPWD specifications
iv) Cement: Cement arranged by the contractor will be PPC (in bags) conforming to IS:1489: Part-I.

8.2 Admixture: Type of Admixture shall be got approved from Engineer-in-Charge. Admixtures of approved quality shall be mixed with concrete to achieve the desired workability within specified water cement ratio. The admixture shall conform to IS : 9103. The chloride content in the admixture shall satisfy the requirement of BS : 5075. The total amount of chlorides in the admixture mixed concrete shall also satisfy the requirements of IS : 456-2000.

8.3 The contractor shall not be paid anything extra for admixture required for achieving desired workability without any change in specified water cement ratio for RCC / CC work.

8.4 Grade of concrete:- The characteristic compressive strength of various grades of concrete shall be given as below :

Sl. No	Grade Designation	Compressive strength on 15cm cubes min 7 days (N/mm2)	Specified characteristic compressive strength at 28 days (N/mm2)	Minimum cement content* (kg per cum)	Maximum water cement ratio
(i)	M-30 & M25	As per Design	30/25	As per IS 456	As per IS 456

8.5 The Concrete mix will be designed for minimum workability as specified in para 7 of IS–456-2000.

8.6 **WORKABILITY OF CONCRETE (UNLESS OTHERWISE SPECIFIED ELSEWHERE OR AS DECIDED BY ENGINEER IN CHARGE.**

Placing Conditions	**Degree of Workability**	**Slump (mm)**
(1)	**(2)**	**(3)**
Lightly reinforced sections in slabs, beams, walls, columns	Low	25-75
Heavily reinforced section in slabs, beams, walls, and columns	Medium	50-100
Pumped concrete	Medium	75-100

8.7 The recommended values of slump for various members to confirm IS 456.

8.8 In the designation of concrete mix letter M refers to the mix and the number to the specified characteristic compressive strength of 15 cm – Cube at 28 days expressed in N/mm2.

8.9 The concrete design mix with or without admixture will be got cementious material carried out by the contractor by any reputed NABL accredited laboratory as per direction of Engineer-In-Charge.

8.10 For such approval various ingredients for mix design as submitted by contractor shall be sent to the lab / test houses through the Engineer-In-Charge of the project and got it tested in approved laboratories as may be decided by the Engineer-in-charge. Sample of aggregate sent shall be preserved at site by the department for each different set of Coarse aggregates & Fine aggregates, fresh design shall be done and got approved by the Department. The admixture if used by contractor shall be at his own cost without any extra payment.

8.11 * Note : For RMC OPC shall be used in combination with GGBS as per nomenclature of item. In case of Portland Pozzolana Cement the cement, content shall be including fly ash content added during production of PPC at the cement plant/factory.

8.12 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised laboratory mix design report conducted in approved by Engineer-In-Charge shall be submitted by the contractor as per the direction of the Engineer in charge.

8.13 **APPROVAL OF DESIGN MIX**

(i) The mix design for a specified grade of concrete shall be done for a target mean compressive strength Tck = Fck + 1.65s
Where Fck = Characteristic Compressive Strength at 28 days
s = Standard deviation which depends on degree of quality control.

(ii) The degree of quality control for this work is “good” for which the standard deviation (s) obtained for different grades of concrete shall be as per IS relevant IS Standards/ Codes.

(iii) Out of the six specimens of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days.

8.14 **CHARGES FOR DESIGN MIX**

All cost of mixed designing and testing connected therewith including charges payable to the laboratory shall be borne by the contractor.

8.15 DESIGN MIX CONCRETE FROM FULLY AUTOMATIC COMPUTERISED CONCRETE BATCHING AND MIXING PLANT

(i) Proportioning Concrete: In proportioning cement concrete, the quantity of both cement and aggregates shall be determined by weight. The cement shall be weighed separately from the aggregates. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition. The amount of mixing water shall be adjusted to compensate for moisture content in both coarse and fine aggregates. The moisture content of aggregates shall be determined in accordance with IS: 2386 (Part III). Suitable adjustments shall also be made in the weights of aggregates to allow for the variation in weight of aggregates due to variation in moisture content.

(ii) Production of Concrete: The concrete shall be RMC produced in a central batching and mixing plant with computerized printing for contents and admixture dosage. The batching plant shall be fully automatic. Automatic batcher shall be charged by devices which, when actuated by a Single starter switch will automatically start the weighing operation of each material and stop automatically, when the designated weight of each material has been reached. The batching plant shall have automatic arrangement for dispensing the admixture and shall also be capable of discharging water in more than one stage. A printout from the batching plant for every lot shall be submitted. A batching plant essentially shall consist of the following components: Separate storage bins for different sizes of aggregates, silo for cement; and water storage tank.

(a) Batching equipment
(b) Mixers
(c) Control panels
(d) Mechanical material feeding and elevating arrangements
(e) The Contractor shall arrange for inspection of automatic batching plant within seven days of issue of letter of award to facilitate inspection and approval of same by Engineer-In-Charge. Nothing extra will be paid for this.

(iii) The compartments of storage bins for aggregates shall be approximately of equal size. The cement compartment shall be centrally located in the batching plant. It shall be watertight and provided with necessary air vent, aeration fittings for proper flow of cement & emergency cement cut off gate. The aggregate and sand shall be charged by power operated centrally revolving chute. The entire plant from mixer floor upward shall be enclosed and insulated. The batch bins shall be constructed so as to by self-cleansing during drawdown. The batch bins shall in general conform to the requirements of IS :4925.

(iv) The batching equipment shall be capable of determining and controlling the prescribed amounts of various constituent materials for concrete accurately i.e. water, cement, sand, individual size of coarse aggregates etc. The accuracy of the measuring devices shall fall within the following limits.

Measurement of Cement	±2% of the quantity of cement in each batch
Measurement of Water	±3% of the quantity of water in each batch
Measurement of Aggregate	±3% of the quantity of aggregate in each batch
Measurement of Admixture	±3% of the quantity of admixture in each batch

8.16 Mixing Concrete

The mixer in the batching plant shall be so arranged that mixing action in the mixers can be observed from the operator's station. The mixer shall be equipped with a mechanically or electrically operated timing, signaling and metering device which will indicate and assure completion of the required mixing period. The mixer shall have all other components as

specified in IS: 4925.

8.17 **Transportation, Placing and Compaction of Concrete**

(i) Mixed concrete from the batching plant shall be transported to the point of placement by transit mixers or through concrete pumps or steel closed bottom buckets capable of carrying 6 cum concrete. In case the concrete is proposed to be transported by transit mixer, the mixer speed shall not be less than 4 rev/ min. of the drum nor greater than a speed resulting in a peripheral velocity of the drum as 70 m / minute at its largest diameter. The agitating speed of the agitator shall be not less than 2 rev / min. nor more than 6 rev / min. of the drum. The number of revolutions of the mixing drum or blades at mixing speed shall be between 70 to 100 revolutions for a uniform mix, after all ingredients have been charged into the drum. Unless tempering water is added, all rotation after 100 revolutions shall be at agitating speed of 2 to 6 rev / min. and the number of such rotations shall not exceed 250. The general construction of transit mixer and other requirements shall conform to IS : 5892.

(ii) In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of mortar / thick cement slurry through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump-receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents.

(iii) Materials for pumped concrete shall be batched consistently and uniformly. Maximum size of aggregate shall not exceed one-third of the internal diameter of the pipe. Grading of aggregate shall be continuous and shall have sufficient ultra fine materials (materials finer than 0.25mm). Proportion of fine aggregates passing through 0.25mm shall be between 15 & 30% and that passing through 0.125 mm sieve shall not be less than 5% of the total volume of aggregate. When pumping long distances and through hot weather, set-retarding admixtures may be used. Admixtures to improve workability can be added. Suitability of concrete shall be through pumping shall be verified by trial mixes and by performing pumping tests.

8.18 PREPARATION OF MIXES AS PER APPROVED DESIGN MIX AND CONDUCTING CONFIRMATORY TEST AT FIELD LAB

The contractor shall make the cubes of trial mixes as per approved Mix design at site laboratory for all grades, in presence of Engineer in charge using sample of approved materials proposed to be used in the work prior to commencement of concreting and get them tested in his presence to his entire satisfaction for 7 days and 28 days. Test cubes shall be taken from trial mixes as follows:

For each mix, a set of six cubes shall be made from each of the three consecutive batches. Three cubes from each set of six shall be tested at age of 7 days and remaining three cubes at age of 28 days. The cubes shall be made, cured, transported and tested strictly in accordance with specifications. The average strength of nine cubes at age of 28 days shall exceed the specified target mean strength for which design mix has been approved, the evaluation of test results will be done as per IS : 456-2000.

8.19 WORK STRENGTH TEST

TEST SPECIMEN

Work strength test shall be conducted in accordance with IS: 516 on random sampling. Each test shall be conducted on six specimens, three of which shall be tested at 7 days and remaining three at 28 days. Additional samples shall be prepared, if required, as per direction of Engineer in charge for testing samples cured by accelerated method as described in IS : 9103.

TEST RESULTS OF SAMPLE

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than + - 15 percent of the average. If so, the test results of the sample are invalid. 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in the laboratory of Government Engineering colleges, or in any other approved laboratory as directed by the Engineer-in-charge.

8.20 STANDARD FOR ACCEPTANCE

i) Standard of acceptance shall be same as specified in clause 16 of IS 456-2000.

ii) In order to keep the floor finish as per direction of Engineer-in-charge and as per Architectural drawings and to provide required thickness of the flooring as per specification, the level of top surface of RCC shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the contractor.

9.0 Special conditions for supply of potable water

9.1 The water shall be supplied to IIT Dharwad as and when required and shall be unloaded to the sump as per the direction of the Junior Engineer-in-charge.

9.2 The water shall be potable without any organic impurities. The specifications of portable water shall fulfil the conditions as per **IS: 10500: 2012.**

9.3 The supplier shall produce test certificate for portability for each consignment of 300 kilolitres.

9.4 At the end of each day's supply, the contractor, in the presence of authorized representative of IIT DHARWAD, shall measure the quantity of water supplied and shall be signed by both contractor and the representative of IIT DHARWAD.

9.5 Trip sheet for each consignment shall invariably be submitted to the representative of the department.

LIST OF PREFERRED MAKES OF MATERIALS (FOR CIVIL WORK)

Sl No	Materials	Approved Make
1	WHITE CEMENT	J.K. WHITE, BIRLA WHITE, ASIAN PAINTS
2	CHEMICAL ADMIXTURES	ARDEX ENDURA, FOSROC, MC BAUCHEMIE, SIKA, BASF, PIDILITE, CHOKSEY CHEMICALS, BOSTIK
3	EXPANSION JOINT BOARD	SUPREME INDUSTRIES, SIL FILL OR EQUIVALENT, STP LTD
4	DAMP PROOF MATERIAL	ARDEX ENDURA, IMPERMO, DURASEAL, ACCO-PROOF
5	NON METALIC SURFACE HARDNER	ARDEX ENDURA, FOSROC, SIKA, PIDLITE,
6	INJECTION GROUTING	ARDEX ENDURA, FOSROC, SIKA, BASF,
7	RCC WORKS	
8	RMC / DMC	ULTRATECH, LAFARGE, ACC, RMC INDIA
9	BITUMEN	INDIAN OIL, HINDUSTAN PETROLEUM, MANGALORE REFINERIES, BHARAT PETROLIUM
10	STEEL WORK / TMT BARS	IS MARKED TMT BARS OF TATA, JSPL, JSW, RINL OR THEIR AUTHORIZED DEALERS
11	STRUCTURAL STEEL	IS MARKED TMT BARS OF TATA, JSPL, JSW, RINL OR THEIR AUTHORIZED DEALERS
12	AAC BLOCKS	XTRALITE FROM ULTRATECH, AEROCON FROM HIL, SIPOREX INDIA LIMITED, NCL
13	EPOXY MORTAR	ARDEX ENDURA, FOSROC, SIKA, BASF, ULTRATECH, BOSTIK, PIDILITE
14	CC BLOCKS/ FLYASH BLOCKS	SIPOREX, SUNVIK, HIL
15	FRP DOOR FRAME	MEENA, RAWJI, FIBERTECH, ASTRALWIN DOORS
16	FRP DOOR SHUTTERS	MEENA, RAWJI, FIBERTECH, ASTRALWIN DOORS
17	PVC DOOR SHUTTER AND DRAME	RAJASHREE, SINTEX DUROPLAST
18	WOODEN FLUSH DOORS	KITPLY, CENTURY, GREENPLY, ARCHID PLY, KUTTY
19	WATERPROOF PLY	DURO, KITPLY, CENTURY, ARCHID PLY, GREENPLY
20	COMMERCIAL PLY.	DURO, KITPLY, CENTURY, ARCHID PLY, GREENPLY
21	LAMINATE	FORMICA, DECOLAM, CENTURY, ROYAL TOUCH, GREENLAM
22	HIGH PRESSURE LAMINATES	MERINO, GREENLAM, DECOLAM, CENTURY, ROYAL TOUCHE
23	PRELAMINATED PARTICLE BOARD	NOVOPAN, KITLAM, ARCHID PLY, CENTURY
24	NATURAL WOOD VENEER	ARCHID, ANCHOR, DURAIN, KITPLY, NATIONAL ACTION TESA
25	POLYSTER POWDER COATED SHADES	NEROLAC, BERGER, AKZONOBEL, ASIAN
26	GYPSUM BOARD	SAINT GOBAIN, LAFARGE, BORAL BOARD, ARMSTRONG
27	FALSE CEILING CALCIUM SILICATE	ARMSTRONG, AEROLITE, RAMCO

Sl No	Materials	Approved Make
28	FALSE CEILING MINERAL FIBRE	SAINT GOBAIN, ARMSTRONG, ANUTONE
29	MELAMINE POLISH	ASIAN PAINTS, MALAMYNE GOLD WUDFIN OF PIDILITE INDUSTRIES TIMBERTONE OF ICI DULUX
30	DOOR HARDWARE	DORMA, HAFELE, KICH, OZONE, DORSET, BACKERS FS, GODREJ
31	HYDRAULIC DOOR CLOSERS / FLOOR SPRINGS	DORMA, KICH, GODREJ, HARDWYN, DORSET
32	LOCKS / LATCHES	GODREJ, HARRISON, LINK, DORSET, DORMA
33	FIRE CHECK DOOR	BANGALORE PROTECH, SHAKTI, NAVAIR, KENWOOD, VEROTECH
34	SMOKE SEAL STRIP	IMPROTED PROMAT / ASTRO FLAME
35	FIRE RATED HARDWARE	DORMA, INGERSOL RAND, GEZE, DORSET BACKERS FS
36	STAINLESS STEEL SCREWS FOR FABRICATION AND FIXING OF WINDOWS.	KUNDAN, PUJA, ATUL, GRIPWELL, NAKODA
37	BUTT / BALL BEARING HINGES	HAFFLE, DORMA, DORSET, GODREJ
38	PIANO HINGES	JOLLY, GARG, AMIT, JYOTI
39	NUTS BOLTS/ SCREWS	KUNDAN, PUJA, ATUL, IT, BOLT MASTER, GRIPWELL, NAKODA
40	ACOUSTIC INSULATION	U.P. TWIGA LTD, LLOYD INSULATION, SAINT GOBAIN, ARMSTRONG
41	GLASS/ REFLECTIVE GLASS	MODI FLOAT, SAINT GOBAIN, ASAHI, GLAVERBEL
42	UPVC WINDOWS / VENTILATION	FENESTA, REHAU, ENCRAFT, DUROPLAST WINTECH, NCL, MADHU INDUSTRIES, LG
43	SOURCE FOR TEMPERING REFL. GLASS / CLEAR	FUSO, SAINT GOBAIN, GURIND, IMPACT SAFETY
44	FIRE RATED GLASS	PYOSWISS OF SAINT GOBAIN, PYRAN OF SCHOTT, PILKINGTON
45	VITRIFIED TILES	KAJARIA, JOHNSON, RAK CERAMICS, SOMANY, NITCO, ORIENT BELL
46	GLAZED CERAMIC TILES	JOHNSON, SOMANY, KAJARIA, NITCO, ORIENT BELL
47	FALSE FLOOR	HEWETSON, UNIFLOOR, UNITILE, KEBAO, PINNACLE
48	ENGINEERED WOOD/LAMINATE FLOORING	ARMSTRONG, WERNEL, PERGO, ACTION TESA, WELSPUN
49	CEMENT CONCRETE PARKING TILES	NITCO, NTC, HINDUSTAN, PODDAR EUROCON, DAZZLE ULTRA.
50	INTERLOCKING CONCRETE BLOCKS	NITCO - (ROCKARD), BHARAT - (NILSAN) REGENCY, BESANT BEATONS
51	CLAY TILES ON ROOF	KENJAI, JOHNSON, COMMONWEALTH TRUST (IND) LTD

Sl No	Materials	Approved Make
52	TILE ADHESIVE	ARDEX ENDURA, CICO, PIDILITE, PERROUS, FOSROC, SIKA
53	CHEQUERED TERRAZO TILES	NITCO, BHARAT, PODDAR
54	SYNTHETIC CARPET TILES	TOLI, HOLLITEX, STANDARD CARPETS, WELSPUN
55	GLASS MOSAIC TILES	ITALIA, PALLADIO, BISAZZA
56	PAINT/PRIMER/OIL BOUND DISTEMPER ACRYLIC PAINT	ASIAN PAINTS, ICI DULUX, NEROLAC, BERGER
57	WATERPROOF CEMENT PAINT	SNOWCEM INDIA LTD, ASIAN PAINTS, ICI DULUX, NIPPON PAINTS
58	SYNTHETIC ENAMEL PAINT	BERGER, NEROLAC, ASIAN, ICI DULUX
59	ACRYLIC TEXTURED PLASTER	ASIAN PAINTS, ICI DULUX, NEROLAC, BERGER
60	FIRE RETARDANT PAINT	JOTUN, HILTI, AKZONOBEL, NIPPON
61	MIRROR GLASS	MODI GUARD, SAINT GOBAIN, ASAHI, ATUL, GOLDENFISH
62	ANTI CORROSIVE BITUMASTIC PAINT	ASIAN / BERGER / SHALIMAR
63	EPOXY PAINT	BERGER PAINTS, ASIAN PAINTS, MRF, ARDEX ENDURA, FOSROC
64	EPOXY COATING	ARDEX ENDURA, BASF, FORSOC, LATICRETE, MRF
65	STRUCTURAL SILICON/ WEATHER SILICON	DOW CORNING / WACKER / GE
66	ACRYLIC EXTERIOR PAINT	ASIAN PAINTS, ICI DULUX, BERGER, NEROLAC
67	ALUMINIUM SYSTEMS / ANODIZED ALUMINUM FITTINGS FOR DOORS / WINDOWS / WINDOWS	HARDIMA, EVERITE, SIGMA (ISI MARKED) JYOTHI
68	STAINLESS STEEL FITTINGS	DORSET, GODREJ, DORMA, OZONE, KITCH
69	ALUMINIUM SECTIONS	JINDAL, HINDALCO, INDALCO
70	FRICTION STAY HINGES	EBCO, HAFELE, SEVAX
71	ALUMINIUM COMPOSITE PANEL (ACP)	ALUCOBOND, EUROBOND, DURABUILD
72	E.P.D.M. GASKETS	ANAND / ROOP / BOHRA / HANU / AMEE RUBBER
73	WATER PROOFING COMPOUND	SIKA, ACCOPROOF, IMPERMO, FOSROC PIDILITE, ARDEX ENDURA, BOSTIK, BERGER, KRYTON
73 (a)	INTEGRAL CRYSTALLINE ADMIXTURE	KRYTON, PENETRON / XYPEX
73 (b)	INTEGRAL CRYSTALLINE SLURRY	KRYTON, PENETRON / XYPEX

Sl No	Materials	Approved Make
73 (c)	FIBRE REINFORCEMENT ELASTOMERIC LIQUID WATERPROOFING MEMBRANE	KRYTON, PENETRON / XYPEX
74	MEMBRANE WATER PROOFING SYSTEM	BASF, TEXSA, WR GRACE, PIDILITE, HYDRO TECH LTD. ARDEX ENDURA, BOSTIK, FOSROC
75	POLYMER BASED CONTENTIOUS WATERPROOF	ARDEX ENDURA, BASF, MC-BAUCHEMIE, SIKA, FOROC, PIDILITE, BERGER
76	WATER STOPS	ARDEX ENDURA, HYDROTITE, BASF, HYDROSWELL, PIDILITE, BOSTIK
77	PVC PERFORATED PIPES	REX POLYEXTRUSION LTD, AKASH ENTERPRISES, ZENPLAS PIPES PVT. LTD
78	MS PIPES	TATA, JINDAL, APOLLO
79	POLYSULPHIDE SEALANT	PIDILITE, CHEMETALL-RAJ, FOSROC, CHOKSEY CHEMICALS, TUFF SEAL
80	BITUMEN IMPREGNATED BOARD	SHALITEX OR EQUIVALENT
81	POLYETHYLENE BACKER ROD	SUPREME IND. LTD. OR EQUIVALENT
82	FALSE CEILING MEMBERS (PERIMETER, CEILING SECTION, TERMEDIATES, ANGLES ETC.)	ARMSTRONG, GYP. ROCK (SAINT GOBAIN)
83	WELDING ROD	ADVANI, ESAB
84	METAL DECK SHEET	TATA, JINDAL, ALFA, KAILASH ROOFIN,JSW, ARCELOR MITTAL
85	SHEAR STUD / CONNECTOR	KOCO ,STUD CRAFT , L & J TECHNOLOGIES , ARS INFRA SOLUTIONS
86	CLAMP. REBAR, CHEMICAL FASTENER	HILTI, FISCHER, WURTH, AXEL
87	ANCHOR FASTENERS / BOLTS	HILTI, FISHER, CANON, BOSCH, AXEL
88	MASKING TAPES	3M, SUN CONTROL, WONDER POLYMER
89	DASH FASTENERS	HILTI, FISHER, CANON, BOSCH, AXEL
90	STAINLESS STEEL BOLTS, WASHERS AND NUTS	ATUL / HILTI / GRIPWELL / NAKODA
91	GRC JALI	TERRAFIRMA, ECOVISION, BIRLA WHITE GRC, EVEREST GRC
92	STAINLESS STEEL	SALEM, JINDAL, SAIL

Sl No	Materials	Approved Make
93	POLYCARBONATE SHEET	DANPALON, ALCOX, POLYGAL, V.A. CORPORATION, ALFA, GE, LEXON, TUFLITE
94	PT STRANDS	DP WIRES, TATA, USHA MARTIN
95	ADHESIVE (MANUFACTURE SPECS)	ARDEX ENDURA, DUNLOP, VAMORGANIC, SIKA, FOSROC, PIDLITE, BOSTIK
96	GROUTS	KERAKOLL, WEBER, ARDEX ENDURA, BOSTIK, FOSROC, PIDILITE
97	SOLAR STUDS / MEDIAN MARKERS	3M, AVERY DENNISION, NIKKALITE
98	POLYCARBONATE CONVEX MIRRORS, RUBBERISED ROAD HUMP	UNIQUE SAFETY SOLUTIONS
99	AIR TRANSFER GRILLS	COOL GRILLS PUNE, SYSTEMAIR INDIA
100	THERMAL INSULATION TREATMENT	PIDILITE, BASF, BERGER, ARDEX ENDURA
101	VITREOUS WC / WASH BASIN	PARRYWARE, HINDWARE, CERA, JAQUAR
102	GULLYTRAPS	PERFECT, PARRY
103	STAINLESS STEEL SINKS	NILKANTH, AMC, COBRA, NIRALI, DIAMOND, HINDWARE
104	C. P. BRASS FITTINGS	JAQUAR, HINDWARE, PARRYWARE, WATERTEC.
105	GI PIPES	TATA, JINDAL, HISSAR
106	GI PIPE FITTINGS	ZOLOTO, UNIK, HB, ICS
107	RCC PIPES	INDIAN HUME PIPE, MOHAN HUME PIPE, BANGALORE CEMENT PIPES
108	SPUN CAST IRON COVERS & GRATINGS	NECO, SKF/ BENGAL IRON CORPORATION
109	SPUN CAST IRON PIPES	NECO, SKF/ BENGAL IRON CORPORATION
110	SPUN CAST IRON FITTINGS	NECO, SKF/ BENGAL IRON ORPORATION
111	SWR PVC PIPES AND FITTINGS	SUPREME, FINOLEX, PRINCE, ASTRAL
112	CPVC PIPE AND FITTINGS	SUPREME, ASHRIVAD, FINOLEX, PRINCE, FLOWGARD, ASTRAL
113	UPVC PIPES	SUPREME, PRINCE, FINOLEX
114	WATER SUPPLY VALVES	ZOLOTO, LEADER, ARCO

Sl No	Materials	Approved Make
115	CI MANHOLE COVER	NECO, BIC
116	SFRC COVER AND GRATING	TULSHI CONCRETE, KK, ADVENT, NEWTECH
117	AIR RELEASE VALVES	KIRLOSKAR, RBM, KARTAR
118	CI DOUBLE FLANGE SLUICE VALVE	KIRLOSKAR, RBM, KARTAR
119	PLASTIC ENCAPSULATED FOOTREST	KK INDIA, KGM, ACCURATE BUILDCON
120	GUN METAL VALVES	ZOLTO, LEADER, SANT, ANDCO INDIA
121	CI DOUBLE F LANGED SLUICE VALVES	KIRLOSKAR, IVS, BURN, ZOLOTO, LEADER
122	CI DOUBLE FLANGED NON-RETURN VALVES	KIRLOSKAR, FLUIDTEH, ZOLOTO
123	SANDWICH PU PANELLED ROOFING SHEETS	LLOYD INSULATION (INDIA) LTD., JINDAL, MECTEC PVT LTD., TATA
124	GALVALUME SHEET	LLOYD (INDIA) LTD., JSW, TATA BLUESCOPE
125	PEB FABRICATORS	LLOYD INSULLATIONS (INDIA) LTD, M/S KIRBY BUILDING SYSTEM, TATA BLUESCOPE, PEBSPENNAR

NOTE: Equivalent material and finishes of any other specialized make may be used, in case it is established that the brands specified above are not available in the market but only after approval of the alternate brand by the Engineer-In-charge, IIT DHARWAD.

PART-C

E & M WORKS

Name of the Work: **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**

FORM-Q"

SPECIAL CONDITIONS FOR ALL SPECIALIZED E&M COMPONENTS

The applicant should himself meet the eligibility conditions for the respective E&M components

The main contractor should be himself eligible (as per eligibility criteria) for executing any specific minor component. In such cases the main contractor also has to submit the documents as per eligibility criteria mentioned of individual E&M component.

The main tenderer have to submit the following documents for association of contractor before execution of particular component of work.

In the event of the concerned E&M agency not performing satisfactorily or failure of associate contractor to complete the E&M work, the main contractor on written directions of the department, shall remove the Associate contractor deployed on the work and shall submit name of new associate agency who fulfil the conditions mentioned in the NIT to execute the leftover work without any loss of time or variation in cost to the department. **Such associates shall also give an undertaking along with the main tenderer but both of them together will stand guarantee for the equipment's already supplied for which payment has been released by the department in part**. If any equipment supplied for the work, during the currency of the earlier Associate contractor and paid partly by the Dept., becomes redundant / not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to Department. No change of Associated Contractor will be allowed without prior approval of the Engineer-in-charge of the work.

In respect of all works i.e., IEI & Fans etc.**,** the materials shall be procured only from the original equipment manufacturers / authorized dealers of OEM. The contractor shall submit all documentary details in fulfillment of these conditions regarding procurement of materials including relevant test certificates.

It will be obligatory on the part of the contractor / tenderer to upload the tender documents for all the component parts.

The main contractor shall be responsible and liable for proper and complete execution of the E & M work and ensure coordination and completion of both civil and E & M work.

The main contractor has to enter into agreement with contractor associated by him for execution of minor component.

The associate contractor shall attend the inspection of the work by the Engineer-in-Charge of E&M works as and when required.

General Conditions and Guidelines for E & M Works Relating to Day-to-Day maintenance

1. The scope of work is proposed to provide general service maintenance and operational services for Electrical Installations at IIT Dharwad as per the items of work specified. The contractor by deploying suitable manpower for operation and maintenance, manning & supervision shall ensure efficient maintenance of the system. The contractor shall also undertake periodic preventive maintenance as per standard trade practice & manufacture's recommendation.
2. In case any major defects or abnormalities are found in the system during daily/ periodic checking they should be reported to the Engineer-in-Charge.
3. **The dismantled material after replacement of new material should be shown to JE /AE after prior approval concerned JE/AE, it can be taken away from site**.
4. The contractor shall engage his/her own labor and shall not outsource. Any claims such as their permanency etc. raised by the workers engaged for this work is to be settled by the contractor himself and Department shall not be responsible. In case of any accident the Department cannot be held responsible for the damage. The contractor should have adequate insurance for the workers against such exigencies. The contractor shall ensure that

all safety norms and procedures are followed diligently by his staff.

5. This contract includes emergency services excluding natural calamities whenever required during the currency of the contract. Nothing extra shall be paid on this account.
6. No advance payment will be made to the contractor.
7. No T & P will be issued to the contractor.
8. The Engineer-in-Charge has the right to remove/ terminate the services of any worker without assigning any reason. Even the contract can be terminated at any time without assigning any reason, before the completion period of the contract. The contractor shall have no claim on such occasion.
9. The workers can be deployed in shift duty as per the requirements of the Department at the discretion of the Engineer-in-charge.
10. If the behavior of a worker is not found satisfactory, i.e. misbehavior with Department staff, occupants of quarters or the general public, the contractor has to change the labor within 3 days, failing which, the Engineer-in-Charge has the power to cancel the contract, and the contractor shall have no claim of compensation. Any legal issues arising out of the behavior, words and deeds of the staff of the contractor shall be the responsibility of the contractor.
11 The contractor has to arrange within the tendered cost, all sundry material like detergent, duster cloth, fasteners (like screws, bolts, nuts), fuse wire, insulation tape, wire pieces for inter connection inside switch boards, lubricants etc., and materials for replacement like modular/piano type switches, sockets, c/fan regulators, cover plates, MCBs, RCCBs, control gear for LED streetlights etc. Materials like a ceiling fan, exhaust fan, LED fittings etc. for replacement shall be provided by the department as per BOQ attached with this tender.

13 Safety of the staff employed will be the responsibility of the contractor who must ensure the safety of the staff adequately. This office will not be responsible for any mishap, injury / death of the staff.

14 Any damage caused to the fittings/ switch gears/ installations/ machinery as a result of execution of this work shall have to be made good by the contractor at his own risk and cost.

15 The contractor shall submit the name, proof of address (Aadhaar card) address & character certificate from a responsible person for the worker/ staff employed by them at the site of work to the Engineer-in-Charge before start of the work.

16 The contractor shall submit the attested photocopy of wireman/ electrician license & show the wireman's license in original of wireman employed by them to the Engineer-in- Charge before the start of the work.

17 The staff deployed by the contractor should have a minimum two years of experience in the trade.

18 Minimum number of staff to be deployed for each sub work shown separately is indicative only. The staff should attend any work under any sub work as per requirement.

19 Make and model of the materials to be replaced like modular accessories, switch gears etc shall be of the same as existing. For discontinued models, next suitable model shall be provided.

SPECIAL CONDITIONS for Maintenance of IEl & Fans, Street Lights, Light Circuit/Switch and socket etc.

Total Plinth area of buildings to be maintained in the campus = 1,62,807 Sq.mtr.

1. The contractor shall be bound to carry out the work including but not limited to applicable clauses of CPWD Maintenance Manual 2023 (amended up to date), Central Electricity Act

2003 and CPWD specifications- internal, external, substation, DG sets, AFAS.

2. The scope of work includes maintenance of installations including the works such as over hauling /re-winding of fan / fixtures, repair/ replacement of modular/piano type accessories, call bell, capacitors, MCBs, RCCBs/RCBOs, burned out wiring etc.

3. C/fan, Exhaust fan etc required for replacement shall be arranged by the department through the items included in the schedule of quantity.

4. The materials stipulated in **item No 5** of schedule of quantity are for the use in work as and when required. The agency has to supply materials mentioned in the schedule of quantity as per the requirement only. 25% of the materials stipulated shall be supplied initially so that there will not be any delay in the maintenance work because of non-availability of materials and balance quantity shall be supplied as per the requirement. The agency has to assess the requirements and any additional items if any required shall be intimated to the department for arranging the same in time.

5. The agency has to keep a record of materials supplied and used in the work and shall be produced for verification at any time. Record of dismantled materials also to be maintained by the agency.

A. Electrical Complaints to be attended as per IIT DHARWAD (indicative purposes only)

Sl. No.	Subcategory	Complaint
1	Accessories	Bell faulty
2	Accessories	Bulb Holder Faulty
3	Accessories	Lamp Shades to be changed
4	Accessories	MCB Malfunctioning
5	Accessories	Regulator faulty
6	Accessories	Replacement of Bulb
7	Accessories	Replacement of CFL
8	Accessories	Replacement of Tube
9	Accessories	Socket/Switch Faulty
10	Accessories	Tee/Inspection Box Covers required
11	Accessories	Tube not working
12	Emergency complaints	Leakage of Current
13	Emergency complaints	No power (Inside House)
14	Emergency complaints	No Power (Portion of Building)
15	Emergency complaints	No power (portion of House)
16	Emergency complaints	Out Break of Fire
17	Emergency complaints	Sparking/Short Circuit
18	Fittings and Equipment	A.C. faulty
19	Fittings and Equipment	Aqua Guard/RO Faulty
20	Fittings and Equipment	Ceiling Fan Faulty

21	Fittings and Equipment	Ceiling Fan to be changed
22	Fittings and Equipment	Exhaust fan faulty
23	Fittings and Equipment	Exhaust Fan Louvers required
24	Fittings and Equipment	Exhaust Fan to be changed
25	Fittings and Equipment	Gate light faulty
26	Fittings and Equipment	Geyser faulty
27	Fittings and Equipment	Refrigerator Faulty
28	Fittings and Equipment	Water Cooler Faulty
29	Fittings and Equipment	Water Pumpset Faulty
30	Others	Lobby/Corridor Light Faulty
31	Others	Miscellaneous
32	Others	Staircase/Common area Light repair
33	Others	Street/Compound Light Faulty
34	Others	Wiring to be changed
35	Periodic	Cleaning Electrical installations, fans etc.

Other work to be carried out in the campus are as follows.

1) **DG Sets**
2) **Firefighting systems include Maintenance of Wet riser and Manual Fire alarm System.**
3) **HVAC and Ventilation system.**
4) **Sewage Treatment plant.**

These works shall be carried out as per the following specifications.

A. General conditions for Operation and general upkeep of DG set, Firefighting system etc.

i) DG Set

DG set is provided in the campus for feeding essential supply to Lifts, streetlights, water supply pump sets, staircase lights etc. Routine checks as per the recommendations of the manufacturer shall be carried out by the agency. Any abnormality noticed should be informed to the department. Annual service contract for the DG set with control panel, “B” check etc has to be arranged by the contractor through OEM authorised service provider. Consumables like cotton waste, distilled water for battery, materials for ‘B’ check etc shall be provided by the agency. Cost of major repair works, replacement of spare parts etc shall be provided by the department.

Condition and scope for Annual service contract of DG set

The authorized service provider of the DG set must make a minimum of 2 scheduled visits in a year. The maximum lead time for reporting shall be 4 hrs. The agency must keep the DG set and its control panel in good working condition.

ii) Operation of Fire Fighting and Fire Alarm System:

TERMS AND CONDITIONS:

1. The work shall be carried out as per IIT DHARWAD general specification part –I Internal 2005 & Part-II External 1994 & Part- VI Fire alarm system 2018 & Part- V Wet riser & sprinkler system 2020 as amended up to date and as per local fire service by laws.
2. The contractor has to execute the work through experienced ITI/Diploma qualified or suitably qualified wireman/operator in the trade with minimum qualification of 12th standard, relevant document for the same shall be submitted to the Engineer-in-charge and the contractor shall ensure that all the persons executing the electrical work has valid electrical license issued by the competent authority. Consequences arising due to the fault or fake documents of staff deployed by the contractor to comply with the above conditions will be the responsibility of the contractor and suitable recovery for the same shall be imposed by the department as per terms and conditions.
3. watch and ward of the equipment shall be the contractor's responsibility and any loss or damage to the equipment shall have to be made good/ repaired/ replaced as per the original standards/ specification of the department, by the contractor at his own cost and nothing extra shall be paid by the department.
4. While taking over the installation for maintenance purposes after award of work the contractor shall check the installation and bring to the notice of department the deficiencies noticed if any in the installation. On the expiry of contract/termination of the contract, the contractor shall hand over back the installation in proper working conditions with all the fittings in intact position & in working order.
5. The contractor shall work at his own responsibility. In case of any accident, misshaping, disablement, no compensation shall be paid to be the contractor or his employee by the department.
6. The contractor shall submit the list of staff to be engaged by him along with their qualification & experience before commencement of work. The staff to be deployed shall be interviewed by the Assistant Engineer(E)-in-charge & only those staff shall be allowed on the site for work who are considered suitable & competent by the department.
7. System shall have to be tested satisfactorily working once in a day and the same shall be kept on the round the clock working condition. The details of testing the equipment should be recorded in a register and signed by the operator or supervisory staff of the contractor daily.
8. No. T&P shall be supplied by the department. The firms shall arrange all the necessary T&P for the work & nothing extra shall be paid by the department.
9. Contractor shall be fully responsible for any kind of loss/ theft of the items as per **Inventory**. In case of any theft, the matter should be brought to the notice of the department and report should be lodged with police authority and the system should be put back to the normal running conditions after installing the new equipment as per the original specification within 24 hours, otherwise the same be got done at the risk and cost of the contractor.
10. The contractor has to deploy the following minimum staff for operation & maintenance of the equipment's.
    a) **Operator cum wireman- 1 Nos**

11. The equipment's shall have to be kept in proper working condition for emergency need. In case of any fault in the control panel, the firm has to inform to the department within 24 hours.
12. The cleanliness of the control panel, down comer risers & other related equipment's etc. shall be the responsibility of the contractor. The material such as cotton, waste, cleaning powder etc. shall have to be arranged by the firm.
13. The firm has to operate the system in case of fire or any other emergency and make every effort to keep the system in operation. The persons deployed should be trained to tackle the situation any consequences arising due to the default shall be the contractor's responsibility.

14. All the dismantled material shall be returned to the department.

15. The firm has to give demonstration of the equipment, once in a fortnight to the department as per the instruction of the engineer in charge.

16. The person who is on duty shall also help in rescue passengers trapped in the lifts if, required at site.

17. The department is at the liberty to discontinue/ terminate at the contract any time, if the performance is not found satisfactory or not in accordance with the terms & conditions of the contract. No claim of any sort shall be entertained due to premature closure/termination of contract. The decision of engineer-in-charge regarding above shall be binding on the contractor.

18. Inventory of the system & installation shall be prepared and signed by both the parties.

19. The logbooks for pumping sets and prescribed Performa sheets for various maintenance to be filled by the contractor, shall be supplied and maintained by the contractor at site as per direction of Engineer-in-charge.

20. The contractor shall be fully responsible for the integrity and character of the staff engaged. Any staff not considered suitable for the job shall have to changed immediately by the contractor.

21. If any scheduled check or preventive maintenance and prescribed, exercise is not carried out timely, suitable recovery shall be made from the bill and the decision of the engineer in charge in this respect shall be final and binding on the contractor.

22. The contractor has to inform the department in case of failure immediately in writing. If any system is not found working while checking by the department & not informed by the contractor the following deduction will be made from the contractor bill and the decision of the Engineer-in-charge in this regard shall be final.

23. Practical demonstration about working of firefighting fittings shall be arranged by the contractor as & when desired by the department for the occupants without any extra cost. During the state of actual fire, to fight the fire shall not be within the preview of the duties of the staff under this contract. However, the staff on duty at that time shall always be available & assist in fire fighting for the requirement stated in the contract. All the exercises & preventive maintenance to be carried out are to ensure

availability of continuous water supply at the hydrant outlet & sprinklers, when put to operation & proper functioning of the fittings/system.

24. The staff to be deployed for the work shall be agency's employees only for all purpose & the agency shall be responsible for payment of their wages & all fringe benefits. The staff shall not have any claim of any sort on the department at any time and cannot claim to be the department's employee at any stage & shall have no right of job in the department.

25. The contractor will observe safety norms as applicable for working staff. The department will not be responsible on any way and any accidental liabilities will be the responsibility of the contractor.

26. Contractor shall have full backing of manufacturer with regard to technical know-how and spares and in the case the contractor fails to perform satisfactorily, manufacturer will complete the job with same terms & conditions.

27. In case of any fault / defects in the system occurs/noticed it should be reported to the firm over telephone and a record of the same need be made in the fire logbook with date and time etc. note at them in and the matter should be reported to JE(E) in charge immediately.

28. The following materials are to be supplied and used by contractor.
    a) Grease
    b) Cotton
    c) White lead / Shellac
    d) Gland Rope
    e) Distilled water
    f) Polishing materials
    g) Logbooks and service reports

29. Except above, any other materials/ spares required for proper maintenance of the system will be supplied free of cost by the Department which shall be replaced by the contractor without any extra cost.

35.1 ITEMS NOT COVERED IN THE SCOPE OF THIS CONTRACT

1) Replacement of wet riser pipeline, foot valves, cables.
2) Major Repairs and replacement spares in Diesel engine except routine maintenance, 'B' check and minor repairs.
3) Rewinding of motors.
4) Painting of installation.

B. **General conditions for Operation and maintenance of Wet riser and Manual Fire alarm System**.

ADDITIONAL CONDITION FOR FIRE FIGHTING & FIRE ALARM SYSTEM

1. The work shall be carried out to the satisfaction of the Engineer - in charge and the agency has to keep the system in working condition.

2. They shall carry out diagnostic and checks on the FA System to ensure the healthy condition and functional availability of expected service all the time including getting the same acknowledged as required. Spares like PCBs, relays, MCPs, Hooters etc shall be arranged by the department. Consumables like solder, resistances etc shall be arranged by the agency without any extra cost
3. The agency shall provide the services by engaging staff mentioned in below and schedule.
4. Name and other details of the staff employed shall be communicated to the JE (E) before commencement of the work and the staff should possess necessary identity card.
5. Necessary attendance register is required to be maintained and should be produced for verification.
6. Payment will be made quarterly only.
7. Deputing technician trained and technically qualified to check the complete system 2 visits in a month and submit Test report to the Engineer-in-Charge.
8. Every two weeks checking for the good working condition of diesel pump set.
9. Operating one or two hydrant valves and check the performance of jockey pump and main pump once in a month.
10. Running all the pumps every week.
11. Every two months polishing the brass / GM parts.
12. Lubricating the moving parts every two months i/c consumables.
13. All spares required for repair of automatic control panel will be borne by the department and labour is included in the above contract.
14. Arrest water leaks in the delivery main i/c isolation and control valves priming tank intervals except underground pipes once in a month.
15. Greasing of all threaded parts like wheels in hydrant valves i/c supplying polishing materials once in a month.
16. Polishing of all brass parts and hose boxes with respective polish i/c supplying polishing materials one in a month.
17. Powdering of the rubber hose wound on the hose reels once in a month.
18. Top up batteries electrolyte liquid with distilled water every week i/c consumables.
19. Brushing the flexible canvas hose and check for cracking once in a month.
20. Supply of necessary rubber coating for landing valves lubricant oil for diesel engine bulbs and fuses for the control panels.
21. The firm shall attend to call backs after duty hours if any, without any extra charges.
22. Renew and replace the gland packing whenever necessary.
23. Repairing the automatic panel for the diesel engine without extra cost but spares required for replacement, if any will be arranged by the department.
24. The firm should maintain the logbooks for preventive and breakdown maintenance and the work carried out should be entered with the signature of the Engineer -in - charge.
25. The diesel driven pump set should be maintained strictly as per the manufacturer’s specifications.
26. **The period of work is One year and Extendable up to Two years.**
27. Grease, Cotton waste, white lead / shellac, gland rope and distilled water are to be supplied and free of cost by the firm.
28. Except above, any other materials/ spares required for proper maintenance of the system will be supplied free of cost by the Department which shall be replaced by the contractor without any extra cost.
29. Maintenance and up keeping of every associated equipment and installation such as main control panel, zonal/ sectoral panels, smoke diagrams and ensuring their proper installation and functional availability at the time of need.

30. Carrying out diagnostic tests and checks in the FA system, zonal and sectoral panels, associated sub systems and installations (as per Annexure A) to ensure their healthy condition and availability of expected services all the time including getting the same acknowledged as required.
31. The working condition of heat detectors. Smoke detector and manual call points shall be done at selected location by heating the detectors as desired by the Engineer-in-Charge.
32. The spare like detectors PCB etc shall be supplied free of cost by the Department. However, the replacement of the same shall be the responsibility if the firm. Minor items like electronic components and distilled water shall be arranged by the conductor.
33. The Contractor has to pay minimum wages, through ECS/Cheque or Online payment only and proof of document to be submitted the office for verification.

The contractor is required to depute the minimum staff as indicated below or as decided by Engineer-in-Charge for the above work: -

For maintenance of the Wet riser and Manual Fire alarm System.

SL. No.	Category of Staff	Qty	Remarks
1	Service Engineer	1 No	As and when required on a Chargeable basis.
2	Fire Technician cum Operator	1 No	1 No in General shift

MAINTANANCE SCHEDULE (SCOPE OF WORK COVERED FOR FOLLOWING EQUIPMENTS AND SERVICES in FIRE FIGHTING, FIRE ALARM SYSTEM)

ELECTRICAL PUMP SET

1 Check for automatic starting under stimulated fire condition.

2 Check for discharge pressure and current drawn by the motor

3 Check for the gland packing and gland leaks

4 Check for conditions of switch and contactor

5 Running of the pump sets to establish normal working parameter.

DIESEL ENGINE DRIVEN PUMPSET

1. Check for automatic starting under stipulated conditions.
2. Check for discharge pressure of water developed by the pump sets.
3. Check for lubricating oil pressure and cooling water temperature.
4. Check water leakage in the foot valve.
5. Check for gland packing and gland leakages.
6. Lubricate the pump set.
7. Check for oil level in the engine crank case and air filter.

8. Check the diesel engine control panel board for proper functioning.
9. Check the specific gravity and level of electrolytic liquid in batteries.
10. Check on all instruments and control panel.

HYDRANT AND WET RISER SYSTEM

1. Check all cut off valves for gland leaks and freeness of spindle
2. Checking of valves position indicators
3. Check all landing valves main seating and gland leaks and ensure that spring locks are in good working condition.
4. Check for freeness of instantaneous locking arrangement and lubricate if necessary.
5. Check all hose boxes for cleanliness and working of locks and hinges
6. Inspect the hose drums for free movements and water leakages during the movement.
7. Inspect the water hose for leakages
8. Checking the air vessel and air release valves for proper functioning.

FIRE ALARM/PA SYSTEM/ 2 WAY COMMUNICATION SYSTEM
Every 15 Days

1. Carrying out diagnostic tests on the main control panel and all sectoral/zonal panel, PA system Amplifiers and 2-way communication master panel, talk back unit set to check the expected functioning and general health of the system and decided by AE(E) in charge.
2. Cleaning the panels etc from the exterior with a damp cloth.
3. Checking the battery condition and ensuring its appropriate charging.
4. Checking the system availability on mains as well as on battery.
5. Checking whether on mains failure system is automatically switched over to stand by power.

Scope of Work of Fire Fighting System

Wet Riser System

1. DAILY CHECKS

1. Operate the bypass valve (water to flow back to sump) & check the operation of the Jockey pump, the Electric fire pump and Diesel fire pump in proper sequence. After Electric fire pump has run for 5 minutes, switch off the Electric supply & watch for operation of diesel pump for 5 minutes and see the performance of all the equipment, if found any equipment working unsatisfactory take corrective measures. Checking has to be done as per require norms.
2. Operation of booster pump and checking the system.
3. Checking the hooter in the pump room.

4. Recording all the various electrical parameters in the logbook.
5. a) Checking the water in radiator of diesel engine. b) Checking the pressure switch. Ensure that the system is in auto mode. c) Checking the pressure gauges.
6. a) Cleaning of all hydrant valves, hose reel and hose boxes, external hydrant, b) Cleaning of pump room i/c inside installation, keeping it dry. c) Cleaning & checking of signage boards.

2. WEEKLY CHECKS

1. Check the hydrants performance; plan operation of these on holidays/ Sundays. Checks to be done in auto mode for – a) External Hydrants b) Internal Hydrants.
2. All hydrants, internal and external should be operated to check the operational readiness of the system. For this purpose, open the hydrant valve of one hydrant at a time and stop the pump after 1 or 2 minutes of operation. Take due precaution to see that there is no flooding of areas within the building during testing. The test should be programmed on suitable day of the week as directed by the Engineer-in-charge.
3. While checking the internal hydrants, verify the free turning of First Aid hose reel at that location. Lubricate if necessary.

3. FORTNIGHTLY CHECKS

1. Checking engine radiator for air restriction if any. Check the condition of drive belts, hose and radiator cap.
2. Cleaning the battery terminals and apply grease/jelly to prevent corrosion and pour distilled water.
3. Checking couplings with pumps for any sign of fatigue.
4. Lubricating and greasing bearing of motors, pumps and Diesel Engine as required. Check the gland seal in pumps for leakages and tighten as necessary and shaft alignment.
5. Checking of all metering arrangement for its working.
6. Check the batteries for its healthy charging and discharging top up the distil water, if lead acid type batteries.
7. Check the engine oil in crankcase and do the topping up as and when required.
8. **Checking and filling the fuel tank with HSD diesel as and when required (Diesel shall be supplied by client department).**
9. Check the valves and glands for dripping of water through gland and take correcting measures, if necessity arrests the leakage.
10. Inspect the electrical control panel and starters to see that all Power/control contacts are clean, all terminations are sound, and all fuses are intact.
11. Inspect all cable end terminations in the fire protection system, including control cables. Tighten as required.
12. Check the wet riser control panel for its healthy working and for loose connection.

4. SIX MONTHLY CHECKS

1. Roll out the hose pipes in an open space and test for leakage by filling with water. After the test, wash the hose and suspend free from an upper floor vertically in shade (not sunshine) so as to drain and dry evenly. When fully dry inside and

outside, brush the external surface and roll up evenly, with the female coupling end at the centre, so that roll out for the fighting operation is quick without twisting. Alternatively, the hose may be folded at mid length and rolled up evenly from the fold so that both the male and female couplings will be on the periphery.

2. Checks the integrity of all gate valves, in the pump room, internal and external hydrants and elsewhere in the Wet riser system. Lubricate if required.
3. Check and change filters of diesel oil, engine (lub.) oil, and coolant and air cleaner element of the engine after checking total hours of operation and manufacturer's recommendation.
4. Check the earth continuity and earth resistance and insulation resistance for motors and record the result at least once in 6 months.
5. Check condition of strainer, suction line hardware etc. Attend as required.
6. Check pump shaft alignment, and condition of anti-vibration mountings for all the pumps sets, (i.e. with their drives).
7. Contractor has to carry out the mock drill for firefighting system along with checking of internal and external yard hydrants, First-aid Hose Reels, Valves, satisfactory working of all types of firefighting pumps, control panel of firefighting system Monthly.

The agency shall have to attend the following works within the tendered amount.

1) The agency should ensure the checking of the firefighting control panel regularly and cleaning of panel by blower ---------- once in a month.
2) Repairs / replacement of lugs, fuses, contactors, overloads, timer's toggles witches, selector switch, voltmeter, ammeter, cable joints associated with the electrical control panel of Firefighting System etc.--- -- as and when required.
3) Repairs and servicing of riser and sprinkler pipeline and all types of valves associated with piping such as balancing valve, butterfly valve, gate valve, globe valve, NRV, modulating and mixing valve, makeup water tanks, etc.- as and when required.
4) The Contractor has to maintain the logbook.

DIESEL ENGINE DRIVEN PUMPSET

1) Check for automatic starting under stipulated conditions.
2) Check for discharge pressure and cooling water temperature.
3) Check for lubricating oil pressure and cooling water temperature.
4) Check water leakage in the foot valve.
5) Check for gland packing and gland leakages.
6) Lubricate the pump set.
7) Check for oil level in the engine crank case and air filter.
8) Check the diesel engine control panel board for proper functioning.

9) Check the specific gravity and level of electrolytic liquid in batteries.
10) Check on all instruments and control panel.
11) 'B' Check for the engine including materials for the same is included in the scope. 'B' check has to be arranged through OEM authorised service dealer of the engine. The 'B' check has to be done minimum once in a year.

iii) <u>Operation of HVAC and VRF System:</u>

The contractor should provide minimum one-day duty off once in a week for the employees working in shifts and shall provide relievers for the employees on off duty / sick / leave. However, in case of emergencies, the contractor shall provide services beyond the above-mentioned hours.

The contractor should deploy experienced manpower to carry out operations and maintenance of 2000 Tr HVAC System and 150 HP VRV System as under:

- Shift -in-charge should be a "Minimum Diploma in Electrical/Mechanical Engineering having minimum 3 years of experience in maintaining and operation of HVAC" OR "ITI Electrical/Mechanical Trade Holder having minimum 6 years of experience in maintaining and operation of Electrical".
- HVAC Shift Assistant should be an ITI Electrical/ Mechanical Holder having minimum 3 years of experience in operation and Maintenance of 1000 Tr and above District Cooling system and Centralized VRV Systems.
- Unskilled manpower shall not be under the age of 18 Years.

The IIT Dharwad shall not permit double shifts for any staff employed by the contractor.

Contractor should provide Uniforms, Shoes, safety & protection gear, Identity Cards, working tools etc. to the staff deployed, at no extra cost beyond the provisions of tender.

Logbook and complaint books, all stationery like registers, sheets, markers, pens and pencils etc. will be supplied by the contractor and no extra payment for these shall be made. Logbook format must be approved by IIT Dharwad Engineer- in- charge.

No work shall be partially or fully stopped for want of personnel or tools or instruments. If such an event occurs, the fine will be levied.

- Contractor will ensure consistency of work and work force, correct troubleshooting, good workmanship, follow all safety procedures and will make all necessary efforts to maintain a healthy environment and reliable services.

- If any of the staff members appointed by Contractor is found to be 'not competent', he has to be replaced by a right person within a stipulated time as given by Engineer in charge, IIT Dharwad.

- All the relevant documents pertaining to staff deployed, like copies of job appointment order with the contractor, address proof, photocopy of ID card etc. and any other details as sought shall be provided to IIT Dharwad, by the contractor under his responsibility for the correctness.

- Wages of the staff deployed should not be lower than as that mentioned in Minimum Wage Act applicable to the respective category/experience, as on date. The ESI, PF, gratuity, bonus etc., labor law, other rules & norms requirements as found required for contracts of this nature should be met. The same details shall be submitted along with a tender bid.

- In no case, the contractor or his/her employees shall claim job / employment with IIT Dharwad. No transport facility shall be provided for the contractor's employees by IIT Dharwad.

- In case of delay, repetition of work, noncompliance, and inadequate staff etc. fine will be imposed as per the fine clause mentioned.

- Safety aspects in workplaces must be followed as per relevant standards & codes. Any accident or damage to death will be treated as negligence & it is purely the responsibility of contractor. IIT Dharwad is not responsible for any accidents or damages to death. Safety of all the staff under this contract is the sole responsibility of the contractor.

- Contractor is responsible for the behavior & conduct of his workmen and hence they should be properly educated and controlled.

Deployment:

S.No.	Manpower	Shifts (Timings)	Working Days in a week
1.	Shift-in-charge	in all the 2 Shifts (i.e. from 6:00 am to2:00 pm, 2:00 pm to 10:00 pm	All days in a week
2.	Shift Assistant	in all the 2 Shifts (i.e. from 6:00 am to 2:00 pm, 2:00 pm to 10:00 pm)	All days in a week
3.	Unskilled	in General Shift (i.e. from 9:00 am to 5:30 pm)	6 days in a week

Details of work

1) To maintain the 2000 Tr HVAC chiller plant and 150 HP VRV systems at individual facilities and units, Associated Ahu's (Air handling units), Ducting Networks, Air Balancing, Control Systems, dampers at individual buildings, including complaint management etc. installed at all utility areas within the campus and the buildings, flats, etc. and to Operate and Maintain water pumps at IIT Dharwad.
2) The contractor/ Site in charge posted should attend and available in the IIT Dharwad campus to attend the work 24x7 on all days (if in case any person goes

on leave qualified alternate person shall be report only after handover of the charge of duty The on-duty person shall be relived).

3) HVAC installation means Chiller units, Circulation Pumps, Feed pumps, Cooling towers, AHU's, Dampers, Ducting network, Chilled water Pipelines and return lines, connected control panels etc.
4) It will be the duty of the contractor to see that HVAC Units and VRV units are operated regularly; exhaust fans of ventilation system and machineries are operated smoothly.
5) The contractor will monitor power supply voltage regularly. It will be the duty of the contractor to see that the Chiller units which is under AMC (Annual Maintenance Contract) is maintained in excellent condition and switch on the chiller units and ventilation units as and when the power supply fails or on other demands and ensure continuous supply of air round the clock.
6) The contractor should ensure that all the fans and electrical fittings need to be cleaned regularly at least once in a month.
7) The contractor possessing authorization from OEM for HVAC/VRV and having enough work experience shall employ necessary number of qualified, healthy, and talented electricians to attend all the above-mentioned electrical works (as per qualification stated in the BOQ) should be made available to undertake the electrical maintenance work. A copy of their certificates with originals may be produced in this office for verification.
8) The contractor shall provide tools necessary for the work and no work should be left un- attended for want of tools.
9) The contractor has the responsibility to provide all safety garments, equipment's, tools etc.to his staff or the persons dealing with work.
10) The Contractor shall ensure that all fittings are working properly, and all items required for replacement will be provided by the office as and when required. For items needed for replacement, the Contractor shall furnish the requirement to the Office of IIT Dharwad for making necessary provisions. The item replaced shall be returned to the stores (Issue) section of the Institute.
11) Maintaining a register for all activities detailing date, time, item description, quantity complaints diagnosis, time of completion of work etc. This register will be daily shown to the authorized staff of IIT Dharwad and countersigned to acknowledge the activities attended to reflect daily progress.
12) The contractor shall ensure that all energy efficient appliances, spare parts should be replaced as per the standards of approved make/ brand by PWD, KPTCL or ESCOM such as BIS, BEE, ISI, IEEE, ISO etc.
13) The Contractor shall ensure the type of works to be taken place in IIT Dharwad campus on visiting the Site and must Prepare the quotation based on site inspection only.
14) The work of the Contractor will be supervised by the authorized representative Junior Engineer- MEP of IIT Dharwad.
15) Instruments: Earth tester, Tong tester, Megger for insulation resistance measurements, Lux meter, Temperature gun (for remote recording) to be kept at site office all time.
16) The power factor of the installation must be maintained / monitored daily and monthly as per the statutory requirements of KPTCL / HESCOM.
17) Due to negligence of operator if any, "the power factor" goes below 0.9 lag during the month, P.F. penalty will be imposed and recovered from the monthly maintenance bill (as per rate of Electricity Board.)
18) The operating / Supervisor staff shall possess the Knowledge of firefighting and first aid.

19) The operating/supervisor personnel shall have the basic Knowledge and technical skill of the HVAC / VRV equipment and shall be capable of independently carrying out the emergency repair works on generator/ AMF panel.
20) All the accessories, equipment comprising of batteries, battery chargers. Control panel, switch boards shall be operated and maintained by the agency.
21) The contractor / operator / supervisory personnel shall have a clear working Knowledge of the various HVAC circuits and shall not meddle / alter the electrical circuits without the permission of the Engineer in charge.

Scope of Work

1. The Operation and Maintenance envisage all the required tasks to ensure
   - Maximum system availability.
   - Most efficient, effective, and optimum usage of electrical system.
   - Enhance the life expectancy of equipment.
   - Regular operation and maintenance of equipment.
   - Compliance with safety rules and regulations.
   - Preventive maintenance / scheduled maintenance.
   - Break down maintenance.
   - Maintaining uninterrupted power supply.
   - Maintenance of proper records of operation and maintenance (Logbook, Registers, checklist, etc., shall be approved by IITDh)
   - Assistance to IITDh in expansions and modification.

Contractor shall deploy a HVAC engineer with minimum 15 years of experience in the relevant filed shall be deployed once in a month to inspect the HVAC installations at our campus at no extra cost. It is his responsibility to ensure to check and give proper checklists for all regular preventive maintenance and certify that they are carried out accordingly. He should also train the personnel employed for the purpose on regular basis to ensure quality work is done at site. Monthly bill without site visit, certification of attendance of personnel and verification of checklist and experts report will not be processed for payment. The expert is also required to visit IIT Dharwad as and when required in addition to monthly visit at no extra cost to attend emergency duties and to manage the crisis/ to troubleshoot the problems and advise IIT Dharwad technically.

Contractor shall supply 3KW strip heaters, AHU Belts of suitable size or any other item that may be required for functioning of the HVAC system on item rate contract basis as per the requirement at site with intimation/prior approval of IIT Dharwad officials. However, IIT Dharwad will pay for the supplied items as per work order rates for standard items and Nonstandard items (i.e.. not mentioned in the tender/work order) based on rate analysis submitted and accepted by IIT Dharwad.

Note: Bidders are advised to visit the site for verification of the complete system.

Daily operation / monitoring scheduled annual preventive / routine & predictive maintenance, breakdown maintenance including repair of entire existing HVAC Central Plant system in the campus working on chilled water and VRV/VRF system. The Central plant system has water cooled screw chillers, centralized programmable logic control system, Primary chilled water pumps, secondary chilled water pumps, Double skin air handling units, Ductable fan coil units, chilled water supply & return lines, AHU / FCU, air supply & return ducts, grills, diffusers, dampers, control & protection system. Work shall be carried out by continuous deployment of competent, experienced & trained staff members at site. This is a continuous mode operation & maintenance. All emergencies at all times to be attended without fail.

All fabrication works, minor repairs, servicing of machines / equipment's / parts therein (or arrangement for the same) within the purview (entire AC system) of this contract, shall have to be carried out by the contractor within specified time.

If the contractor fails to carry out the assigned or entrusted work, the department shall get the work done by engaging any other agency and twice the cost incurred shall be recovered from the AMC contractor.

The entire existing AC system (working on chilled water) is covered under the scope of this AMC. Any additions and alterations made in the system (whether by the contractor or by any other agency or by IIT Dharwad), up to an extent of 10% of existing installed AHU & FCU capacities are covered under the scope of this contract for operation & maintenance.

All the equipment/installations shall always be kept in good and trouble-free operating conditions. All the required record for breakdowns/repairs and maintenance etc. shall be maintained in the form of history books and logbooks etc. as per directions. All the maintenance works shall be carried out in accordance with the manufacturer's specifications and instructions of the engineer in charge.

2. Technical and general specifications

✓ **Tools & Tackles:**

- All Consumables for tools and tackles required for the safe and satisfactory operation and maintenance including preventive and breakdown maintenance of the substation and related equipment will be handled by the "contractor".
- The careful maintenance and management of these tools will be the responsibility of the agency.
- Any Specialized tools that would be required for safe maintenance of the substation will be provided by IIT Dharwad.
- Following calibrated, well-maintained instruments should always be available at site.
- Clamp multimeter - 2 No
- Anemometer - 2 No

- Digital thermo & RH meter (Handheld) - 3 No's Mercury thermometer – 2 No's
- Pressure Gauges

Following tools should always be available at site.

- Complete Set Tools for Testing /Repair of Splat ACs
- Two sets of all sizes double end open spanner
- Two nos. adjustable wrenches each.
- Three set of Allen keys (2 set metric & 1 set inch)
- Screwdriver set (normal & star) - 3 set
- Hack saw cutting sets with spare blades - 2 sets
- Suitable bearing puller - 2 No
- Vacuum & blow air cleaner - 2 No
- Water pump, 1 ph. 1HP
- High Pressure Jet Washer -1No

Following maintenance materials should always be available at site:

Grease, Gum, Waste cotton, Chemicals to clean fins & Filters, Insulation Tape, etc. to be provided at no extra cost.

DAILY:

- Daily operation of chillers, Primary & Secondary Pumps, AHUs, VRV systems, Split ACs, etc.
- Parameters of chillers, Pumps, etc shall be checked and recorded AHUs as recommended by respective manufactures in the LOGBOOK (provided by the firm/agency /contractor) on shift basis. Necessary action is to be taken if the reading is not normal.
- To check all electrical motors and their bearing for abnormal noise/heating and to take necessary action if found abnormal
- To check water level in the makeup water tank on terrace and check functioning of float valve.
- To drain out water and clean the AC plat room/ /AHU's etc as and when required/scheduled
- The temperature of each room shall be measured for any corrective action, and these are to be recorded in LOGBOOK
- To keep machine rooms equipment's such as chilling plant area. AHU's exhausts neat and clean including their room floor, wall, ceiling etc in an orderly manner.
- Check for any complaints that are reported, and trouble shoot them immediately.
- AC system of the important & critical facilities is to be continuously monitored, and corrective actions are to be taken immediately so as not to affect the facility concerned
- If any important activities like seminars / lectures / meetings / interviews are planned in the campus, concerned AC system has to be inspected, and normal functioning of AC system is to be ensured.
- Adjustments in the system to achieve required temperature & RH level as required by the user. Release of air locks / blocks in the system.
- Reporting of day's work and progress to concerned Engineer-in-charge.

- Inspection of HVAC electrical panels.
- Monitoring of BMS system
- Monitoring of Freezers & Refrigerators on hourly basis.
- Any other work required for the equipment for proper functioning
- Coordinating with OEM for attending and rectifying the problems

WEEKLY:

- To check the alignment/looseness of all the belt driven equipment and rectify if required
- To check water inside the makeup tank for hardness/dirty and fill with soften water if required
- Clean of grills and diffusers.
- Entire AHU room to be thoroughly cleaned with vacuum cleaner & to be made clean & dust free.
- Check alignment of pumps, motors and rectify if required
- Check heater bank condition and rectify if any problem exists.
- Check the fan belts for proper tension, and replace if necessary, and examine the fans for correct alignment, lubricate the bearing as required.

MONTHLY:

- To check the gland /seal, coupling of pumps.
- To check the solenoid valve, safety controls mechanical, Electrical/ Electronics and inter-locking of the various equipment.
- To check all AHU ducts/insulation/proper positioning/damage and rectifying the same wherever required.
- Checking the performance of AHUs.

QUARTERLY:

- To check and lubricant (if required) the bearing of the pumps/motors and keep the proper record.
- The check the foundation bolts of the pumps / motors and to take the necessary action if required.
- Check the quantity of Air flow from various out lets in each room/ Area as per drawings and do adjustment of dampers etc as and when required
- Check the performance of each equipment of HVAC plant for proper functioning Inspect connection for any water leaks in the coil and connection. Check the tightness of hose,
- fittings & tighten if necessary. There should not be any flooding of water from the AHU.
- Check and clean drain pan, condensate drainpipe and floor drain to ensure no choking and flooding.
- Cleaning of strainers, cooling coils, fins and filters, etc.

- Inspect the conditions of the thermometers and pressure gauges for proper function.
- Check and re-tighten any loose bolts and nuts in proper sequence.
- Inspect the condition of insulation materials and rectify if necessary.
- Coordinating with OEM for preventive maintenance activities.

YEARLY:

- Perform quarterly services
- Overall servicing of the unit, cleaning, reduction of noise level, checking of mechanical assemblies, foam insulators over the pipes.
- De-scaling of copper tubes of the cooling coil (the water circuit) by suitable means as per manufacturer's recommendation and general standards. Procedural details for this work are enclosed.
- Parameter checking before & after servicing
- Air flow checking & adjustment / balancing, if required
- Checking of IR value for motor and heater banks.
- Checking and calibration of temperature and pressure gauges on supply & return chilled water lines and replacement of the same if required.
- Checking of unit efficiency, total capacity delivery of the unit & bringing it to optimum performance level, air flow and water temperature measurements on supply & return ends, maintaining the lab temperature and temperature & RH adjustments.
- Cleaning of ducting system having diffusers, grills, dampers etc.
- Necessary documentation of parameters (before & after servicing work) and submission of checklist.

3. Maintenance

This Maintenance scope (includes both preventive and breakdown maintenance) is indicative only and shall include other maintenance activities required for satisfactory operation. Preventive Maintenance shall be routinely carried out as per the details provided.

Breakdown maintenance shall be provided as and when the situation warrants a failure/fault in the system. The breakdown maintenance shall be attended to at the highest priority to make good the faulted system and put it into operation. For breakdown maintenance, the contractor shall coordinate/liaison with the **"Engineer in Charge"** and the original equipment manufacturer for the replacement of parts and services as necessary. During the preventive (routine) maintenance, the contractor shall carry out the following as listed for various system components:

Though the list contains several individual jobs they could be executed in a combined scope as in the servicing or overhauling of the component.

Any other work assigned by the Electrical Safety Officer from time to time.

Scope of work for Operations and Preventive and Scheduled Maintenance of Phyto-rid Based Sewage Treatment Plant of 200 KLD and 80 KLD (STP)

Objective:

The primary objective is to ensure continuous and efficient operation of the Phyto-rid based STP, along with preventive and scheduled maintenance to maintain optimum functionality, compliance with environmental standards, and enhanced longevity of the plant infrastructure.

Scope of Services:

Daily Operations and Monitoring:

- Perform daily inspections and operational monitoring of the STP to maintain desired flow rates and treatment levels.
- Record daily inflow, outflow, and quality parameters like pH, Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), and others as required by environmental norms.
- Conduct regular physical checks on the Phyto-rid beds, reed plants, and other plant systems, ensuring adequate biomass and health of vegetation.

Preventive and Scheduled Maintenance:

- Conduct periodic maintenance of all system components, including but not limited to pumps, pipes, filtration systems, and plant beds.
- Check for and resolve issues such as clogging, leaks, and blockages in piping, tanks, and channels.
- Replant or maintain vegetation on the Phyto-rid beds to ensure optimal plant density and effectiveness in pollutant removal.
- Regular desilting and sludge removal from sedimentation tanks as per the maintenance schedule.

Quality Testing and Compliance Reporting:

- Conduct monthly water quality testing in a certified laboratory and submit results to relevant authorities.
- Ensure compliance with all environmental norms, particularly as per state and national pollution control board standards.

Emergency Response and Repairs:

- Provide rapid response services for any unexpected breakdowns or malfunctions to minimize downtime.
- Perform minor repairs onsite and escalate major repair requirements with detailed reports and recommendations.

Documentation and Reporting:

- Maintain records of operational logs, maintenance schedules, repair activities, and testing reports.
- Submit monthly performance and maintenance reports to the client, including any issues, resolutions, and recommendations for improved efficiency.

Deliverables:

- Monthly operational reports with key performance indicators (KPI) and compliance testing results.
- Quarterly preventive maintenance logs and records of any repairs conducted.
- Annual comprehensive performance review report, with recommendations for system improvements.

Required Expertise and Qualifications:

The bidder must have proven expertise in operating and maintaining Phyto-rid or similar sewage treatment technologies and comply with environmental safety and operational standards.

This scope covers all necessary tasks to ensure the STP functions efficiently and remains compliant with environmental regulations.

LIST OF PREFERRED MAKES OF MATERIALS

The makes of all the materials to be used in the work has been specified. However, if any material to be used in the work and the make is not specified the decision of the Engineer-in-charge in writing shall be final.

Internal electrification, Street lighting, AC

Sl. No.	Item	Makes
1	PVC / STEEL CONDUIT AND ACCESSORIES (ISI MARKED)	PRECISION/SUPREME/FINOLEX.
2	PVC INSULATED FRLS COPPER CONDUCTOR CABLES 1.1 KV GRADE (ISI MARKED)	HAVELLS / POLYLYCAB/ V -GUARD
3	MODULAR PLATE TYPE SWITCH / SOCKET GI BOXES / FAN REGULATOR / TELEPHONE SOCKET/LAN OUTLET	LEGRAND / MK / CRABTREE / SCHENIDER ELECTRIC /
4	MCB / MCB DB'S / RCBO / MCCB / MCCB DB	LEGRAND / SCHNEIDER / ABB.
5	LED LIGHT FITTINGS	PHILIPS / TRILUX / WIPRO
8	CEILING FAN (BLDC- 3 STAR RATED ISI MARKED)	ORIENT / HAVELLS /CROMPTON
9	EXHAUST FANS/ FRESH AIR FAN	CROMPTON/ USHA/ ALMONARD/ ORIENT/ HAVELLS
10	RETROFIT LED LAMP	PHILIPS / LIGHTING TECHNOLOGIES / TRILUX / WIPRO
11	CABLE GLAND	COMET/BRACO/DOWELLS
12	GI PIPE (ISI MARKED)	ZENITH/TATA/JINDAL

13	11/1.1 KV XLPE CABLE (ISI MARKED)	HAVELLS / LEGRAND / UNIVERSAL / POLYCAB
14	DWC PIPE	REX/DURALINE/LEGRAND/MK

Note: In case the make of any of the equipment used at site is not in this preferred list of make, the decision of the Engineer-in-charge shall be final.

Annexure-I

UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT

We hereby confirm and declare that we, M/s ----------, is/are not under any active debarment from Ministry of Finance and/or Ministry of Education as on the date of bid submission.

Any change in the above status during the evaluation of the present bid shall be intimated to IIT Dharwad immediately.

Date: **(Authorized signature & seal of the bidder)**

Annexure-II

FORMAT FOR PROVIDING EXPERIENCE DETAILS

(Bidders should only submit those purchase orders along with work completion certificates which are similar in nature to the present tender and meeting the financial requirement).

Sl. No.	Year	Name of the Client	Order No. & Date	Contract value per	Remark
					Supporting documents are to be attached.

Date: **(Authorized signature & seal of the bidder)**

Contractors Sign & Seal

(Annexure-III)

TURNOVER CERTIFICATE

THIS IS TO CERTIFY THAT TURNOVER OF M/s _____
HAVING PAN _____ IS AS UNDER:

FINANCIAL YEAR	AMOUNT IN WORDS	AMOUNT IN FIGURES
2019-20		
2020-21		
2021-22		
2022-23		
2023-24		

AVERAGE TURNOVER=

Date: **(Authorized signature & seal of CA)**

PART D

Name of the Work: **Comprehensive Maintenance including Minor Civil and Electrical works of IIT Dharwad Permanent campus developed under Phase-1A 24 facilities from (G+1 storey) buildings to (G+11 storey) buildings including external development works at Chikkamalligawad, Dharwad for one year (2025-26) and extendable up to 2 years (2026-27, 2027-28).**

PRICE-BID-SCHEDULE OF WORK / BOQ / PRICE BID

Sub Head A: Bill of Quantities (BoQ) for Civil					
Sl No	**Description**	**UoM**	**Qty**	**Rate in ₹**	**Amount in ₹**
Civil Works					
1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge.				
1.1	All kinds of soil	Cum	50		
2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
2.1	All kinds of soil	Cum	50		
3	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge.				
3.1	Hard Rock (Blasting Prohibited)	Cum	50		
4	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
4.1	All kinds of soil	Cum	50		
5	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5	Cum	50		

	m.				
6	Providing and laying in position cement concrete (PCC) 1:5:10 (1 cement: 5 coarse sand (zone-III) derived from natural sources: 10 graded stone aggregate 40 mm nominal size derived from natural sources) excluding cost of centering and shuttering	Cum	25		
7	Centering and shuttering including strutting, propping etc. and removal of form for Foundations, footings, bases of columns, etc. for mass concrete	Sqm	50.00		
8	Centering and shuttering including strutting, propping etc. and removal of form for Lintels, beams, plinth beams, girders, bressumers and cantilevers	Sqm	50.00		
9	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts	Sqm	50.00		
10	Centering and shuttering including strutting, propping etc. and removal of form for Vertical and horizontal fins individually or forming box louvers band, facias, and eaves boards	Sqm	50.00		
11	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, and binding all complete Thermo-Mechanically Treated bars of grade Fe-500D or more	Kg	1500.00		
12	DESIGN MIX CONCRETE 5.33 Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.	Cum	20.00		

	All works up to plinth level Concrete of M25 grade with minimum cement content of 330 kg /cum				
13	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength including pumping of concrete to site of laying, curing, carriage for all leads but excluding the cost of centering , shuttering, finishing and reinforcement as per direction of the engineer-in-charge for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement. All works above plinth level up to floor V level Concrete of M25 grade with minimum cement content of 330 kg /cum.	Cum	50		
14	Providing and laying Solid Concrete Blocks Masonry with 200mm thick with compressive strength not less than 5.0 N/sq.mm. confirming to IS 2185 (Part 1) above plinth level in cement mortar 1:6 (1 cement: 6 coarse sand).	Cum	75		
15	Half brick masonry with common burnt clay F.P.S. (non-modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level. Cement mortar 1:4 (1 cement :4 coarse sand)	Sqm	50		
16	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for separately).	Cum	50		
17	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement: 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement: 3 coarse sand) finished rough with sponge.	sqm	150		

18	Providing and applying white cement-based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	sqm	150		
19	Finishing walls with 100% Premium acrylic emulsion paint having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (Company Depot Tinted) with silicon additives. New work (Two or more coats applied @ 1.43 litre/ 10 sqm. Over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm.	Sqm	200.00		
20	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I.	Sqm	200.00		
20.1	wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all	Sqm	200.00		

	complete as per drawings, specification and direction of the Engineer in charge but excluding the cost of painting with:				
	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fibre manufactured through autoclaving process.				
21	P/F False Celling Only Calcium Silicate Boards	Sqm	500		
22	Providing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 0.80 mm thick with zinc coating not less than 275 gm/m*	Sqm	200		
23	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	Kgs	500		
24	Structural steel work riveted, bolted, or welded in built up sections, trusses, and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kgs	2500		
25	Paint to MS Framework	Kgs	2500		
	Flooring				
26	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and				

	matching pigments etc. The tiles must be cut with the zero-chipping diamond cutter only. Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, levelling system and rubber mallet for placing the tiles gently and easily.				
27	Size of Tile 600 x 600 mm	Sqm	200		
28	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge : Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	Sqm	250		
29	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Cum	250		
30	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).				
	Cladding				
31	Providing and fixing 18 mm thick gang saw cut, mirror polished, pre moulded and pre polished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement,	Sqm	150		

	mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Area of slab over 0.50 sqm				
32	Providing and fixing I st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	Sqm	250		
33	Scaffolding	Sqm	500		
34	Water Proofing (PU)	Sqm	200		
35	PU/Silicon Sealant for windows	Rmt	250		
36	Grouting for tiles	Sqm	1000		
37	Glass Film	Sqm	750		
38	Core Cutting 4" (RCC Walls/Slabs)	Nos	100		
39	Core Cutting 6"(RCC Walls/Slabs)	Nos	100		
40	Aluminium partition works	Kgs	100		
41	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade l Type II, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in- charge. Pre-laminated particle board with decorative lamination on both sides	sqm	100		
42	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including	kg	500		

	cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling, and dash fasteners to be paid for separately): For fixed portion polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)				
43	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required Dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) :For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	kg	200		
44	Providing and fixing Brass 100mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	each	30		
45	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS:1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: 200x10 mm	each	30		
46	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: 200 mm	each	30		

47	Aluminium Sliding Door- precision roller system: Door Size 0.9m x 2.1m Supply, Installation, Testing, and commissioning of Sliding door precision roller system including track channel and rollers etc.. Complete for total load as approved by Engineer- In-charge. Make - Hettich, Hafele, Ozone, etc..	each	30		
48	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item): With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	Sqm	100		
Total of Sub Head A in ₹:					

Sub Head B: Bill of Quantities for Plumbing and Sanitary Works

Sl No	Description	UoM	Qty	Rate in ₹	Amount in ₹
49	Providing and fixing Urinal (Make: Hindware, Model: Dyna, Sl No: 60010)	Nos	10		
50	Providing and fixing EWC (Make: Hindware, Model Sl No: 92559)	Nos	10		
51	Providing and fixing water closet squatting pan (Indian type W.C.pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required. White Vitreous China Odisha pattern W.C. pan of size 580x440 mm with integral type footrests	Nos	15		
52	Providing and fixing Countertop wash basin (Make: Jaquar/Hindware)	Nos	10		
53	Providing and fixing SS Sink (Make: Hindware)	Nos	10		
54	Providing and fixing Left Handle Swan Neck Tap (Make: Jaquar/Hindware)	Nos	50		

55	Providing and fixing Head Shower (Make: Jaquar/Hindware)	Nos	50		
56	Providing and fixing Press Matic Pillar Tap (Make: Jaquar)	Nos	50		
57	Providing and fixing Sensor suitable to the Urinal (Make: Jaquar/Hindware)	Nos	50		
58	Providing and fixing Sensor suitable to the Pillar Cock (Make: Jaquar/Hindware)	Nos	50		
59	Providing and fixing Health Faucet (PVC/SS) (Make: Jaquar/Hindware)	Nos	50		
60	Providing and fixing Pillar Tap (Wash Basin) (Make: Jaquar/Hindware)	Nos	50		
61	Providing and fixing Bib Tap (Near IWC) (Make: Jaquar/Hindware)	Nos	50		
62	Providing and fixing Two-way Bib Tap (Make: Jaquar/Hindware)	Nos	50		
63	Providing and fixing 2 in 1 Wall Mixer (Make: Jaquar/Hindware).	Nos	50		
64	Providing and fixing PVC connection pipes (12mm Ø and 1Mt Length)	Nos	50		
65	Providing and fixing CP Jali (4")	Nos	50		
66	Providing and fixing EWC Seat Cover suitable to EWC Commode (Make: Hindware/Parry ware)	Nos	50		
67	Providing and laying S&S Centrifugally Cast (Spun) / Ductile iron Pipes conforming to IS: 8329.				
68	100 mm dia Ductile Iron Class K-7 pipes	Rmt	50		
69	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket:				
70	100 mm dia pipes	Nos	100		
71	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS: 8329:				
72	150 mm dia Ductile Iron Class K-7 pipes	Rmt	50		

73	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket:				
74	150 mm dia pipes	Nos	100		
75	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold-water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
76	15 mm nominal outer dia. Pipes.	Rmt	50		
77	20 mm nominal outer dia. Pipes.	Rmt	50		
78	25 mm nominal outer dia. Pipes.	Rmt	50		
79	32 mm nominal outer dia. Pipes.	Rmt	50		
80	40 mm nominal outer dia. Pipes.	Rmt	50		
81	50 mm nominal outer dia. Pipes.	Rmt	50		
82	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipe plain fittings (TEE, Elbow, Union, Socket, Reducer, Coupler, End Sockets)				
83	100MMØ	Nos	10		
84	75MMØ	Nos	10		
85	50MMØ	Nos	10		
86	40MMØ	Nos	50		
87	32MMØ	Nos	50		
88	25MMØ	Nos	50		
89	20MMØ	Nos	50		
90	15MMØ	Nos	50		
91	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipe brass fittings (TEE, Elbow, Union, Socket, Reducer, Coupler, End Sockets)				

92	100MMØ	Nos	10		
93	75MMØ	Nos	10		
94	50MMØ	Nos	10		
95	40MMØ	Nos	50		
96	32MMØ	Nos	50		
97	25MMØ	Nos	50		
98	20MMØ	Nos	50		
99	15MMØ	Nos	50		
100	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) valves				
101	100MMØ	Nos	10		
102	75MMØ	Nos	10		
103	50MMØ	Nos	10		
104	40MMØ	Nos	50		
105	32MMØ	Nos	50		
106	25MMØ	Nos	50		
107	20MMØ	Nos	50		
108	15MMØ	Nos	50		
109	Providing and fixing GI Ball Valves				
110	100MMØ	Nos	10		
111	75MMØ	Nos	10		
112	50MMØ	Nos	10		
113	40MMØ	Nos	50		
114	32MMØ	Nos	50		
115	25MMØ	Nos	50		
116	20MMØ	Nos	50		
117	15MMØ	Nos	50		

118	Providing and fixing Brass Tap Spindle				
119	Type-2No	Nos	200		
120	Type-3No	Nos	200		
121	Disc Spindle	Nos	200		
122	Providing and fixing 600x450 mm bevelled edge mirror of superior glass (of approved quality) completes with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Nos	100		
123	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing: Rectangular shape 1500x450 Mm	Sqm	100		
Total of Sub Head B in ₹					

Sub Head C: Bill of Quantities for Carpentry & Aluminium Works					
Sl No	Description	UoM	Qty	Rate in ₹	Amount in ₹
124	Providing and fixing Door Closer	Nos	200		
125	Providing and fixing Door Stopper	Nos	200		
126	Providing and fixing Door Silencer	Nos	200		
127	Providing and fixing SS Handle (6"/12")	Nos	200		
128	Providing and fixing Floor Hinges for Glass Doors	Nos	100		
129	Providing and fixing Al Drop (12")	Nos	200		
130	Providing and fixing Tower Bolt (12")	Nos	200		
131	Providing and fixing Mortise Lock Set	Nos	100		
132	Providing and fixing Mosquito Mesh (SS)	Sqm	150		
133	Providing and fixing Heavy Duty Rollers to UPVC Windows	Nos	500		
134	Providing and fixing Touch Lock (Push Type) for UPVC Window, White Powder Coated with Striker	Nos	200		

135	Providing and fixing SS 304 Toilet Cubicle Door Lock Fittings	Nos	200		
136	Providing and fixing SS 304 Toilet Cubicle Door Base	Nos	200		
137	Providing and fixing SS 10" Friction Stay Hinges for Casement Windows	Nos	200		
138	Providing and fixing SS Heavy Duty Telescopic Slide/Drawer Channel (Silver) (18 Inch) for Kitchen Drawers	Nos	100		
139	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc. to be paid separately).	Sqm	100		
140	Providing and fixing 12 mm thick fixed toughened glass partition	Sqm	100		
141	Providing and fixing DGU Glass of ET 25/Grihaa rated.	Sqm	100		
Total of Sub Head C in ₹					

Sub Head D: Bill of Quantities for Tools and Machinery					
Sl No	**Description**	**UoM**	**Qty**	**Rate in ₹**	**Amount In ₹**
142	Providing of Backhoe Loader (JCB) with operator & helper for earth work/refilling and allied misc. works, in and around the premises of IIT Dharwad PC as directed by the Engineer-in-Charge.	Hrs	300		
143	Providing of 14Tonne Hydra Crane with operator & helper for lifting and allied misc. works, in and around the premises of IIT Dharwad PC as directed by the Engineer-in-Charge.	Hrs	300		
144	Providing of Dewatering Pump including fuel (petrol/diesel) as required for allied misc. works in and around the premises of IIT Dharwad PC as directed by the Engineer-in-Charge.	Hrs	450		
Total of Sub Head D in ₹					

Sub Head E: Bill of Quantities for Manpower & Misc					
Sl No	**Description**	**UoM**	**Qty**	**Rate in ₹**	**Amount in ₹**
145	Un-Skilled	Nos	400		
146	Semi-Skilled	Nos	100		
147	Skilled	Nos	100		
148	Highly Skilled	Nos	100		
149	Cleaning of UG Sumps and OHT'S as per the directions of Engineer-in-charge.	Per KL	2546		
150	Cleaning of Storm water drains	Rmt	13000		
Total of Sub Head E in ₹					

Sub Head F: Bill of Quantities (BoQ) for Electrical					
Sr. No.	**Description of Item**	**UoM**	**Qty**	**Rate In ₹**	**Amount In ₹**
151	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.				
151.1	Group C.	Point.	22		
152	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.				
152.1	Group A.	Point.	33		
152.2	Group B.	Point.	33		
152.3	Group C.	Point.	33		

153	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
153.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire.	Meter	55		
153.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire.	Meter	55		
153.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire.	Meter	110		
153.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire.	Meter	77		
153.5	2 X 10 sq. mm + 1 X 6 sq. mm earth wire.	Meter	55		
153.6	4X4sq.mm +2 X 4 sq. mm earth wire	Meter	110		
153.7	4X6sq.mm+ 2X6 sq. mm earth wire	Meter	110		
153.8	4X10 sq. mm + 2 X 6 sq. mm earth wire	Meter	110		
153.9	4X 16 sq. mm + 2 X 6 sq. mm earth wire	Meter	110		
154	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
154.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire.	Meter	1100		
154.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire.	Meter	1100		
154.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire.	Meter	2200		
154.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire.	Meter	550		
154.5	2 X 10 sq. mm + 1 X 6 sq. mm earth wire.	Meter	550		
154.6	4X4sq.mm +2 X 4 sq. mm earth wire	Meter	1100		
154.7	4X6sq.mm+ 2X6 sq. mm earth wire	Meter	2200		
154.8	4X10 sq. mm + 2 X 6 sq. mm earth wire	Meter	1100		
154.9	4X 16 sq. mm + 2 X 6 sq. mm earth wire	Meter	550		
155	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
155.1	1 x 1.5 sq. mm.	Meter	550		

155.2	2 x 1.5 sq. mm.	Meter	1100		
155.3	3 x 1.5 sq. mm.	Meter	1100		
155.4	2 x 2.5 sq. mm.	Meter	1100		
155.5	3 x 2.5 sq. mm.	Meter	1100		
155.6	2 x 4.0 sq. mm.	Meter	1100		
155.7	3 x 4.0 sq. mm.	Meter	2200		
155.8	4 x 4.0 sq. mm.	Meter	1100		
155.9	5 x 4.0 sq. mm.	Meter	550		
155.10	2 x 6 sq. mm.	Meter	550		
155.11	3 x 6 sq. mm.	Meter	550		
155.12	4 x 6 sq. mm.	Meter	1100		
155.13	5 x 6 sq. mm.	Meter	1100		
156	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid, and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Meter	330		
157	Supplying and drawing 3core flat PVC sheathed submersible pump cable manufactured with electrolytic grade copper with flexible copper with low resistance conductor confirming to 13:8130-1984 and virgin grade PVC insulation and powder coating extruded PVC sheathed suitable for working voltage up to 1100 Volts as per IS-694:1990.				
157.1	3 Core x 4.0 sq.mm.	Meter	330		
157.2	3 Core x 6.0 sq.mm.	Meter	330		
158	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
158.1	Up to 35 sq. mm	Meter	110		
158.2	Above 35 sq. mm and up to 95 sq. mm	Meter	55		

158.3	Above 95 sq. mm and up to 185 sq. mm	Meter	55		
158.4	Above 185 sq. mm and up to 400 sq. mm	Meter	220		
159	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
159.1	Up to 35 sq. mm	Meter	550		
159.2	Above 35 sq. mm and up to 95 sq. mm	Meter	275		
159.3	Above 95 sq. mm and up to 185 sq. mm	Meter	550		
159.4	Above 185 sq. mm and up to 400 sq. mm	Meter	1100		
160	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
160.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Meter	275		
160.2	Above 35 sq. mm and up to 95 sq. mm (clamped with 25x3mm MS_ Metre 130 flat clamp)	Meter	275		
160.3	Above 95 sq.mm and up to 185sq.mm (clamped with 25/40x3mm MS flat clamp)	Meter	220		
160.4	Above 185 sq.mm and up to 400sq.mm (clamped with 40x3mm MS flat clamp)	Meter	220		
161	Supplying and fixing cable route marker with 10 cm X 10cm X5mm_ Each 508 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.	Each	33		
162	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit or cutting the wall and making good the same in case of recessed conduit as required.				

162.1	20 mm.	Meter	55		
162.2	25 mm.	Meter	110		
162.3	32 mm.	Meter	55		
162.4	40 mm.	Meter	55		
163	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
163.1	20 mm.	Meter	55		
163.2	25 mm.	Meter	110		
163.3	32 mm.	Meter	55		
163.4	40 mm.	Meter	55		
164	Supplying and drawing Flexible Multicore Cable manufactured with electrolytic grade flexible copper with low conductor confirming to IS8130-1984 and (Virgin) PVC insulation sheathed suitable for working voltage up to 1100 Volts as per IS-694:1990				
164.1	3C x 2.5 mm2	Meter	110		
164.2	3C x 4 mm2	Meter	220		
164.3	3C x 6 mm2	Meter	110		
165	Supplying and fixing following size/ modules, 1.2 mm. thickness, GI box along with modular base & cover plate for modular switches in recess etc as required.				
165.1	1 or 2 Module (75 mm X 75 mm).	No.	11		
165.2	3 Module (100 mm X 75 mm).	No.	11		
165.3	4 Module (125 mm X 75 mm).	No.	11		
165.4	6 Module (200 mm X 75 mm).	No.	11		
165.5	8 Module (125 mm X 125 mm)/ (225 mm X 75 mm).	No.	11		
165.6	12 Module (200 mm X 150 mm).	No.	11		
166	Supply and fixing of Push Button Switch.	No.	6		

167	Excavation and refilling of cable trench for repairing of 1.1/11 kV grade cable.	Mtr.	110		
168	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.				
168.1	1 or 2 Module.	No.	55		
168.2	3 Module.	No.	77		
168.3	4 Module.	No.	55		
168.4	6 Module.	No.	55		
168.5	8 Module.	No.	77		
168.6	12 Module.	No.	77		
169	Supplying and fixing surface / flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick/C.C wall, including necessary rawl plugs, Machine/NF screws etc., complete.				
169.1	1-2 Way	No.	55		
169.2	3 Way	No.	55		
169.3	4-5 Way	No.	55		
169.4	6 Way	No.	55		
169.5	8 Way	No.	55		
169.6	10-12 Way	No.	55		
170	Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nut etc., complete on the existing metal/PVC box.				
170.1	1-2 Module	No.	55		
170.2	3 Module	No.	55		
170.3	4 Module	No.	55		
170.4	6 Module	No.	55		

170.5	8 Module	No.	55		
170.6	10-12 Module	No.	55		
170.7	Supply and fixing 3 pin, 5A ceiling rose on the existing junction box/wooden block including connections etc. as required	Each	22		
170.8	Supply and fixing brass batten / angle holder including connection etc. as required.	Each	55		
171	Supplying and fixing one of 230V Ding doing bell and a flush type of bell push with gang box fixed on necessary wooden or rawl plugs using NF screws with Remote.				
171.1	Ding Dong Bell	No.	16		
171.2	Remote	No.	10		
172	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	No.	110		
173	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
173.1	5/6 amps switch.	No.	165		
173.2	2-way 5/6 amps switch.	No.	33		
173.3	15/16-amp switch.	No.	165		
173.4	3 pin 5/6 A socket outlet	No.	165		
173.5	6 pins 15/16-amp socket outlet.	No.	165		
173.6	TV antenna socket outlet.	No.	11		
173.7	Bell push.	No.	22		
174	Supplying and fixing of metal clad industrial plugs and sockets.	No.			
174.1	2pole+earth 250V PLUG				
174.1.1	16A	No.	6		

174.1.2	32A	No.	6		
174.2	3pole+earth 440V PLUG				
174.2.1	16A	No.	6		
174.2.2	32A	No.	6		
174.3	2pole+earth 250V SOCKET				
174.3.1	16A	No.	6		
174.3.2	32A	No.	6		
174.4	3pole+earth 440V SOCKET				
174.4.1	16A	No.	6		
174.4.2	32A	No.	6		
175	Supplying and fixing of 25 A, Modular AC starter switch.	No.	22		
176	Supplying and fixing of 6 pins 25-amp Modular socket outlet.	No.	11		
177	Providing and fixing following rating and breaking capacity MCCB with spreader link in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
177.1	100 A,30KA, FPMCCB	No.	3		
177.2	125 A,36KA, FPMCCB	No.	3		
177.3	200 A,36KA, FPMCCB	No.	3		
177.4	250 A,36KA, FPMCCB	No.	3		
177.5	250 A,50KA, FPMCCB	No.	3		
177.6	400 A,50KA, FPMCCB	No.	3		
177.7	630 A,50KA, FPMCCB	No.	3		
178	700-800 A 50 KA	No.	3		
179	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth				

	bar, din bar, interconnections, IP 43, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
179.1	6-way, Double door.	No.	3		
179.2	8-way, Double door.	No.	3		
179.3	12-way, Double door.	No.	3		
179.4	16-way, Double door.	No.	3		
180	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, IP 43, Metal door on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator).				
180.1	4 way (4 + 12), Double door.	No.	3		
180.2	6 way (4 + 18), Double door.	No.	3		
180.3	8 way (4 + 24), Double door.	No.	3		
181	S/fixing following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100 amps TPN/FP 25 KA MCCB as incomer, interconnection between incomer MCCB and bus bars, IP 43 Metal door (but without MCB's/ MCCB) as required. (Note: Vertical type MCB TPDB is normally used where 3 phase outlets are required).				
181.1	4 Way (4+12) TPN, Double door.	No.	3		
181.2	8 Way (4+24) TPN, Double door.	No.	3		
181.3	12 Way (4+36) TPN, Double door.	No.	3		

182	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, 10 KA miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
182.1	Single pole.	No.	11		
182.2	Single pole and neutral	No.	11		
182.3	Double pole.	No.	11		
182.4	Triple pole.	No.	11		
182.5	Triple pole and neutral	No.	11		
183	Supplying and fixing following rating, double pole, 240 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
183.1	40 A	No.	11		
183.2	63 A	No.	11		
184	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
184.1	40 A	No.	11		
184.2	63 A	No.	11		
184.3	100 A	No.	11		
184.4	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	No.	110		
185	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	No.	110		
186	S/installation of automatic changeover cum current limiter, Single Phase, 230V, 30/10 A, 4 module.	No.	3		

187	Supplying and fixing of phenolic laminated sheet as switch board cover etc. 3 mm Thick Without Box Including Washer & Screw.	Cm2	11000		
188	Supplying and fixing of PVC casing and capping on the wall or ceiling using necessary materials like bends, junction box, elbows, screws at an interval of 300 mm as required.				
188.1	20 mm.	Meter	110		
188.2	25 mm.	Meter	110		
188.3	30 mm	Meter	110		
188.4	50 mm	Meter	110		
189	Releasing the existing fan and refixing the same in the new place with clamps without 'S' hook complete.	No.	55		
190	Supplying And Fixing "S" Hook made out of 14mm dia M.S. Rod.	No.	55		
191	Repairing of light / fan / fan regulator / call bell point / main switch / 5A/15A Piano & modular type switch / socket etc. with p/f of essential accessories as required.	No.	55		
192	Supplying and fixing of RYB LED Indicator Lamp on Control panel.	No.	11		
193	Supplying and fixing of 5/6 Amps 3 pin plug top with indicator.	No.	11		
194	Supplying and fixing of 15/16 Amps 3 pin plug top with indicator.	No.	11		
195	Supplying and fixing of 25 Amps 3 pin plug top with indicator.	No.	11		
196	Supplying and fixing of sheet steel enclosure, IP 30, Metal door for				
197	LT AC 3 Phase 4 Wire, 5-30 Amps DLMS Complaint Energy Meter, 1.0 Accuracy Class (Used for LT-2, LT-3 & LT-5 Installations up to 25HP/18KW)	No.	6		
197.1	2 Way.	No.	5		
197.2	3 Way.	No.	5		

197.3	4 Way.	No.	5		
197.4	6 Way.	No.	3		
198	Size - I Enclosure suitable up to 125A MCCBs, 36kA, 4P.	No.	3		
199	Size - II Enclosure suitable from 160A to 250A MCCBs, 50kA, MCCB.	No.	3		
200	Supply, installation and testing of 10W, 240 V , 2 ft. , warm white/cool day light, straight compact white LED mirror light and making connection with existing light point.	No.	11		
201	Supplying and fixing of round sheet as required.				
201.1	3" dia.	No.	22		
201.2	8" dia.	No.	11		
202	Supplying.....litres capacity vertical /horizontal type wallmounting Electrical water heater with 22 SWG copper/SS sheet metal inner Container tinned inside and anti-corrosive paint outside and 20 SWGM.S. sheet metal outer cover filled with glass wool between inner and outer container for thermal insulation complete. The inlet and outlet pipes so arranged that water flow inside results in water to flow out from the inner container without turbulence. The Inner container shall have direct immersion type copper tube nickel-plate. 2kW capacity element with an eon indicator fitted with 20A capacity 25-to-85-degree Centigrade range thermostat. The water heater shall completely be wired with 40/0.0076-inch 3core copper flexible wire of 1.5meters length and the outer container provided with heavy gauge brackets for wall mounting.				
202.1	25 liters	No.	3		
203	Erection charges for fixing a... litres capacity wall mounting electric geysers using bolts, flat at one end nut and washers at the other end for through bolts, nuts, and washers with150x450x600mm backplate and wiring complete with 15A 3 pin top.				
203.1	up to 30 Litres	No.	3		

203.2	35 to 50 Litres	No.	3		
203.3	70 to 100 Litres	No.	3		
204	Supplying and fixing/replacement of heating element for Geyser/Boiler				
204.1	2KW Capacity	No.	3		
204.2	3KW Capacity	No.	3		
205	Supplying and fixing/replacement of pressure relief valve suitable for Geyser.	No.	3		
206	Releasing an unserviceable thermostat and providing in its place a new 20 A capacity 25 inch to 85-inch range thermostat.	No.	3		
207	P/fixing of Auto cut for geyser.	No.	3		
208	Dismantling of geyser.	No.	3		
209	P/fixing stainless steel wired connection pipe for geyser, heavy duty - 450mm long.	No.	3		
210	P/fixing PVC connection pipe for geyser, heavy duty - 450mm long.	No.	3		
211	S/fixing of 15/18/20W blue ultraviolet tube light for fly catcher machine.	No.	6		
212	Supplying & fixing retrofit type-PL-LED Lamp.....W LED linear source with CCT 6500-degree K, CRI>70%. efficacy >80 lumen per W, life>25000 burning hours and Compliance to IS10322/IEC60598, LM79& LM80. The LED are driven by HF electronic driver integrated in the system, with PF>0.95, power loss should<5%of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life asper LM79. The operating input voltage should be between 130 to 275V. Tested by NABL / CPRI accredited laboratory with 2years Warranty against any manufacturing defect working under standard electrical condition.				
212.1	8-9 W	No.	11		
212.2	18-20 W	No.	11		

213	Supplying of.....feet-PVC Batten with integrated LED tube.... W with high quality diffuser with Life of 25000 burning hours & 70% lumen maintenance with CRI>80. Power Input:220-240V 50/60 Hz & Power factor>0.9 along with CE approved. 2 years Warranty against any manufacturing defect working under standard electrical condition.				
213.1	LED light fitting 1 x 2' - 9/10 W	No.	11		
213.2	LED light fitting 1 x 4' - 20/22 W	No.	22		
213.3	LED light fitting 1 x 4' - 36/40 W Each	No.	11		
214	Supplying of recess mounting non-integrated type LED downlight.....W luminaire comprising of pressure diecast/extruded aluminium housing, with spring loaded false ceiling clamps, LED of Power/COB with CCT 6500-degree K, CRI>70%. efficacy>100 lumen per W, 120-degree beam spread, life>25000 burning hours and Compliance to IS10322/IEC60598, LM79& LM80. The lamp compartment is enclosed with anti-glare opal diffuser which enhances the lighting level. LEDs are driven by HF electronic driver integrated in a separate control gear assembly., with PF>0.95, power loss should<5%of lamp Wage, short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM79. The operating input voltage should be between 130 to 275V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2years Warranty against any manufacturing defect working under standard electrical condition.				
214.1	5-6 W	No.	11		
214.2	10-12 W	No.	33		
214.3	15-18 W	No.	22		
214.4	24 W	No.	11		
215	Supply of round/square recess/surface mounted rolling type LED Down light with ..... W GU 10 LED Lamp Rib Fabricated from diecast aluminium with white powder coated prewired to mains connector &				

	has swivelling unit of aluminium die cast eye ball & LED Lamp position retained by circular wire spring, with Life of 25000 burning hours & 70% lumen maintenance with CRI > 80. Power Input: 220-240V @50/60Hz & Power factor >0.9 along with CE approved. 2years Warranty against any manufacturing defect working under standard electrical condition				
215.1	LED square or round down light 5-6W	No.	6		
215.2	LED square or round down light 10-12 W	No.	6		
215.3	LED square or round down light 15-18 W	No.	6		
216	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti-glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access streetlight with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with .....W System Power consumption. LED Efficiency>1301m/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree/Nichia/ Lumileds/Osram make				

	LED Source.				
216.1	LED Streetlight 40W	No.	11		
216.2	LED Streetlight 90 W	No.	11		
217	Supply of LED floodlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti-glare clear diffuser with Injection moulded polycarbonate/clear glass material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mauling with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100 V to 270V 50/60Hz application. Compliance to IS 10322/ IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access streetlight with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with ..... W System Power consumption. LED Efficiency> 1301m/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL / CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark / name shall be Engraved / Embossing on the die cast housing / Body part Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree/Nichia/ Lumileds/Osram make LED Source.				
217.1	LED Floodlight 240W	No.	6		

218	Supply of LED Bollard light fitting of ...W with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti-glare clear diffuser with Injection moulded polycarbonate/clear glass material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/Overload, short circuit/ miss-wiring protection. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB, with 2 years Warranty against any manufacturing defect working under standard electrical condition.				
218.1	8W 1 m Height	No.	3		
219	Supplying and fixing of LED Bulkhead of 10W with IP65 protection and IK 08 impact resistance suitable for surface and wall mounting applications	No.	11		
220	Supplying of recess mounting non integral type ..... LED w luminaire comprising of pressure diecast/extruded aluminium housing, with spring loaded false ceiling clamps, Power LEDs with CCT 6500-degree K, CRI> 70%. efficacy > 100 lumen per W, 120degree beam spread, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The lamp compartment is enclosed with anti-glare opal diffuser which enhances the lighting level LEDs are driven by HF electronic driver integrated in a separate control gear assembly., with PF > 0.95, power loss should< 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.				
220.1	LED modular down light 2'x2' 36 W	No.	22		

221	Surface mounting Fitting, Lumen above 3200.	No.	11		
222	12 W, Lumen above 1200.	No.	6		
223	18W, Lumen above 1800.	No.	6		
224	Supply and fixing of 18/20W LED tube light.	No.	11		
225	Supplying & fixing of retrofit type - LED bulb ..... W with OPAL acrylic diffuser comprising of LED source with CCT 6500-degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.				
225.1	9W, 6500K	No.	11		
225.2	15W, 6500K	No.	11		
226	Supplying of Ceiling Fan with Capacitor rating As per guideline of BEE 5 star rating and IS:374/19 and also comply with IS: 1709/1984 with latest amendment, Rated voltage 220 V/50 Hz, Rated power up to 35 W +/- 10 %, Rated current As per IS:374/19, Rated power factor 0.9 lagging(min), Rated speed 350 +/- 10% RPM, Rated air delivery 210 +/- 10% Cubic Meter Minimum, Rated service value 6.2 CMM / W, Three Blades of blade leaf 1.05 mm thick Aluminium Alloy sheet, Class B motor insulation, Bearing Two ball bearings, Top 6202, Bottom 6201, as per IS specification, Motor winding. Temp rise Shall not exceed 75 deg Cover and ambient of 40 0C by resistance method at 245 V, Insulation resistance Shall not be less than Two Mega Ohms (2M Ohms), Leakage current Should not exceed 210 Micro Amp, Power input, W& current, Air Delivery & Fan Speed as per IS:374/2019 with latest amendment, 2year manufacturer Warranty.				

	(BLDC fans)				
226.1	48" Sweep 5 Star (1200 mm)	No.	22		
226.2	56" Sweep 5 Star (1400 mm)	No.	44		
227	Supply and fixing of Wall Mounting fans, 400 mm sweep , 1350/1400 rpm, 3 blade Colour: White.	No.	3		
228	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
228.1	Upto 450 mm Sweep	No.	6		
229	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required:				
229.1	300 sq. mm	Each	11		
230	Supplying of 1440rpm heavy duty exhaust fan with bracket blades suitable to operate on 230V 50Hz, AC Supply complete.				
230.1	12" Sweep (300 mm)	No.	2		
230.2	15" Sweep (450 mm)	No.	3		
231	Dismantling of cable from Ground	Mtr.	110		
232	Dismantling of cable from on Surface.	Mtr.	110		
233	S/installation of 25 A, AC starter switch, 25 A shuttered socket & 25 A 3 pin plug with indicator with modular G.I.box, base & cover plate as required .	Set.	11		
234	Supply of LT Single Phase 5-30 Amps, DLMS Complaint Static Energy Meter, 1.0 Accuracy	No.	6		
235	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				

235.1	3.5 X 25 sq. mm.	Set.	3		
235.2	3.5 X 35 sq. mm.	Set.	3		
235.3	3.5 X 50 sq. mm.	Set.	3		
235.4	3.5 X 70 sq. mm.	Set.	3		
235.5	3.5 X 95 sq. mm.	Set.	3		
235.6	3.5 X 120 sq. mm.	Set.	3		
235.7	3.5 X 150 sq. mm.	Set.	3		
235.8	3.5 X 185 sq. mm.	Set.	3		
235.9	3.5 X 240 sq. mm.	Set.	3		
235.10	3.5 X 300 sq. mm.	Set.	11		
235.11	3.5 X 400 sq. mm.	Set.	11		
235.12	4 X 16 sq. mm.	Set.	3		
235.13	4 X 25 sq. mm.	Set.	3		
235.14	4 X 35 sq. mm.	Set.	3		
235.15	4 X 50 sq. mm.	Set.	3		
236	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
236.1	4 X 10 sq. mm.	Set.	5		
237	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required:				
237.1	300 sq. mm	Each	11		
238	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required:				

238.1	240 sq. mm	Each	5		
239	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required:				
239.1	240 sq. mm	Each	5		
240	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required:				
240.1	240 sq. mm	Each	5		
241	Supplying & fixing relay for overload protection for window and split air conditioners.	Each	3		
242	Erection of metallic pole of following length in cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required.				
242.1	Above 4.5 metre and up to 6.5 metre	Each	3		
242.2	Above 6.5 metre and up to 8.0 metre	Each	3		
242.3	Above 8.0 metre and up to 10.0 metre	Each	3		
242.4	Above 10.00 metre and up to 12.00 metre	Each	3		
243	Supply and fixing of 3pole power contactor with NO/NC contacts on existing wood/panel board using necessary bolts, nuts, washers and wiring etc., complete with AC-3 Rating and as per IS-13947.				
243.1	25 A	Each	3		
243.2	40 A	Each	3		
243.3	60 A	Each	3		
243.4	100 A	Each	2		

244	Supply and fixing of 4pole power contactor with NO/NC contacts on existing wood/panel board using necessary bolts, nuts, washers and wiring etc., complete with AC-3 Rating and as per IS-13947.				
244.1	25 A	Each	3		
244.2	32 A	Each	3		
244.3	40 A	Each	3		
244.4	50 A	Each	3		
244.5	65 A	Each	3		
244.6	100 A	Each	3		
245	Supplying, fixing, and wiring Residual current circuit breaker (RCCB) 240/450V up to 300mA sensitivity on existing wood/ panel board.				
245.1	16-25A 4 pole	Each	3		
245.2	32-40A 4 pole	Each	3		
245.3	63 A 4 pole	Each	3		
246	16/25 A, rating, 2 pole RCBO 100mA/ 300mA sensitivity	Each	11		
247	16/25 A, rating, 4 pole RCBO 100mA/ 300mA sensitivity	Each	11		
248	40 A, rating, 4 pole RCBO 100mA/ 300mA sensitivity	Each	11		
249	Silica Gel	Kg	22		
250	Filtration of oil using filter set of the contractor to bring the insulation value to I.E., specification	L	12000		

251	Supply, installation, testing & commissioning of Occupancy Sensor Switch: -Surface Mount with movement detector with built-in switch. It will switch off the lights in a room or area when it is vacated and thus save up to 30% of electrical energy The Occuswitch Surface Mount can switch any load up to 6A, Device mounting heights between 2.5 and 3.5 meter, for movement detection covering an area of 4 to 5 square meters (desk work) and 6 to 8 meters for larger movements like walking (at 25 deg Cel ambient). "Functions- Automatic control of lights/electrical load switch ON/OFF automatically when any movement is detected, with adjustable time settings for Switch ON/OFF (30 seconds to 30 minutes). Red LED indicator on detection of movement." Smart timer- The smart timer will extend the delay time by the set delay time if movement is detected shortly after switching off, assuming that the area is still in use, but very little movement is made. "Power Supply- Voltage 230 V +/1 0%,. 50/60Hz AC Supply,.. Maximum load 6 A. (1440 VA) any load, .. Maximum wire range 0.75 to 1.5mm2, .. Mains distribution system TNS with Neutral grounded,."	Each	22		
252	Earthing with G.I earth pipe 4.5 metre long, 40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/coke and salt as required.	Each	11		
252.1	Earthing with copper earth plate 600mm x 600mm x 3 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/coke and salt as required.	Set.	11		
252.2	Supply and laying 6 SWG G.I wire at.5 metre below ground level for conductor earth electrode, including connection/termination with GI thimble etc. as required	Mtr.	55		
252.3	Supply and laying 25mm x 5 mm copper strip at 0.5 metre below ground as strip earth electrode, including connection / terminating with nut, bolt, spring, washer etc. as required. (jointing shall be done by overlapping and with 2 set brass nut blot and spring	Meter	55		

	washer spaced at 50mm)				
252.4	Supply and laying 25mm x 5 mm GI strip at 0.5 metre below ground as strip earth electrode, including connection / terminating with GI nut, bolt, spring, washer etc. as required. (jointing shall be done by overlapping and with 2 set GI nut blot and spring washer spaced at 50mm)	Meter	55		
252.5	Providing and fixing 25mm X 5 mm copper strip on surface or in recess for connections etc. as required	Meter	30		
252.6	Providing and fixing 25mm X 5 mm GI strip on surface or in recess for connections etc. as required	Meter	30		
252.7	Providing and fixing 6 SWG dia GI wire on a surface or in recess for loop earthing as required	Meter	110		
253	Installation charges for split type air conditioner with allied works for one indoor and one outdoor unit is to be mounted on suitable Angle Iron support up to 3.0 Ton split/cassette type A/C.	Each	3		
254	Supplying and installation of insulated refrigerant copper tubing of 5/8" and 3/8" with polythene foam insulation 3 core 80 stand copper wiring between indoor and outdoor unit Leak testing oil and gas charging for additional piping length of tube.				
254.1	Split	Mtr.	30		
254.2	Cassette	Mtr.	30		
255	Supplying and fixing capacitor's (of approved make) for window /split air conditioners.				
255.1	25 to 45mfd running capacitor. Each 805.00	Each	3		
255.2	6.16.2 80 to 200mfd starting capacitor.	Each	3		
256	Supplying and fixing the fan motor for blowers and condenser of 1/5 HP, single shaft/double shaft suitable for split / window air conditioners.	Each	3		
257	Supplying & filling refrigerant (F-22/F/12) for air conditioning equipment's. Which includes the labour & Nitrogen gas for pressure and leak testing.	Per kg	16		

258	Supplying & fixing of thermostat for window type air conditioner. Multi range 30 to 60 degrees Centigrade (without probe), adjustable universal type	Each	3		
259	Extra for Fabrication supply and fixing of Stand fabricated using slotted angle /L angle of size 6mm x 50mm for mounting outdoor/indoor A.C. unit/ Batteries.	Each	3		
260	Supply, installation of 5/8" and 7/8" Hard drawn refrigerant pipe and insulation suitable for 11TR duct able split Air- Conditioner.	m	30		
261	Supplying & filling refrigerant latest R-410 / R-32 for air conditioning equipment's. Which includes the labour & Nitrogen gas for pressure and leak testing	Per kg	6		
262	Supplying and commissioning of AC Remote	No.	10		
263	Supplying and fixing of fan blade	No.	3		
264	ACB yearly maintenance as recommended by OEM	LS	1		
265	ACB yearly consumables as recommended by OEM	LS	1		
266	SITC of Cable trays as required.	LS	1		
Total of Sub Head F in ₹					

Sub Head G: Diesel Generators (DG)

Sl No	**Description**	**No of DG Set**	**No of Services Per year**	**Rate in ₹**	**Amount in ₹**
267	Service Charges for DG Sets				
267.1	1010KvA	2	02		
267.2	500KvA	3	02		
267.3	250KvA	3	02		
267.4	62.3KvA	1	02		
268	Consumables				

Sl.no	Item Description	Unit	Quantity Required	Rate in ₹	Amount in ₹
268.1	Supply of Kirloskar care premium genuine oil 50 liters can	Nos	7		
268.2	Supply of Kirloskar care premium genuine oil 20 liters can	Nos	4		
268.3	Supply of Kirloskar care premium genuine oil 5 liters can	Nos	10		
268.4	Supply of Spin on lube oil filter	Nos	20		
268.5	Supply of Final Filter cartridge	Nos	4		
268.6	Supply of Pre Filter-Cartridge	Nos	4		
268.7	Supply of Kirloskar care genuine coolant premix 26 liters can	Nos	2		
268.8	Supply of Lube Oil filter	Nos	6		
268.9	Supply of Fuel Filter Cartridge	Nos	6		
268.10	Spinon Fuel Filter Assly	Nos	3		
268.11	Supply of Kirloskar care genuine coolant premix 10 liters can	Nos	3		
268.12	Supply of Fuel Filter Element	Nos	4		
268.13	Supply of Kirloskar care genuine coolant premix 5 liters can	Nos	2		
268.14	V Belts for 1010KvA	Nos	6		
268.15	V Belts for 500KvA	Nos	9		
268.16	V Belts for 250KvA	Nos	4		
268.17	K Coolant 26Ltrs	Nos	6		
Total of Sub Head G in ₹					

Sub Head H: Fire Fighting System

Sl No	Description	UoM	Qty	Rate in ₹	Amount in ₹
269	Charges for Resident Technician (One manpower)	Months	12		

270	Charges for Recharging of Firefighting Cylinders	Nos	1500		
Grand Total of Sub Head H in ₹					
Sub Head I: HVAC and Ventilation System					
Sl No	**Description**	**UoM**	**Qty**	**Rate in ₹**	**Amount in ₹**
271	Fixed Charges for AMC for 2000 Tr HVAC district cooling chiller units, AHU units, duct network, chilled water lines, return water lines, cooling towers and 150 HP VRV systems incl attending all complaints, scheduled maintenance, Air balancing and to attend maximum efficiency. Contractors should ensure that air-conditioned facilities shall be maintained at design temp as mentioned in the scope of works. However, any replacement of materials/parts will be paid by IIT Dharwad at actual	Months	12		
272	Charges for Consumables like Softening Chemical	Months	12		
Total of Sub Head I in ₹					
Sub Head J: Landscaping					
Sl No	Description	UoM	Qty	Rate in ₹	Amount in ₹
273	AMC for maintenance of total landscape developed under Phase-1A for 12 months	Sqm	95000		
Total of Sub Head J in ₹					
Sub Head K: Sewage Treatment Plant (STP)					
Sl No	**Description**	**UoM**	**Qty**	**Rate in ₹**	**Amount in ₹**
274	Charges for Resident Technician (One Manpower)	Months	12		
275	Charges for Consumable like Bio-Culture	Litre	1300		
276	Charges for Consumable like Chlorine	Litre	2920		
277	Charges for Desilting of Sedimentation tank and Collection tank (4000/3000 Ltrs)	Trips	50		
278	Charges for Flushing of Manholes	Nos	350		
279	Charges for Cleaning of Chambers of each facility (18	Nos	74		

	Facilities x 4 times)				
Total of Sub Head K					

Total of Sub Head (A+B+C+D+E+F+G+H+I+J+K) in ₹.	
GST @ 18% in ₹.	
Grand Total of Sub Head (A+B+C+D+E+F+G+H+I+J+K) in ₹. (Incl of GST)	
Grand Total in Words: _____**Only.**	

Declaration: I/We do hereby accept all the terms and conditions laid down in the tender document for the above-mentioned work/supply. I/We also agree to the condition that the right to suspend the tender process or part of the process, to accept or reject any or all the tenders at any stage of the process and/or to modify the process or any part thereof at any time without assigning any reasons thereto is reserved by the Competent authority of the Institute without any obligation or liability whatsoever.

(Signature of the Bidder with seal)

Contractors Sign & Seal