



भारत सरकार
GOVERNMENT OF INDIA
केंद्रीय लोक निर्माण विभाग
CENTRAL PUBLIC WORKS DEPARTMENT

सहायक अभियन्ता (वैद्युत एवं यांत्रिकी) कार्यालय
OFFICE OF THE ASSISTANT ENGINEER (E&M)
 चेन्नई विद्युत उपमंडल – III/1
CHENNAI ELECTRICAL SUB-DIVISION – III/1
 कें. लो. नि. वि., चेन्नई – 600 040
C.P.W.D, CHENNAI-600 040

निविदा आमंत्रण सूचना
NOTICE INVITING e-TENDER

NIT No.	: 55/ CESD 3/I/CED-I/2026-2027/CPWD/CHENNAI – 40/AE (E)
Name of Work	: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)
Estimated Cost	: ₹ 3,64,133/-
Earnest Money	: ₹ 7,283/-
Performance Guarantee	: As mentioned in Schedule 'E'
Security Deposit	: 2.5%
Time Allowed	: 3 (Three) Months

Certified that this composite NIT contains 01 to 48 Pages only

सहायक अभियन्ता (वि. एवं यां.) / ASSISTANT ENGINEER (E&M)
सी. ई. एस. डी.-III कें. लो. नि. वि. / CESD-III C.P.W.D.
अन्ना नगर, चेन्नई / ANNA NAGAR, CHENNAI - 600040

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Name of work: **Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)**

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**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART
OF BID DOCUMENT AND TO BE POSTED ON WEBSITE
(Applicable for inviting open bids)**

The Assistant Engineer (E&M), CESD-III C.P.W.D., Anna Nagar, Chennai-40 on behalf of President of India invites **online percentage rate tender from the eligible contractors of CPWD Enlisted in Composite Category in single bid system** for execution of the following works:

1	NIT No.	<u>55/ CESD 3/I/CED-I/2026-2027/CPWD/CHENNAI – 40/AE (E)</u>
2	Name of work & Location	Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)
3	Estimated cost put to bid (in Rs.)	₹ 3,64,133/-
4	Earnest Money (in Rs.)	₹ 7,283/-
5	Period of Completion	3 Months
6	Last date and time of online submission of bid, Original EMD, copy of receipt for deposition of Original EMD , should be deposited either in the office of Executive Engineer inviting bids or Division office of any Executive Engineer, CPWD with in the period of bid submission. (Format of receipt of deposition of Original EMD is enclosed herewith for contractor use)	26.09.2026 up to 11.00 AM
7	Time & date of opening of bid.	26.09.2026 at 11.30 AM

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required **as per the list @ Sl.No.11 below**".
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in or www.eprocure.gov.in. **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. Contractor can upload documents in the form of JPG format and PDF Format.
7. ~~Contractor must ensure to quote rate of each item. The column meant for quoting rate is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0"(ZERO).~~

8. ~~The eligibility bid shall be opened first on due date and time as mentioned above. The time and date of opening of the Financial bid of contractors qualifying in the eligibility bid shall be communicated to them at a later date.~~
9. ~~When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.~~
10. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

11. **A. List of documents to be scanned and uploaded within the period of bid submission: -**

- (a) Valid CPWD Enlistment order of the registered contractors in appropriate class composite works category.
- (b) Scanned Copy of the EMD in the form of Insurance Surety Bonds, Account Payee Demand draft or Bankers Cheque or Fixed Deposit Receipts or Bank Guarantee of any Scheduled Bank.
- (c) **Form-F:** Copy of receipt for deposition of original EMD to CPWD Division Office of any Executive Engineer, CPWD.
- (d) **Form-J:** Notarized Affidavit of 'Non-black listing' by CPWD/State/ Central department/ PSU/ Autonomous bodies on Rs 100/- Stamp paper.
- (e) **GST registration Certificate** if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents.

"If work is awarded to me, I/we shall obtain GST registration certificate as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and / or for any action taken by CPWD or GST department in this regard."

(Note: Undertaking, if any submitted, shall be work specific and the name of work shall be indicated.)

- (f) Valid Electrical License
- (g) ERP Training Certificate.

1. **Documents to be submitted by the successful tender on issue of LOI.** *(These documents can be uploaded with the tender also)*

A) Certificates of Registration with EPFO, ESIC or proof of applying for the same.

2. **The bid submitted shall become invalid if:**

- A) The bidder is found ineligible.
- B) The bidder does not deposit original EMD with CPWD Division office of any Executive Engineer, CPWD.
- C) The bidders do not upload all the documents (as per No: 12 as stipulated in the bid document).
- D) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

No. 69(2)/CESD-III/2026-27/284

Dated: - 17/09/2026

To: -<https://etender.cpwd.gov.in> (Uploaded Schedule-A & relevant files on-line)

सहायक अभियंता (वि. एवं यां.) / ASSISTANT ENGINEER (E&M)
सी. ई. एस. डी.-III कें. लो. नि. वि. / CESD-III C.P.W.D.
अन्ना नगर, चेन्नई / ANNA NAGAR, CHENNAI - 600040

Copies to: -

1. The Executive Engineer (E&M), Chennai -I, CPWD, Shastri Bhavan Chennai-06 for kind information please.
2. <https://etender.cpwd.gov.in>
3. Notice Board.

सहायक अभियंता (वि. एवं यां.) / ASSISTANT ENGINEER (E&M)
सी. ई. एस. डी.-III कें. लो. नि. वि. / CESD-III C.P.W.D.
अन्ना नगर, चेन्नई / ANNA NAGAR, CHENNAI - 600040

CPWD-6 FOR e-Tendering

Percentage rate bids are invited on behalf of President of **from the eligible contractors of CPWD Enlisted in Composite Category in single bid system** for execution of the following works:

Name of work: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)

The enlistment of the contractors **should be valid on the last date of submission of bids**. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

1.1 The work is estimated to cost **₹ 3,64,133/-** This estimate, however, is given merely as a rough guide.

~~1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids. For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.~~

~~1.2 Intending bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:~~

Criteria of eligibility for submission of bid documents

~~1.2.1 Conditions for Non-CPWD contractors only, if bids are also open to non-CPWD contractors. For works estimated cost up to Rs. 15 Crore (the figure of Rs. 15 Crore may be modified as per bidding limit of CPWD class I/ Group A contractors of respective discipline such as Electrical, Horticulture and Furniture etc. as the case may be). Three similar works each of value not less than Rs. or two similar work each of value not less than Rs. or one similar work of value not less than Rs. (all figures rounded to nearest Rs.10 lac) in last 7 years ending last day of the month previous to the one in which the bids are invited.~~

Note :-

~~For works costing above Rs. 3 Crore but up to Rs. 15 Crore, (the figure of Rs. 3 Crore and Rs. 15 Crore may be modified as per bidding limit of CPWD class II/ Group B and CPWD Class I/ Group A contractors respectively of respective discipline such as Electrical, Horticulture and Furniture etc. as the case may be) when bids are open to non-CPWD contractors also, then class II contractors of CPWD shall also be eligible if they satisfy the eligibility criteria specified in 1.2.1 above.~~

~~1.2.2 Criteria of eligibility for CPWD as well as non-CPWD contractors.~~

~~For works estimated to cost above Rs. 15 Crore. (the figure of Rs. 15 Crore may be modified as per bidding limit of CPWD class I/ Group A contractors of respective discipline such as Electrical, Horticulture and Furniture etc. as the case may be)~~

~~1.2.3 When bids are invited from non-CPWD contractors and CPWD class II contractors as per provisions of clause 1.2.1 above, it will be mandatory for non-CPWD contractors and CPWD class II contractors to upload the work experience certificate(s) and the affidavit as per the provisions of clause 1.2.2. But for such bids, Class I contractors of CPWD are eligible to submit the bids without submission of work experience certificate and affidavit. Therefore, CPWD class I contractors shall upload two separate letters for~~

~~experience certificate and affidavit that these documents are not required to be submitted by them. Uploading of these two letters is mandatory otherwise system will not clear mandatory fields.~~

2. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD 7/8 (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 **3 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 is 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 <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
- 7.A. No running account bill shall be Paid for the work till the applicable Labour license, registration with EPFO, ESIC and BOCW welfare board, whatever applicable are submitted by the contractor To the Engineer-in-charge.**
8. Earnest Money in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of Executive Engineer (E), CCED-III, CPWD, Chennai-40 shall be scanned and uploaded to the e-tendering website with in the period of bid submission. **The original EMD should be deposited either in the office of Assistant Engineer/ Executive Engineer inviting bids or division office of any Executive Engineer, CPWD with in the period of bid submission.**

The EMD receiving Executive Engineer/ Assistant Engineer shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE/AE in the NIT. This receipt shall also be uploaded to the e-tendering website by the intending bidder within the specified bid submission date and time.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any scheduled bank having validity for 3 months or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

The physical EMD of the scanned copy of EMD uploaded shall be deposited by the lowest tenderer before the due date and time stipulated for opening of eligibility bid, failing which the tender shall be rejected forthwith.

~~The following undertaking in this regard shall also be uploaded by the intending bidders.~~

~~"The physical EMD shall be deposited by me/us with the EE calling the tender in case i/we become the lowest tenderer with in a week of the opening of financial bid otherwise department may reject the tender and also take action to withdraw my/our enlistment.~~

~~The intending bidder has to fill all the details such as Banker's name, Demand Draft/Fixed Deposit Receipt /Pay Order/ Banker's Cheque/Bank Guarantee number, amount and date.~~

~~The amount of EMD can be paid by multiple Demand Draft / Pay Order / Banker's Cheque / Deposit at call receipt / Fixed Deposit Receipts along with multiple Bank Guarantee of any Scheduled Bank if EMD is also acceptable in the form of Bank Guarantee.~~

Copy of Enlistment Order and other documents as specified in the press notice, shall be scanned and uploaded to the e-Tendering website within the period of bid submission.

Online bid documents submitted by intending bidders shall be opened only of those bidders, **whose EMD deposited with any division office of CPWD** and other documents submitted in office are found in order.

The bid submitted shall be opened as per page no 02 forming part of bid document and to be posted on website.

9. The bid submitted shall become invalid if:

- i) The bidders is found ineligible.
- ii) The bidders does not deposit original EMD with Division office of any Executive Engineer, CPWD
- iii) The bidders does not upload all the documents (as per Sl.No:11a to 11d) as stipulated in the bid document.
- iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.

10. **List of documents to be scanned and uploaded with in the period of bid submission:-**

AS IN SL.NO 11A @ PAGE NO:- 03

1. The contractor whose bid is accepted will be required to furnish performance guarantee of 5% (Three Percent) of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-)

or

Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-)

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 Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving aforesaid performance guarantee.

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 license, registration with EPFO, ESIC and BOCW welfare board and programme chart (time and progress) with in the period specified in Schedule-F. The applicable and eligible amount of EPF & ESI shall be reimbursed on submission of documentary proof of payment provided same are in order.

11. 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 on 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 plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
12. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
13. 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.
14. The competent authority on behalf of President of India 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.
15. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted 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.
16. 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.
17. The bids for the work shall remain open for acceptance for a period of 30 (Thirty) days from the date of opening of bids in case of single bid system and 75 (Seventy five) days from the date of opening of technical bids in case bids are invited in 2 or 3 bid system.)

Further

- (i) If any bidder withdraws his bids or makes any modifications in the terms & condition of the bid which are not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of

submission of bids, then the Government shall without prejudice to any other right of remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

(iii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the

18. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:
 - a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable. For composite Tender-**Not Applicable**
19. The intending bidders are required to update their profile in CPWD e-tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile / uploading tender can be resolved through email id: cpwd.support@techmahindra.com. The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

CPWD-7/8

CPWD

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
Percentage Rate Tender & Contract for Works**

Tender for the work of:

Name of work: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)

Estimated cost: - **₹ 3,64,133/-**

- (i) To be submitted online by the Contractor as per page no 02 forming part of bid document and to be posted on website to the Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.
- (ii) To be opened in presence of tenderers who may be present as per page no 02 forming part of bid document and to be posted on website in the office of the Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40

Issued to

Signature of officer issuing the documents

Designation: **Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40**

Date of Issue **17-09-2026**

TENDER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, 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 the President of India 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.

We agree to keep the tender open for (30) Thirty days from the date of opening of financial bid ~~in case tenders are invited on 3 envelop system~~ and not to make any modification in its terms and conditions.

A sum of **₹ 7,283/-** is hereby forwarded in cash/receipt treasury challan/deposit at call receipt of a scheduled bank/fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by a scheduled bank as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period. I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him

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

~~I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer in Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.~~

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

Dated:

Signature of Contractor

Witness:

Postal Address:

Address:

Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India 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 President of India

Signature.....

Dated:

Designation.....

PROFORMA OF SCHEDULES

(Separate Performa for Civil, Elect. & Hort. Works in case of Composite Tenders)
(Operative Schedules to be supplied separately to each intending tenderer)

SCHEDULE 'A'

Schedule of quantities (as per PWD-3) (attached separately)

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S.No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
1	2	3	4	5
---	----NIL----	--NIL--	-----	-----

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.No.	Description	Hire charges per day	Place of issue
1	2	3	4
---	----NIL----	--NIL--	-----

SCHEDULE 'D'

Extra schedule for specific requirements/document for the work, if any.

COMMERCIAL AND ADDITIONAL CONDITIONS & TECHNICAL SPECIFICATIONS as per NIT

SCHEDULE 'E'

Reference to General Conditions of contract.

Name of work: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)

(i)	Estimated cost of work:	₹ 3,64,133/-
(ii)	Earnest Money:	₹ 7,283/-
(iii)	Performance Guarantee:	(a) 5 % of tendered value or Estimated Cost Put to Tender (ECPT) (Whichever is higher) (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.
(iv)	Security Deposit:	2.5% of tendered Value

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS: Officer inviting tender: The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3: **See below**

Definitions:

2(v)	Engineer-in-Charge	The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.
2(viii)	Accepting Authority	The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.
2(x)	Percentage on cost of materials and Labour to cover all overheads and profits	15%
2(xi)	Standard Schedule of Rates	DSR (E&M) 2025 with amendments up to date of submission of bid
2(xii)	Department	Central Public Works Department
9(ii)	Standard CPWD Contract Form	GCC 2023 Construction, CPWD Form 7/8 modified & Corrected up to the previous day of last date of online submission of tender.

Clause 1

- (i) Time allowed for submission of Performance Guarantee, Programme chart (Time and progress) Applicable Labour license, Certificate of Registration EPFO, ESIC, if Proof of application for the same uploaded: **7 days**
- (ii) Maximum allowable extension **with late fee 0.1% Per day of performance guarantee amount(non-refundable) the Period provided in (i) above: 5 days**

Clause 2

Authority for fixing compensation under clause 2: Chief Engineer, Chennai Zone, CPWD, Chennai or his successor thereof.

Clause 2A

Whether Clause 2A shall be applicable: No

Clause 5

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

Mile stone(s) as per table given below:

S.No.	Description of Milestone (Physical)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of mile stone
		NIL	

Time allowed for execution of work: **3 Months**

Authority to decide:

- (i) Extension of time: The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.
- (ii) Rescheduling of mile stones: The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.
- (iii) Shifting of date of start in case of delay in handing over of site: The Assistant Engineer (E&M), C.E.S.D. – III/1, CPWD, Chennai-40.

Clause 6, 6A

Clause applicable – **6A**

Computerized Measurement Book (CMB)/ Electronic

Measurement Book (EMB)

Mode of Measurement: **CMB**

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. 2,00,000/-

Clause 7A: Whether clause 7A shall be applicable: Yes.

Clause 10A: List of testing equipment to be provided by the contractor at site lab.:

Nil

Clause 10B(ii):

Whether Clause 10 B (ii) shall be applicable: No

Clause 10C: Not Applicable

Clause 10CA: Not Applicable

S.No.	Material covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA

* Base price of all the materials covered under clause 10 CA is to be mentioned at the time of approval of NIT.

Clause 10CC: Not Applicable

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column: months

Schedule of component of other Materials, Labour, POL etc. for price escalation.

Component of civil (except materials covered under)

Clause 11

Specifications to be followed for execution of work	Civil work: (i) CPWD Specifications 2019 volume- I & II with correction slips up to the last date of submission/ uploading of tender
	Electrical work: (i) CPWD General Specifications for Electrical works Part I Internal – 2023 (ii) CPWD General Specifications for Electrical works Part II External – 2023 (iii) CPWD General Specifications for Electrical works Part III Lift & Escalators – 2003 (iv) CPWD General Specifications for Electrical works Part IV Sub Station – 2013 (v) CPWD General Specifications for Electrical works Part V Wetriser & Sprinkler Systems – 2020 (vi) CPWD General Specifications for Electrical works Part VI Fire Detection and Alarm System – 2018 (vii) CPWD General Specifications for Electrical works Part VII DG Sets – 2013 (viii) CPWD General Specifications for Electrical works Part VIII Gas Based Fire Extinguishing System – 2013 (all with amendments/ correction slips up to the last date of submission/ uploading of tender)

12.2. & 12.3 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work: **No Limit**

12.5 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work: **Not applicable**

Type of work: Construction Work

Clause 16

Competent Authority for deciding reduced rates: **CE (Chennai Region)**

Clause 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site:

1	Earth Tester
2	Insulation Tester LT / HT
3	Tong Tester
4	Multi Meter
5	Lux Meter
6	Vernier Caliper
7	Wire Gauge
8	Hand Blower/Vacuum Cleaner
9	Drill Machine
10	Chase Cutting Machine
11	Crimping toolkit
12	Self-Supporting ladder – 4ft 3 Nos
13	Ladder – 20 ft 1 No
14	Electrical Wiring drawing machine
15	Cable fault locator Machine
16	One Set of Hydraulic crimping toolkit
17	Earth fault loop impedance tester / Multi Tester
18	Installation Tester (Voltage, Current, Loop impedance, RCD Tripping, Insulation etc

Clause 19C **Rs. 200/- Per day each day of default**

Clause 19D **Rs. 200/- Per day each day of default**

Contractor shall submit the report by 4th and 19th of every month

1	Number of labourers employed	
2	Working Hours	
3	Wages Paid	
4	Accidents occurred	
5	Number of female workers employed	

Clause 19G **Not Applicable**

Clause 19K **Not Applicable**

Clause 25(i)**Constitution of Dispute Redressal Committee:**

(i) For all claims in dispute:

- (a) Conciliator: (Special Director General or the Additional Director General concerned with the work, as applicable).
- (b) Arbitrator Appointing Authority: Chief Engineer (Chennai), CPWD, Chennai or his successor or thereof.
- (c) Place of Arbitration: Chennai, Tamil Nadu.

Notice for appointment of Arbitrator

To
The Chief Engineer, Chennai.

.....

Subject: Notice for appointment of Arbitrator for adjudication of disputes relating to agreement Number.....

Dear Sir,

In terms of **clause 25 (Arbitration Clause)** of the aforesaid agreement, particulars of which are given below, I/we hereby give you notice to appoint an arbitrator for adjudication of disputes mentioned below:

1. Name of applicant
2. Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd. Co.
3. Full address of the applicant
4. Name of the work and contract number in which arbitration sought
5. Name of the Division which entered into contract
6. Contract amount
7. Date of contract
8. Stipulated date of start of work
9. Stipulated date of completion of work
10. Actual date of completion of work (if completed)
11. Total number of claims made
12. Total amount claimed
13. Date of intimation of final bill (if work is completed)
14. Date of payment of final bill (if work is completed)
15. Amount of final bill (if work is completed)
16. Date of reference made to SDG/ADG for conciliation, if applicable:
17. Date of termination of conciliation proceedings:
18. I/We hereby give consent for appointment of Arbitrator of MoHUA Waiver agreement as per Appendix –XIX is enclosed

Or

I/We do not give consent for appointment of Arbitrator of MoHUA.

I/We certify that the information given above is true to the best of my/our knowledge. I/We enclose following documents.

1. Statement of claims with amount of claims.
2. * Agreement of Waiver of Section 12(5) of the Arbitration and Conciliation Act. 1996 in Appendix-XIX
(Strikeout if not applicable)

Yours faithfully,

(Signature of the applicant)
(Only the person/authority who signed the contract should sign here)

Copy to:

1. The Executive Engineer ('E), Chennai-I, Central PWD, Shastri Bhawan, Chennai-06.

APPENDIX-XIX

Agreement towards waiver of Section 12(5) of Arbitration & Conciliation Act 1996

1. Whereas certain disputes have arisen between M/s (Claimants) and M/s (Respondents) relating to agreement No.....
2. And whereas the parties are aware that Shri is on the cadre of CPWD, presently on deputation as Arbitrator, Ministry of Housing and Urban Affairs, Government of India.
3. I/We agree for the appointment of Shri as the sole Arbitrator for adjudication of the disputes, and we hereby waive the applicability of Section 12(5) of the Arbitration & Conciliation Act, 1996.

(Signature)

(Only the person/authority who signed the contract should sign here)

Name

Date

(The name of the Arbitrator, Ministry of Housing and Urban Affairs, Government of India may be enquired from the Engineer-in-charge, if required).

Clause 36 (I) Requirement of Technical Representative (S) and recovery Rate

Sl No	Requirement of Technical Staff- Qualification.	Designation of Technical Staff	Minimum Experience (Years)	Nos. (of Major+Minor component)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provisions of Clause 36(i)	
					Figures	Words
1	Graduate Engineer or Diploma Engineer	Project Manager cum planning/quality/site/ billing Engineer	2 or 5 respectively	1 of major comp	Rs 15000/- per month per person	Fifteen thousand only

Form of Performance Security (Guarantee)

Bank Guarantee Bond

In consideration of the President of India (hereinafter called “The Government”) having offered to accept the terms and conditions of the proposed agreement between **Executive Engineer (Electrical), CCED-III, CPWD, Chennai-600040** and(hereinafter called “the said Contractor(s)”) for the work..... (hereinafter called “the said agreement”) agreed to production of an irrevocable Bank Guarantee for Rs. (Rupees..... only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We, (herein after referred to as “the Bank”) hereby undertake to pay to the Government an amount not exceeding Rs. Rupees..... Only) on demand by the Government.
2. We,(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs..... (Rupeesonly)
3. We, the said bank further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.
4. We, (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in- Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.
5. We, (indicate the name of the Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or

from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
7. We, (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
8. This guarantee shall be valid up tounless extended on demand by the Government Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged. Dated the.....day offor.....(indicate the name of the Bank)

FORMS

Form -F

Receipt of deposition of Original EMD

Receipt No. Dt.	
1. Name of Work*	Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)
2. NIT No.*	55/ CESD 3/I/CED-I/2026-2027/CPWD/CHENNAI – 40/AE (E)
3. Estimated Cost*	₹ 3,64,133/-
4. Amount of Earnest Money Deposit*	₹ 7,283/-
5. Last date of submission of Bid*	Up to: 11.00 AM on 26.09.2026
(* To be filled by NIT approving authority / EE at the time of issue of NIT and uploaded along with NIT)	
1. Name of Contractor#	
2. Form of EMD#	
3. Amount of Earnest Money Deposit#	
4. Date of Submission of EMD#	
Signature, Name and Designation of EMD receiving officer (AE inviting bids/ EE/AE(P)/AAO, CPWD) along with office Stamp	

- i) The Authority receiving EMD in original form examines the EMD deposited by the bidder and issues receipt of deposition of earnest money to the agency in a given format uploaded by tender inviting authority. The receipt can also be issued by any subordinate gazetted authority as authorized by the EE/Engineer in Charge/DDH.
- ii) The authority receiving original EMD also intimates tender inviting authority about deposition of EMD by the agency by email/fax/telephonically.
- iii) The original EMD receiving authority releases the EMD to unsuccessful bidders after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier, after verification from the e-tendering portal website (www.tenderwizard.com>tender free view> advance search>awarded tenders) that the particular contractor is not L-1 bidder and work is awarded.
- iv) The tender inviting authority calls for original EMD of the L1 bidder from EMD receiving authority immediately.

Note: - Earnest Money in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt drawn in favour of "The Executive Engineer (E), CCED-III, CPWD, Chennai-40".

FORM – J**PROFORMA OF AFFIDAVIT FOR NON-BLACKLISTING**

Name of Work: **Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)**

I/we Undertake and confirm that our firm/partnership firm has not been blacklisted presently (as on last date of submission of the bid) by any State Govt./ Central Govt. Departments / Public Sector Undertakings / Autonomous bodies. Further that, if such information comes to the notice of the department then I/we shall be debarred for bidding in CPWD for this work & in future forever. Also, if such information comes to the notice of department on any day before date of start of work, the Engineer-in-charge shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit / Performance Guarantee (Scanned copy of this notarized affidavit to be uploaded at the time of submission of bid)

NOTE: This Affidavit to be furnished on a ‘Non-judicial’ stamp paper worth Rs.100/-

Signature of Bidder (s) or an authorized Officer of the
firm with stamp & seal

Signature of Notary with seal

ADDITIONAL CONDITIONS

Name of work: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)

The work shall be carried out in accordance with the CPWD General Specification for electrical works (Part-I to Part –VIII) as amended up to date. The installation shall comply with the requirements of Indian Electricity Rules 1956 as amended up to date and NEC 2011.

1. The above schemes of all the E&M works shall have to meet all the requirements of local bodies / CEA/ NBC norms as applicable& also meet the technical specifications of various relevant CPWD specifications for electrical & mechanical services.
2. All the above schemes shall be got approved as applicable before commencement of execution of work at site. During execution, if the local bodies etc. require a modification, the same shall be executed. Finally, after execution preparation of documents required for approvals / NOCs / clearances from local bodies etc. shall be the responsibility of successful bidder for which nothing extra is payable. In case any modification / extra work is required, the same will be paid as per relevant clauses of the agreement. All statutory fees / charges required for obtaining clearances from CEA / Local Bodies shall be paid by the contractor and the same shall be reimbursed on submission of documentary proof.
3. Approval of the Engineer-in-charge shall be taken well in advance for all the materials to be supplied and used in all the works by the contractor.

4. **Payments terms:**

On account payments for part work (after stipulated and statutory deductions) as assessed by the Engineer – in-charge for the applicable items in the Contract shall be payable at part rates not exceeding the percentage indicated against the stages of work.

Items connected with point wiring, circuit wiring, sub-main wiring, power point wiring and light plug wiring.

S. No	Stage of work	Percentage of quoted Rate
a	On laying of conduits with accessories, switch boxes, etc.	40%
b	On drawing of wires i/c terminations, switches, sockets, cover plates etc.	45%
c	On completion of item and after testing and Commissioning.	10%
d	At the time of payment of final bill	5%

- Items of Distribution Boards, MCBs, RCBOs, fittings etc.

S. No	Stage of work	Percentage of quoted Rate
a	On initial inspection of material and delivery at site in good condition on pro-rata basis.	70%
b	On completion of installation on pro-rata basis.	15%
c	On completion of testing and commissioning.	10%
d	At the time of payment of final bill.	5%

• Items of LT Panel.

S. No.	Stage of Work	Percentage of quoted Rate
I)	After initial inspection (wherever specified) & delivery at site in good condition on pro-rata basis	65%
II)	On completion of installation on pro-rata	15%
III)	On commissioning	10%
IV	On testing and handing over	10%

5. For other items, the part rates will be decided by the Engineer-In-Charge of the work and shall be binding on the contractor.
6. The contractor his representative is bound to sign the site order book as and when required by the Engineer-in-charge and will comply with the remarks therein.
7. The connections, inter-connections, earthing and loop earthing shall be done by the contractor wherever required to be done for energization of the installation and nothing extra shall be paid on this account.
8. The contractor shall remove all the debris due to the electrical works from the site as soon as the work is completed.
9. The wiring and conduit route shall be marked by the contractor in the drawing first, and shall be got approved from the Engineer-in-charge.
10. The rupturing capacity of the MCB 's shall be 10 KA. The MCB 's shall have ISI mark. Quantities of MCBs of different rating of 6 amps to 32 amps shall be brought in consultation with the Engineer-in-Charge or his representative.
11. All the MCCBs shall be rated for $I_{cs}=100\%I_{cu}$
12. The copper wire to be used on this work shall be FRLS type and ISI marked.
13. The make of switch boxes shall be the same as that of switches. Only the required knockouts of the switch boxes are to be removed for terminating the conduit pipes with PVC glands / Make of MCB/MCCB shall be the same as the make of MCB DB.

14. All the switch boxes, MCBDBs are to be covered with plastic sheet / petroleum gelly when installed in brick work till the plastering / painting is done to avoid sticking of cement plaster/ splashes of the paint. Cement plaster / paint are to be cleaned immediately after plaster to avoid rusting of switch boxes and MCB DBs. The plastic sheet is to be removed at the time of handing over.
15. The Contractor shall furnish documentary proof like delivery challans of purchasing Wires, Modular switches & accessories, MCBs, MCBDB, Fittings, accessories and other items from the manufacturers or their authorized dealers to the satisfaction of the Engineer-in-charge.
16. All PVC conduits accessories shall be of the same make as conduits. The Conduits shall be terminated at switch boxes/metallic junction boxes with suitable PVC glands/check nuts.
17. Cutting of brick walls shall be with chase cutting machine only. All repairs and patch works shall be neatly carried out to match the original finish and to the entire satisfaction of the Engineer in Charge. Any damage done to the building during the execution of electrical work shall be the responsibility of the electrical contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. Any expenditure incurred by the department in this connection shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final.
18. All the sub main and circuit wiring includes loose wire for connections inside switch boxes and MCB DB s. No payment for these loose wires shall be made.
19. All the circuits / sub-main wiring are to be suitably numbered with stickers at LT panel, MCBDBs, switch boards (on backside of cover plate) for ease of maintenance. Nothing shall be paid extra on this account.
20. To facilitate drawing of wires, 18 SWG GI fish wire shall be provided along with laying of recessed conduit for which no extra payment shall be made. Conduits laid for other services, like fire alarm, PA etc., where wiring is not done along with IEI works, fish wire shall be invariably drawn.
21. Copper conductor of insulated cables of size 1.5 Sq.mm and above shall be stranded and terminals provided with crimped lugs.
22. All MS junction box cover should be of phenolic laminated sheet of thickness not less than 3mm and for which nothing extra shall be paid on the account.
23. All sub-main/circuit/power wiring shall be terminated in the main board/switch boards with suitable copper lugs and thimbles for which nothing extra will be paid on this account.
24. All hardware items such as screws, thimbles, GI wire etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned.

25. All hardware items such as nuts/ bolts/ screws/ washers etc. to be used in work shall be zinc/ cadmium plated iron.
26. Any conduit which is not be wired by the contractor shall be provided with GI fish wire for wiring by some other agency subsequently. Nothing extra shall be paid for the same.
27. While laying conduit, suitable size junction boxes shall be provided for pulling the wire as per the decision of the E-in-C.
28. Materials to be used in work are to be ISI marked. The make of the materials have been indicated in the list of acceptable makes. No other makes will be acceptable. The materials to be used in the work shall be got approved by the Engineer in Charge / his representative before its use at site. The E-in-C shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not acceptable.
29. Where switches/ sockets/ regulator/ telephone/ TV / internet outlets are to be provided, the same shall be of only one make.
30. While laying conduits for fire alarm system, sufficient junction outlets are to be provided as per the direction of the Engineer-in-Charge for detectors as required, for which no extra payment shall be made.
31. Wherever light fittings are proposed to be provided on the false ceiling, the respective light / fan point wiring will have to be brought upto the terminal of the light fittings / fans by the contractor. Flexible metal conduits shall be used for drawing wires from PVC conduits on ceiling to fittings on false ceiling and nothing extra shall be paid to the contractor for the same. The height from false ceiling to ceiling is about 1.2 metres.
32. All LT Panel Boards, MCB & MCCB DB's, UPS and RAW Power outlets should be marked with paint / Sticker for identification as per direction of engineer in charge.
33. All LT UG Cables should be labeled with engraved Plastic PVC Sheet both the ends for identification as per direction of engineer in charge
34. All Cable glands should be earthed with copper clips & should be connected with main earth through copper wire as per direction of engineer in charge.
- 35. All the LED Bulbs / LED fittings shall be guaranteed for a period of 5 years. Necessary Guarantee Certificate from the Original Manufacturer shall be submitted. The Contractor also submit warranty of 5 years in his letter head.**

- 36. All the Fire Extinguishers shall be guaranteed for a period of 3 years. Necessary Guarantee Certificate from the Original Manufacturer shall be submitted. The Contractor also submit warranty of 3 years in his letter head.**
37. The LED fittings shall give an output of not less than 100 lumen/watt. CRI should be more than 80.
38. Total Harmonic Distortion (THD) of all LED fittings except 10 W / 20 W batten shall be less than 10%. For batten fittings THD shall be maximum 15%. Test certificate from manufacturer / any NABL approved laboratory shall be submitted along with supply of the items.
39. All (Except LED fittings) Equipments supplied and installed shall be covered by warranty for 12 months effective from the date of acceptance against defective workmanship and materials. If any equipment is found to be defective due to faulty workmanship, faulty materials, faulty design or inferior quality of materials during the warranty period it shall be repaired and/ or replaced at site free of charge by the successful tenderer at his own cost. The warranty shall cover consequential damages to the equipment supplied and installed by the tenderer due to poor workmanship or defective materials. All repairs shall be done promptly within a reasonable period.
40. Warranty certificates, wherever specified shall be from the Original Manufacturer shall be submitted along with the bill.
- 41. The Panel fabrication shall be from any of the CPRI approved panel Builders. The panel drawings shall be got approved prior to fabrication.**
- 42. Panel builder having CPRI test certificates for successfully testing panels with bus bar rating equivalent to the highest bus bar rating stipulated for panels in the BOQ**
43. The contractor has to make his own arrangement for stores and watch & ward and no extra claim for this will be entertained.
44. The contractor has to make his own arrangement at his own cost for all the general and special T&P required on the work.
45. All the debris due to the Electrical works shall be removed from the site by the contractor as soon as the work is completed. Similarly rejected materials should be immediately be cleared from the site by the contractor. Otherwise a recovery @ 50/- per day shall be made.
46. The Cabling and wiring route shall be marked in drawing first and got approved from Engineer-in-Charge.
47. Earthing lugs shall be provided for connecting all earth wires to all switch boxes / boards without any extra cost.

48. GST etc. if any should be included in the rates tendered. Statutory deduction of 1% LWF and Income tax at source shall be made from running bills of the contractor.
49. The copper wire to be used on the work shall be multi-strand and ISI marked.
50. The agency shall obtain prior approval for makes and models of Items to be used from the Engineer-in-charge.
51. Any accident / injury happened to the worker during the course of duty, the sole responsibility lies on the contractor for accident / injury. Any risk cover and compensation if necessary in this regard shall be the responsibility of the contractor and the department is not liable for payment of any compensation, damages etc. in any way.
52. All dismantled materials shall be accounted properly, carried to the departmental Stores / Stores of the Client in the campus and stacked properly as directed by the JE(E)/AE(E).
53. The work shall be carried out in occupied buildings and with No/minimum hindrance to their normal functioning.
54. The portion of conduit and switch boxes laid on wall shall be recessed on existing plastered wall by neatly cutting chassis (with cutter machine), re-plastering and finishing. Nothing extra on this account is payable.
55. The materials used in the work shall be one of the approved makes mentioned in Annexure-A.
56. The work should be carried out at GPRA, Thirumangalam, Chennai.
57. **Wherever specialized agencies are required to be associated, the same shall be done immediately on award of work. Failure to do the same will be sufficient reason to terminate the contract/ department to take necessary action to carry out these portions of work at the risk and cost of the original contractor.**

**Assistant Engineer (E&M)
CESD-III/1, CPWD, Chennai**

TECHNICAL SPECIFICATIONS OF MV / LT PANELS

1. Scope

This Section covers the detailed requirements of medium voltage switch Panel for 433V, 3 phase 50 Hz 4 wire system. All switchgears shall be fully rated at an ambient of 40° C.

2. Type of Panel

The medium voltage switch board panel shall comprise of anyone of the following types of switchgears or combination thereof as specified.

- a) Air Circuit breakers shall be draw out type.
- b) MCCBs of suitable Ics ratings. MCCBs shall invariably be Current Limiting type. Features like Double Break, Positive Isolation functions shall be preferred.

The Panel shall be indoor /outdoor type having incoming sectionalisation and outgoing switchgears as specified. The design shall be cubical type. The degree of enclosure protection shall be IP 42 for indoor and IP 54 for outdoor panels as per IS: 13947 (Part-I).

3. M. V. Panel

1.1 General Construction:

The switchboard shall be floor mounted free standing totally enclosed and extensible type. The switch board shall be dust & vermin proof and shall be suitable for the climate conditions as specified. The design shall include all provisions for safety of operation and maintenance personnel. The general construction shall conform to IS: 8623/1993 for factory assembled switch board.

1.2 Cubical Type Panels

1.2.1 Cubical type panels shall be fabricated out of sheet steel not less than 2.0 mm thick. Wherever necessary, such sheet steel members shall be stiffened by angle iron frame work. General construction shall employ the principle of compartmentalization and segregation for each circuit. Unless otherwise approved, incomer and bus section panels or sections shall be separate and independent and shall not be mixed with sections required for feeders. Each section of the rear accessible type panel shall have hinged access doors at the rear. Overall height of the panel shall not exceed 2.4 meters. Operating levers, handle etc. of highest unit shall not be higher than 1.7 meters. Multi-tier mounting of feeder is permissible. The general arrangement for multi-tier construction shall be such that the horizontal tiers formed present a pleasing and aesthetic look. The general arrangement shall be approved before fabrication. Cable entries for various feeders shall be either from top or bottom. Through cable alleys located in between two circuit sections, either in the rear or in the front of the panel. All cable terminations shall be through gland plates. There shall be separate gland plate for each cable entry so that there will not be dislocation of already wired circuits when new feeders are added. Cable entry plates shall therefore be sectionalized. The construction shall include necessary cable supports for clamping the cable in the cable alley or rear cable chamber. Cubicle panels with more than 1000 Amps BUS shall be made of tested structural modular sections.

1.2.2 Bus Bar and Connections

The bus bars shall be of copper of high conductivity electrolytic quality and of adequate section. Current density shall not exceed 160 amps for copper /sq. cm. The bus bar system may comprise of a system of main horizontal bus bars and ancillary vertical bus bars run in bus bar alleys on either side of which the circuit could be arranged with front access cable entries. In the case of rear access, horizontal bus system shall run suitably either at the top or bottom. All connections to individual circuits from the bus bar shall preferably be solid connections; however flexible connections shall also be permitted as per recommendations of the Panel Manufacturer. All bus bars and connections shall be suitably sleeved / insulated in approved manner. Bus bar should be 100% neutral.

1.2.3 Incomer / Termination

Incomer termination shall be suitable for receiving bus trunking / underground cables. Cable terminations shall invariably be through terminal blocks (Polyamide or superior) or brought out solid terminals.

1.2.4 Instruments

All voltmeters, ammeters and Multi-function meters shall be flush mounted as specified in schedule of work, conforming to class 1.5 of IS:1248 for accuracy. All meters shall be protected with MCB

1.2.5 Indicating Lamps

On all the incomers of M.V panels, ON/OFF indicating LED lamps shall be provided and shall be suitable for operation on AC supply.

1.2.6 Small Wiring

All small wiring for Controls, Indication etc. shall be of with suitable FRLS/HFFR (halogen free fire retardant) copper conductor cables. Wiring shall be suitably protected within switch board. Runs of wires shall be neatly bunched, suitably supported and clamped. Means shall be provided for easy identifications of the wires. Where wires are drawn through steel conduits, the works shall conform to CPWD General Specifications for Electrical works (Part 1- Internal) - 2005 and IS: 732 as the case may be. Identification ferrules shall be used at both ends of the wires. All control wiring meant for external connections are to be brought out of terminal board.

The equipment shall be designed to confirm to the below requirements for LT Panels.

Sl.No	Name of equipment	IS Code
1.	Air circuit breakers/MCCB	IS: 60947 (Part-II) & IEC 60947(2)
2.	Fuse switch and switch fuse units	IS: 13947 (Part-3) & IEC 947(3)
3.	HRC fuse links	IS: 13703
4.	Current Transformers	IS: 2705
5.	Voltage Transformers	IS: 3156
6.	Indicating instruments	IS: 1248
7.	Integrating instrument	IS: 722
8.	Control switches and push buttons	IS: 6875
9.	Auxiliary contactors	IS: 13947 (Part4/Sec-I) & IEC 947(4/1)
10	Relays	IS: 3231

OPERATIONAL REQUIREMENTS

The indoor/outdoor type MV panel shall conform to the following:

- The panel shall comprise of incomers, outgoing feeders and bus coupler as specified. The incomer shall be either a double break / contact repulsion MCCB or an Air Circuit Breaker. The bus coupler shall be either a circuit breaker or a double break / contact repulsion MCCB as specified. The outgoing feeders shall be circuit breakers/MCCBs as specified.
- Bus bars for phase and neutral shall have a rating as per specifications.
- The entire switch panel shall be cubical type generally conforming to IS: 86231-1993 for factory assembled switch board.
- The incomer panel shall be suitable for receiving bus trunking or MV cable of size specified either from top or from bottom.
- All incoming AIRCIRCUIT BREAKER/MCCB shall have suitable adjustable tripping current and the time delay settings.
- The entire panel shall have a common earth bar of size as specified with two terminals for earth connections.
- A suitable size of brick / cement concrete plinth shall be provided for out door panels at site as specified and to suit easy access and operational convenience. Rating and Requirements

2. Rating and Requirements:

2.1 Air Circuit Breaker

All Air Circuit Breakers shall be 3/4 pole with minimum 50 KA breaking capacity (35 MV A at 433V) conforming to IS/IEC 60947-2 & IEC 60947-2. Rated current shall be as per capacities specified. The equipment shall be complete with the following:

- Necessary circuit breaker carriage with 3 positions (isolate, test, service) draw out mechanism.
- Necessary isolating plugs and sockets.
- Necessary mechanism interlock and automatic safe shutters gear with arrangement for pad

locking.

- (d) Necessary independent manual spring mechanism with mechanical on/Off indication as well as electrical on/Off indication.
- (e) Necessary bus bars with bolted type neutral links.
- (f) ACB shall be provided with microprocessor-based releases having built in over load, short circuit & earth fault protection. Microprocessor release shall be EMI (electromagnetic induction)/EMC (electromagnetic compatible) certified.
- (g) Necessary set of auxiliary switches.
- (h) Necessary set of CTs with ratios as specified
- (i) Necessary identification, metering requirements as specified i/c. ON/OFF indication lamps, selector switches, fuses, ammeter, voltmeter etc.
- (j) In case of 4 pole breaker neutral shall be fully rated with adjustable settings from 50% to 100% of I_n .
- (k) ACB terminals shall be suitable/suitably brought out for direct aluminium termination as per IS: 13947 Part-II.

2.2 MCCB

All MCCBs shall be current limiting type with features of load line reversibility and suitable for Horizontal / Vertical mounting without any derating. Beyond 300Amps capacity MCCBs shall have positive isolation and preferably double break contact repulsion & double insulation features. The MCCBs shall invariably be used with terminal spreaders. For all MCCBs, $I_{cs} = I_{cu}$.

2.3 Bus Bar Marking: Bus bars and main connections shall be marked by colour or letter on M V Panel.

2.4 TESTS AT MANUFACTURERS WORK

All routine tests shall be carried out and test certificates produced to the department.

3. INSTALLATION, TESTING & COMMISSIONING

3.1 The installation work shall cover assembly of various sections of the panels lining up, grouting the units etc. In the case of multiple panel switch boards after connecting up the bus bars etc., all joints shall be insulated with necessary insulation tape or approved insulation compound. A common earth bar as specified shall be run inside at the back of switch panel connecting all the sections for connection to frame earth system. All protection and other small wirings for indication etc. shall be completed before calibration and commissioning checks are commenced. All relays, meters etc. shall be mounted and connected with appropriate wiring.

3.2 Commissioning checks and tests shall include all wiring checks and checking up of connections. Relay adjustment/setting shall be done before commissioning in addition to routine Megger tests. Checks and tests shall include the following:

- (a) Operation checks and lubrication of all moving parts.
- (b) Interlock function checks.
- (c) Continuity checks of wiring, fuses etc. as required.
- (d) Insulation test: When measured with 500V Megger the insulation resistance shall not be less than 100 mega ohms.
- (e) Trip tests and protection gear test.

4. EARTHING SYSTEMS:

Earthing system shall comprise earth electrodes in accordance with clause 8.2.1 of general specifications for elect. Works (Part I Internal) 2013. For every additional transformer 2 more separate and distinct earth electrodes shall be provided for neutral earthing. The body earthing for transformers, HV & MV panels shall be done to a common earth bus connected to two separate and distinct earth electrodes.

Note: for a single transformer sub-station, the total number of earth electrodes shall be 4 (2 for neutral and 2 for connection to a common earth bus for body earthing). For a two transformers sub-station total number of earth electrodes shall be 6 (4 for neutral earthing, two each for two transformers, and 2 for connection to a common earth bus for body earthing).

4.1 ELECTRODES

The earth electrodes shall be as per CPWD General Specifications for Electrical Works (Part I Internal) 2023.

4.2 LOCATION of EARTH ELECTRODES

Normally an earth electrode shall not be situated less than 1.5m from any building. Care shall be taken that the excavation of earth electrode may not affect the column footings or foundation of the building. In such cases electrodes may be farther away from the building. The location of the electrode earth will be a place where the soil has reasonable chance of remaining moist. As far as possible, entrances, pavements and road ways, are to be definitely avoided for locating the earth electrode.

4.3 WATERING ARRANGEMENT

Method of watering arrangement shall comply with CPWD General Specifications.

4.4 SIZE OF EARTH LEAD

The recommended sizes of copper earth bus lead in case of sub-stations shall be accordance with clause 8.2.2 of General Specifications for electrical works (Part-I Internal) 2023 amended up to date. The minimum size of lead shall be 25mm x 5mm copper of equivalent GI strip.

4.5 INSTALLATION

All joints shall be riveted and sweated. Joints in the earth bar shall be bolted and the joints faces tinned. Where the diameter of the bolt for connecting earth bar to apparatus exceeds one quarter of the width of the earth bar, the connection to the bolt shall be made with a wider piece of flange of copper jointed to earth bar. These shall be tinned at the point of connection to equipment and special care taken to ensure a permanent low resistance contact to iron or steel.

All steel bolts, nuts, washers etc., shall be cadmium plated, main earth bars shall be spaced sufficiently on the surface to which they are fixed such as walls or the side trenches to allow for ease of connections. Copper earthing shall not be fixed by ferrous fittings. The earthing shall suitably be protected from mechanical injury by galvanized pipe wherever it passes through wall and floor. The portion within ground shall be buried at least 60cm deep. The earthing lead shall be securely bolted and soldered to plate or pipe as the case may be. In the case of plate earthing the lead shall be connected by means of a cable socket with two bolts and nuts. All washers shall be of the same materials as the plate or pipe. All iron bolts, nuts and washers shall be galvanized.

4.6 TESTING

After installation, the tests as specified in CPWD General Specifications for Electrical Work (Part I Internal) 2013 shall be carried out and results recorded.

5. SAFETY REQUIREMENTS

5.1 SCOPE

This section covers the requirements of items to be provided in the sub-station for compliance with statutory regulations. Safety and operational needs.

5.2 REQUIREMENTS

Safety provisions shall be generally in conformity with appendices (A) and (C) of CPWD General specifications of Electric Works (Par I Internal) 2013. In particular following items shall be provided:

a) Insulation mats

Insulation mats conforming to IS: 15652-2006 shall be provided in front of main switch boards as well as other control equipment as specified.

b) First Aid Charts and First Aid Box

Charts (one in English, one in Hindi, one in Regional language), displaying methods of giving artificial respiration to a recipient of electrical shock shall be prominently provided at appropriate place. Standard first aid boxes containing materials as prescribed by St. John Ambulance Brigade or Indian Red Cross should be provided in each sub-station.

c) Danger Plate

Danger Plates shall be provided on HV and MV equipment. MV danger notice plate shall be 200mm x 150mm made of mild steel at least 2 mm thick vitreous enamelled white on both sides and with the descriptions in signal red colour on front side as required. Notice plates of other suitable materials such as stainless steel, brass or such other permanent nature material shall also be accepted with the description engraved in signal red colour.

d) Fire Extinguishers

Portable CO₂ conforming to IS: 2878-1976/Chemical conforming to IS: 2171-1976 extinguishers, HCFC Blend A(P-IV) shall be installed in the sub-station at suitable places. Other extinguishers recommended for electric fires may also be used.

e) Fire Buckets

Fire buckets conforming to IS: 2546-1974 shall be installed with the suitable stand for storage of water and sand.

**Assistant Engineer (E&M)
CESD-III/1, CPWD, Chennai**

ANNEXURE-A
LIST OF APPROVED MAKE OF MATERIALS FOR USE

INTERNAL ELECTRICAL INSTALLATIONS		
S.NO	NAME OF THE PRODUCT	MANUFACTURED BY
1	PVC insulated copper conductor FRLS copper ISI marked	Anchor/ Finolex/ Havells/ RR Kabel/ L&T/ Polycab
2	MS Conduits (ISI Marked)	AKG/ BEC/ RMCON/ Jindal/ TATA/ Zenith Birla/ NIC
3	PVC Conduit (ISI Marked)	Avonplast/ AKG/ Precision/ Modi/ Anchor/ Polycab/ Finolex/ BEC / Asian/ Anchor/ NIC / Poly Pack / Prakash / Surya / Astral Surya
4	MCB/ELCB/ RCCB	Legrand/ Siemens / Schneider/ ABB/ Hager/ L&T.
5	Distribution Boards (DB)	Legrand/ Siemens / Schneider/ ABB/Hager/ L&T
6	Modular Type Switches & Sockets/ GI Boxes/ T.V/ Telephone/ LAN socket outlet etc. for Normal applications	Legrand-Myrius-Arteror/ Schneider-Opale-Livia/ MK Elements/MK-Logic plus/ Honeywell (Benz Plus)/ ABB / Siemens
7	DLP Trunking	Legrand/ Schneider/ MK/ L&T
8	Modular Type Switches & Sockets/ Fan regulator/ RJ-45 Data Socket for CMS applications	Legrand-Myrius/ MK-Logic plus/ Honeywell Benz Plus/ Schneider (Livia).
9	AC Wall Fans/ Pedestal Fans.	Crompton/ Orient/ Havells/ Bajaj/ Usha.
10	BLDC Ceiling fans	Atomberg / Havells / Usha
11	BLDC Fresh-Air Fans/ Wall Fans	Atomberg / Havells / Usha.
12	Exhaust Fans	Crompton/ Orient/ Havells/ Bajaj/ Usha/ Almonard/ Atomberg
13	Air Circulator Fans	Crompton/ Orient/ Havells/ Bajaj/ Usha/ Almonard.
14	All LED fittings (Indoor/Outdoor fittings)	Philips / Wipro / Crompton / Bajaj /K-Lite / Havells
15	PVC Batten/Angle Holder	Anchor/ Salzer/ Havells/ Emporer/ K555
16	Architectural Street Lighting Poles & Decorative Brackets	K-Lite/ Lustre/ Havells/ Valmont
17	Hot Dipped Galvanized Octagonal Poles	K-Lite/ Lustre/ Havells/ Bajaj/ Valmont
18	Water Supply Pump sets	Kirloskar / Lubi / Crompton Greaves / KSB / Grundfos
19	Star-Delta/ DOL Starter	Legrand/ L&T/ Siemens/ ABB/ BCH
20	Ball Valve	Zoloto/ Sant/ Honeywell/ Kartar
21	uPVC Pipes	Ashirwad/Finolex/Surya/Jindal/Apollo
22	GI Pipes (ISI marked)	Jindal/ TATA/ Zenith Birla/ SAIL
23	Geyser	Recold/ AO Smith/ Havells/ Crompton
24	Call bell/Buzzer	Siemens/L&T/ Moeler/ M.K./Anchor/ Havells/Philips.
25	Polycarbonate Junction box	Legrand/ Hensel/ Sintex/ Neptune
26	Ceiling rose	Antex/ Leader/ Anchor/ Emperor

<u>SUB-STATION & PANELS</u>		
S.NO	NAME OF THE PRODUCT	MANUFACTURED BY
1	Transformer (Oil type/Dry type)	Crompton Greaves/ Kirloskar/ ABB/ AREVA/ Prolec/ GE/ ALSTOM/ Seimens/ BHEL/ Wilson/ Schneider/ Voltamp / Magnitude / Vijaya Electricals / Power Tech Hyderabad.
2	Packaged Substation/ Unitised Substation	Crompton Greaves/Amararaja/ABB/Voltamp / Kirloskar
3	HT Panel	ABB/Seimens/Schneider/System control/Kirloskar/BK Power
4	LT/HT Cables Jointing Kits	Rayhem/ 3M/ CCI-Xicon/ Denson/ M-seal/Tropolin/Cab seal / Safe KEI
5	LT/HT Cables (Copper/ Aluminium)	Gloster/ Havells/ Universal/ Finolex/ RPG cables/ RR Cable/ Polycab/ CCI
6	Cable glands	Jainsons/ Comet/ Dowells/ Raychem/ Wago / Elmec / Braco Grip wel
7	Cable Lugs	Jainsons/ Comet/ Dowells/ Raychem
8	Cable trays (hot Dip Galvanised)	RMCON/Profab/Indiana/MBM/Legrand/BEC
9	DWC Pipe	Gemini/Rex/Duraline
10	Rising main, End feed Unit, Tap off box	C&S/Legrand/Schneider/Seimens/L&T/ABB-Megaduct (if Air insulated)/ Godrej (S.M.A.R.T).
11	Sandwich type bus trunking	Legrand/ L&T/ Schneider/ C&S / ABB / SIEMENS
12	Floor Trunking/Raceway (GI)	Honeywell MK/ OBO Betterman/ Legrand/ Profab
13	Contactors	Siemens / L&T / Schneider / ABB / Havells / C&S
14	LT Panel / Meter Panel Boards/Outdoor Feeder Pillar / APFC Panels / Bus Ducts	Panel builder Having CPRI Test Certificates for successfully testing panels with Bus Bar Rating Equivalent to the highest Bus Bar rating stipulated for panels in the BOQ.
15	Air Circuit Breaker	Seimens/ ABB/ L&T/ Schneider/ Legrand/ Hager
16	Moulded Case Circuit Breaker (MCCB)	Seimens/ ABB/ L&T/ Schneider/ Legrand/ Hager
17	Changeover switches, SDFU	L&T/ ABB/ Schneider/ C&S/ Legrand/ Socomee/ Seimens/ Hager/ Anchor
18	Automatic transfer switch	Havells/ ABB/ Seimens/ L&T/ Schneider/ Legrand/ Hager
19	Timer switch	Schneider Electric/ Legrand/ Hager/ L&T/ ABB/ Seimens/ C&S
20	Selector switches for LT panels	Kaycee/ BCH/ L&T Salzer/ Seimens/ Schneider Electric.
21	Potential Transformers / Current Transformers	Automatic Electric /Gilbert & Maxwell / Matrix / Precise / L&T / Kappa / Kalpa / Vyoma Switchgears / Intrans
22	APFC Relay (Microprocessor based)	Seimens/ EPCOS/ L&T/ GE/ ABB/ Schneider/ L&T / Neptune
23	Contractors for APFC Panels	Seimens/ ABB/ L&T/ GE/ C&S/ Schneider Electric/ Legrand
24	Electronic Load Manager	HPL/ AE/ Schnieder/ Mecon/ L&T/ Konzerv

25	M.V Power Capacitors	L&T Heavy Duty Box Type/ Seimens Epcos V (AC) 3PH, 50Hz/ Neptune Model LLM/ Schneider Varplus Energy (MDXL) 440V Range-Box Type
26	Capacitor and Harmonic Block reactor Thyristor Module	L&T/ Schneider/ Neptune (Ducati)/ Legrand
27	Digital Ammeter/ Voltmeter/ Multifunctional Meters	AE/ Mecon/ Schneider/ L&T/ HPL/ C&S/ Conserve/ Kaycee/ Crompton Greaves/ Scomec (diris)/ Seimens / RISHAB
28	Analog Panel Metres	AE/ Mecon/ Schneider/ L&T/ HPL/ C&S/ Conserve/ Kaycee/ Seimens
29	Indicating Lamps (LED type)	Seimens/ Teknik/ L&T/ BCH/ C&S/ ABB/ Schneider/ Kaycee
30	Push Buttons	Seimens/ Teknik/ L&T/ BCH/ C&S/ ABB/ Schneider/ Kaycee
31	Relays	SEGC/ Crompton/ Seimens/ GE/ ABB/ Schneider/ L&T / AREVA
32	Electric insulation mat with ISI mark	Dozz/ Padmini/ Raychem/ Jyoti Rubber Udyog
33	UPS	APC/ Numeric/ Eaton/ Mitsubishi/ Emerson/ PowerOne/ Vertiv/ Legrand
34	Sealed Maintenance Free Battery	Exide/ Amaron/ Luminous
35	Paint	Nerolac / Asian / Berger
36	Terminal blocks & Connectors	Elmax / Wago / Hensel / Connectwell
37	Phenolic laminated sheet / bakelite sheet	Hylam / Formica (P-I Grade)/Mylam/Greenlam
38	Programmable Logic Controller (PLC)	Comet / Dowells (Biller India) / Hex Brass (Copper alloy India) / Jainson /Action

FIRE FIGHTING SYSTEM

S.NO	NAME OF THE PRODUCT	MANUFACTURED BY
1	Fire Fighting Pumps	Kirloskar/ Grundfoss/ Crompton Greaves/ Bharat Bijlee
2	MS 'C' Class Pipes (ISI marked)	Jindal/ TATA/ Zenith Birla/ SAIL
3	Butterfly Valve	Sant/ Zoloto/ Audco/ Emerald/ Honeywell/ Kartar
4	NRV (Ball Valve)/ Y Strainer	Sant/ Zoloto/ Audco/ Emerald/ Honeywell/ Kartar/ Kirlosker
5	First aid hose reel (ISI marked)	Minimax/ Newage/ Omex/ Safex/ Lifeguard
6	RRL Hose (ISI marked)	Newage/ Arihant/ Winco/ Padmini
7	Double/ Single Headed Hydrant Valve/ Branch pipe (ISI marked)	Newage/ Arihant/ Winco/ Padmini/Kartar/Eversafe
8	Sluice Valve (ISI marked)	Sant/ Zoloto/ Kalpanan/ Honeywell/ Kirlosker
9	Air Release Valve	Sant/ Zoloto/ Audco/ Normex/ Honeywell/ Kartar/ Leader
10	Pressure Switch	Danfoss/ Indfos/ Delta Control
11	Pressure Guage	Feibig/ H. Guru/ Emerald/ Waaree
12	Sprinklers (UL listed only)	HD Fire/ Tyco/ Safex/ Newage/ Omex
13	Sprinkler flexible pipe (UL listed only)	HD Fire/ Tyco/ Safex/ Newage/ Omex
14	Paint/ Primer	Asianpaints/ Nerolac/ Berger

15	Pressure Guage	Feibig/ H. Guru/ Emerald/ Waaree
16	Fire Extinguishers	Minimax/ Safex/ Usha Fire Safety/ Kanex
FIRE ALARM SYSTEM		
S.NO	NAME OF THE PRODUCT	MANUFACTURED BY
1	Addresable/ Semi-Addressable Multi sensor Smoke Detrectors/Heat detectors	Notifier/ Bosch/ System Sensor (Honeywell)/ Siemens/ GE- Security (Edward)/ Johnson Control/ Ravel
2	Addressable/ Semi-Addressable Manual call box	
3	Addressable/ Semi-Addressable Main Fire Alarm Control Panel with Battery Backup/ Repeater Panel	
4	Addressable Control Module/ Isolator Module/ Monitor Module	
5	Hooters/ Horn cum Strobe/ Speaker	
6	Digital Amplifier/Emergency Voice Evacuation System	
7	Talk back system	
8	Response Indicator	
9	Fire Survival Cable	RR Kabel/ Beldon/ Grandlay/ Bosch/ Seimens/ Notifier/ Honeywell/ GE-Security (Edward)/ Johnson Control
HVAC WORKS		
S.NO	NAME OF THE PRODUCT	MANUFACTURED BY
1	Air Conditioners (Split/ Window Type)	Carrier/ LG/ Mitsubishi/ Voltas/ Daikin/ Hitachi/ Blue star/ O-General
2	Voltage Stabilizer	Voltas/ Bluebird/ V-Guard
3	AC Compressor	Hitachi/ Copeland/ Highly/ Carrier/ GMCC/Toshiba
4	Refrigerator	Samsung/LG/Wirlpool

Note: In case make of any equipment or material is not specified in the NIT, the decision of the Engineer-in-Charge in this regard will be final. All makes mentioned above are applicable for all subheads.

**Assistant Engineer (E&M)
CESD-III/1, CPWD, Chennai**

CENTRAL PUBLIC WORKS DEPARTMENT						
O/o ASSISTANT ENGINEER (E&M) -CESD – III/1, CPWD CHENNAI						
NIT No: 55/ CESD 3/I/CED-I/2026-2027/CPWD/CHENNAI – 40/AE (E)						
Name of work: Providing wiring and rewiring points, LED lights, fans and necessary wiring at Aquatic Lab in Ground floor and First floor in CIBA Head Quarters, R.A. Puram, Chennai-28 (Electrical)						
Schedule of Work						
Name of Contractor						
Registration No.						
Validity - Period						
S. No	Description	Qty		Rate	Unit	Amount
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit, with piano type switch, phenolic laminated sheet, suitable size M.S. box and earthing the point with 1.5 sq.mm. FRLS/HFFR PVC insulated copper conductor single core cable etc as required.					
	a) Group C	15	Pts	1960	Pt	29400
2	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable and 1.5 sq.mm. FRLS/HFFR PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel conduit including dismantling as required.					
2.1	Group C	6	Pts	1224	Pt	7344
3	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.					
3.1	3 x 1.5 sq. mm	30	Mtrs	120	Mtrs	3600
3.2	3 x 4 sq. mm	100	Mtrs	255	Mtrs	25500
3.3	6 x 4 sq. mm	30	Mtrs	488	Mtrs	14640
4	Supplying and drawing following Pair 0.5 sq.mm FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface / recessed steel / PVC/CMS as required.					

a	2 Pair	50	Mtrs	45	Mtrs	2250
5	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
5.1	5/6 amps switch	16	No	139	Each	2224
5.2	15/16 amp switch	16	No	202	Each	3232
5.3	3 pin 5/6 amp socket outlet	16	No	156	Each	2496
5.4	6 pin 15/16 amp socket outlet	16	No	252	Each	4032
5.5	Telephone socket outlet	2	No	193	Each	386
5.6	RJ 45 Outlet	2	No	174	Each	348
6	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.					
6.1	25 mm	100	Mtrs	193	Mtrs	19300
7	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.	7	No	462	Each	3234
8	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with Connections, testing and commissioning etc. as required.					
a)	Single Pole	8	No	328	Each	2624
9	Supplying and fixing DP sheet steel enclosure on surface/recess along with 25/32amps 240 volts "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	2	No	1447	Each	2894

10	Brush Less Direct Current (BLDC) Fan without Remote Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, suitable for operation with regulator for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 degree C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC Ceiling Fan compliant to IS 374:2019 fan i/c external connection with 1.5 sqmm FRLS/ HFFR PVC insulated copper conductor single core cable, earthing etc. complete as req.1200mm, service value ≥ 6.0 CM/Min/Watt, air delivery 210 CM/Min (Minimum)	6	No	3099	Each	18594
11	LED Down lighter (SMD Type) (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, installation, Testing & Commissioning of LED Recessed/ surface Down lighter (Round/ square/ Rectangular) SMD type of following body material with PMMA and prismatic diffuser and construction as per IS: 10322 with driver as per the requirement with Driver efficiency $>85\%$, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F.≥ 0.95, IP20, CRI ≥ 80 , UGR (Unified Glare Rating) < 19, Flicker free (flicker should be below 5%), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) < 3, Maximum power consumption should not more than the specified rating and Fixture shall be confirming to relevant BIS standards and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing Complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy $\geq 105 < 120$ lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast/ Extruded aluminium Body including trim					

A	18 Watt	9	Nos	1058	Each	9522
12	LED Panel light 2x2 ft. (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, installation, Testing & Commissioning of Panel light 2x2 ft., of following body material and construction as per IS: 10322 with driver as per the requirement with Driver efficiency $> 85\%$, Operating voltage AC 140-270 Volt, freq 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F. ≥ 0.95, IP20, CRI ≥ 80, UGR (Unified Glare Rating) < 19, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with, 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) < 3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. Complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5-year OEM warranty. System lumen efficacy $\geq 105 < 120$ lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).					
	Powder Coated CRCA Sheet Body (Thickness > 0.50 mm)					
12.1	36 watt	17	Nos	2368	Each	40256

13	LED Batten light (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency $> 85\%$, Operating voltage AC 140 - 270 Volt, frequency 50/60 hz, Operating temp range -5°C to 40°C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F. ≥ 0.95, IP20, CRI > 80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) < 3,					
	Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark / Name Engraved/ Embossing/ Screen printing on housing complete in all respect i/c external connections with 1.5 sq mm FRLS / HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy $\geq 105 < 120$ lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).					
	Powder coated die cast /Extruded aluminium Body (Thickness ≥ 1.20 mm)					
13.1	18-22 watt	2	Nos	783	Each	1566

14	LED Street light fixture, powder coated pressure die cast aluminium body (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, installation, Testing & Commissioning of Street light LED fixture powder coated pressure die cast aluminium body with driver as per the requirement with Driver efficiency $> 85\%$, Input voltage: 140-270 Volt AC, freq 50/60 hz, Operating temp range -5 deg to 50 deg centigrade, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency $> 85\%$, THD $< 10\%$ as per IEC 61000-3-2, P. F. ≥ 0.95, IP-66, IK-10, CRI ≥ 70, life time (LED, Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM- 21-11 report, CCT 3000°K/ 4000°K/ 5700°K/ 6500°K (As per ANS Bin),					
	Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy $\geq 105 < 120$ lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).					
14.1	45 watt	30	Nos	1571	Mtrs	47130
15	Supplying, Installation, Testing and Commissioning of LED Flood Light Outdoor Type Fitting designed for all weather conditions made with pressure die cast aluminium housing having effective thermal management, corrosion resistant suitable for installation on existing wall/surface using adjustable MS cradle with angular dial provided with the fixture etc. The Luminaire shall have following specifications as Efficacy > 110 Lumen/Watt, Inbuilt Surge Protection Device of not less than 10KV, IP66 Protection, Operating Voltage Range 140V - 270V, Colour Temperature 5700K, Complete system power rating not more than 150 Watts with High-performance Constant Current Electronic Driver suitable for operation on 230V, 50Hz AC Supply including connection with 1.5 Sq.mm. FRLS PVC insulated copper wire single core cable, earthing the fitting etc. as required.					
15.1	150 watt	1	Nos	9595	Each	9595

15.2	200 watt	1	Nos	12821	Each	12821
16	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diameter should be in the range of 6.1mm nominal with Operating Temperature Range: -5° to +60°C. Bending Radius: < 4 X Cable Diameter at -5°C ± 1°C and Pulling Force : 11.5 Kg					
16.1	1 Run Cable	50	Mtrs	69	Mtrs	3450
17	Supplying and fixing following size/ modules, modular base & cover plate for modular switches, on existing cable management system etc. as required.					
17.1	1 or 2 Module	2	Nos	179	Each	358
17.2	3 Module	16	Nos	201	Each	3216
17.3	6 Module	8	Nos	238	Each	1904
18	Providing and fixing uPVC cable management system of size 100/105mm x 50mm with all required accessories such as couplers, end caps, angles, tees, cable retainers at an interval of 0.5 meter etc suitable for fixing socket outlets on mounting boxes (but without switches, sockets and boxes.) as required.	40	Mtrs	1618	Mtrs	64720
19	Providing and fixing partition for uPVC cable management system of size 100/105mm x 50mm as required.	40	Mtrs	236	Mtrs	9440
20	Supplying, Installation, Testing and Commissioning of 10 Watt 2 ft LED Batten/ Mirror Light made up of extruded aluminium body with integrated electronic driver suitable for surface mounting. The Luminaire shall have following specifications as System Efficacy ≥ 100 lm/W, CRI ≥ 80, THD < 20%, Colour Temperature Range: 5700K - 6500K suitable for operation on 230V, 50Hz AC Supply including connections etc as required.	1	Each	633	Each	633
21	Supply, Installation, Testing and Commissioning of 200 mm sweep, Fresh Air/ Exhaust fan with Brush Less Direct Current (BLDC) Motor, made out of ABS Plastic Body and louvers, Double ball bearing for less noise, copper winding, Air delivery minimum 800 CMH, 1600 RPM, suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc complete as required.	1	Each	3093	Each	3093

22	Supply, Installation, Testing and Commissioning of 300 mm sweep, Heavy Duty Metal Exhaust fan with Motor specially designed for industrial use made out of Metallic Body and louvers having following specifications: Material of winding: Copper winding, Air delivery (minimum): 1710 CMH, Speed: 1400 RPM, ISI Marked, No. of blades: 4 Nos, Double ball bearing for less noise, suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc complete as required.	1	Each	5203	Each	5203
23	Supply, Installation, Testing and Commissioning of 230 mm sweep, Metal Exhaust fan made out of Metallic Body and louvers having following specifications: Material of winding: Copper winding, Air delivery (minimum): 800 CMH, Speed: 1400 RPM, ISI Marked, No. of blades: 4 Nos, Double ball bearing for less noise, suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc. etc complete as required.	1	Each	2039	Each	2039
24	LED Industrial Batten light (System lumen efficacy >120 lm/Watt) Supplying, Installation, Testing and Commissioning of 40 Wattage LED Industrial Batten type Luminaire made up of Extruded aluminium housing suitable for surface mounting. The Luminaire shall have following specifications: Operating voltage AC 140-270 Volt, freq 50 hz., THD < 10% , P. F.≥0.95, IP65, CRI ≥80, , CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5-year OEM warranty. . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).Powder coated die cast /Extruded aluminium Body	3	Each	2363	Each	7089
Total Rs.						₹ 3,64,133

Say Rs. 3,64,133/- (Rupees Three Lakh Sixty Four Thousand One Hundred and Thirty Three Only).

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