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Certified that this Draft NIT contains pages from 1 to 68.

**EXECUTIVE ENGINEER (E),
MUMBAI - I, CPWD, MUMBAI -20.**



GOVT. OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
Office of the Executive Engineer (E) Mumbai – I,
Central Public Works Department
2th Floor, “Pratishtha Bhavan” Room no. 216,
New Marine Lines, Mumbai -400 020.
Tel. : 022 - 2401 3803 Fax : 022 - 2401 1330
E-Mail : mumeeelmcdd1.cpwd@gov.in /



SHORT NOTICE INVITING e-TENDER
(Applicable for inviting open tenders)

No. : 23(71)/ EE (E)/MUMBAI I / 2026-27/1143H Dated : 24/ 08/ 2026

The Executive Engineer (E), MUMBAI-I, CPWD on behalf of President of India invites online Percentage rate bids in Single Bid System from CPWD enlisted contractor (Building & Road category) having valid electrical license for the following work :

SI. No.	NIT No.	Name of work & Location	Estimated cost put to Tender	Earnest Money	Period of Completion	Last date & time of online Submission of e-Tender	Time & date of submission of physical EMD in the manner as stated in condition no. 10 of CPWD-6	Time & date of opening of Tender
1	2	3	4	5	6	7	8	9
1	12/EE(E)/MUMBAI-I/2026-27	Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.	₹ 60,52,757/-	₹ 1,21,055/-	1 Month	28.08.2026 Upto 4:30 p.m.	28.08.2026 Upto 4:30 p.m.	28.08.2026 After 5:00 p.m.

The tender document consisting of 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 & www.eprocure.com free of cost.

**EXECUTIVE ENGINEER
(E), MUMBAI - I, CPWD,
MUMBAI-20.**

Copy to :

- 1 The Executive Engineer, MUMBAI – I, CPWD, Mumbai
- 2 Assistant Engineer (E), Sub Division-IV, MUMBAI - I, CPWD, Mumbai.
- 3 AAO.
- 4 Notice Board, MUMBAI - I, CPWD, Mumbai.
- 5 etender.cpwd.gov.in
- 6 By E-mail to cpwdwr@gmail.com

EXECUTIVE ENGINEER (E)

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

The Executive Engineer (E), MUMBAI-I, CPWD, Mumbai-20 (Ph No. 022- 22019534, e-mail ID: mumeelmced1.cpwd@gov.in/ eeemced1@yahooo.in on behalf of President of India invites online percentage rate in Single bid System CPWD enlisted contractor (Building & Road category) having valid electrical license for the following work :

SI. No.	NIT No.	Name of work & Location	Estimated cost put to Tender	Earnest Money	Period of Completion	Last date & time of online Submission of e-Tender	Time & date of submission of physical EMD in the manner as stated in condition no. 10 of CPWD-6	Time & date of opening of Tender
1	2	3	4	5	6	7	8	9
1	12/EE(E)/MUMBAI-I/2026-27	Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.	₹ 60,52,757/-	₹ 1,21,055/-	1 Month	28.08.2026 Upto 4:30 p.m.	28.08.2026 Upto 4:30 p.m.	28.08.2026 After 5:00 p.m.

Who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted.

Eligibility Criteria / Experience of work : -Approved and Eligible CPWD Enlisted Contractors in Composite (Buildings & Road) Category having valid Electrical license issued in favour of bidder for operating in the location of work to be executed, **or with association of specialized agency/firms** which fulfills the eligibility criterion of similar nature of work as mentioned in NIT provided, he/she satisfies the eligibility criterion as enumerated below:

Experience of having successfully completed works during last seven years ending previous day of last date of submission of tenders.

(i) Three similar works each costing not less than 40% of the estimated cost put to the tender.

OR

ii) Two similar works each costing not less than 60% of the estimated cost put to the tender.

OR

(iii) One similar works each costing not less than 80% of the estimated cost put to the tender.

Similar work shall mean works of "SITC LT Panel"

1. Successfully completion of above works during last seven years ending up to previous month of last date of submission of tender as given below with completion certificate issued by an officer not below the rank of Executive Engineer or equivalent of a Govt. Department / PSU / Autonomous body, duly attested.

2. The Value of executed work shall be brought to current level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to previous day of last date of submission of bids.

NOTE: This work is of an urgent nature; therefore, no extension of time shall be allowed.

All modifications/addendums/corrigendum issued regarding this bidding process, shall be uploaded on website only and shall not be published in any Newspaper.

General

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.
2. Information and instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website etender.cpwd.gov.in or www.cpwd.gov.in or & www.eprocure.com free of cost.
4. But the bid can only be submitted after ~~depositing processing fee in favour of ITI Limited~~ and uploading the mandatory scanned documents such as demand draft or pay order or Banker's Cheque or deposit at call receipt or fixed deposit receipts and Bank Guarantee of any Scheduled Bank towards EMD in favour of **Executive Engineer (E), MCED I, CPWD, Mumbai-20.** and other documents as specified. ~~The contractor already registered on the e tendering portal will have option to continue by paying tender processing fee upto one year from the date of registration, or to switch over to (new) registration without tender processing fee any time. All new registrations from 01.04.2015 will be without tender processing fee.~~
5. 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.
6. The intending bidder must have valid Class-III digital signature to submit the bid.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
8. Contractor can upload documents in the form of **JPG format and PDF format.**
9. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in **yellow colour** and the moment rate is entered, it turns **sky blue**. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as **"0"**.
10. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as **"0" (ZERO)**.
11. 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 being suitable by it, if too many bids are received satisfying the laid down criteria.
12. SC/ST contractors enlisted under class V category are exempted from processing fee payable to ITI Limited.

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

- i. Account Payee Demand Draft / Pay order / Bankers Cheque / FDR / Bank Guarantee as per Annexure-III of any Bank against EMD.**
- ii. Original EMD to be submitted to any of the Executive Engineer of CPWD as specified at Sr no 7 of PWD-6 within given date and time and receipt of EMD to be uploaded in the section of eligibility document on the web site failing which bid will not be opened As per Annexure – II.**
- iii. Copy of Valid order of enlistment of contractor with CPWD.**
- iv. The valid Electrical license issued in favour of bidder for operating in the location of work to be executed or undertaking as per NIT
OR
If the bidder does not possess valid electrical license, then he / she shall have to upload an undertaking that "I/We will either obtain valid electrical license at the time of execution of electrical work or associate contractors having valid electrical license of eligible class can bid for the work.**
- v. Certificate of Registration for GST. If the bidding has not having GST registration then in such case the bidder has to upload undertaking along with other bid document as per Annexure - I.**
- vi. Latest GST Return filed**
- vii. Certificate of RFI, ERP Training in the Name of Proprietor or Authorized Representative issued by the competent authority of CPWD**
- viii. Copy of Letter head of agency on which address, mail ID and telephone mentioned clearly**
- ix. Scan copy of PAN Card.**
- x. Undertaking for PAN and Aadhar Linkage.**
- xi. Any other relevant documents as per NIT.**

**EXECUTIVE ENGINEER (E),
MUMBAI- I, CPWD, MUMBAI-20**

CPWD-6 FOR e-TENDERING

Online Percentage rate tenders are invited on behalf of President of India in Single bid System from Approved and Eligible Non-CPWD Contractor having experience in similar work which fulfills the eligibility criterion of similar nature of work for executing the following work:-

Name of Work :- Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.

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

The work is estimated to cost ₹. **60,52,757/-**

This estimate, however, is given merely as a rough guide.

1. Agreement shall be drawn with the successful tenderer on prescribed Form No. CPWD – 7 (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.
2. The time allowed for carrying out the work will be **1 (Month)** 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 tender documents.
3. The site for the work is available.
4. The tender 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 from the web Site www.etender.cpwd.gov.in or www.cpwd.gov.in or www.eprocure.gov.in free of cost.
5. 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 tender as notified.
6. 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 tender as notified.

7. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (For balance amount as prescribed) from any of the Commercial Banks **(drawn in favour of Executive Engineer (E), MCED I, CPWD, Mumbai – 20)** shall be scanned and uploaded to the e-Tendering website within the period of bid submission. **The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving executive Engineer (Including NIT issuing EE/ AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT.**
8. A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 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 commercial bank having validity for six months or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders. Copy of Enlistment Order and certificate of work experience 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 original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.
9. 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. **However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority.**

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

10. The bid submitted shall become invalid if:
 - (i) The bidders are found ineligible.
 - (ii) **The bidder does not deposit original EMD within given date & time with division office of any Executive Engineer, CPWD (The EMD document shall only be issued from the place in which the office of receiving division office is situated)**
 - (iii) The bidders does not upload all the documents stipulated in the bid document **including the copy of receipt for deposition of original EMD.**
 - (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.
 - (v) **If a Tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above / below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tender.**
 - (vi) The bidder does not upload all the documents related to GST as stipulated in the bid document.

11. The contractor whose bid is accepted will be required to furnish performance guarantee of (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 vide letter no. DG/CON/Maintenance 2023/18 issued from S.E (C & M) dt:- 27.02.2026. 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 commercial bank/Banker's cheque of any commercial bank/Demand Draft of any commercial bank/Pay order of any Commercial Bank of any commercial bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Commercial 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 the 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 licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within the period specified in schedule F.
12. Intending Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders 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 tender. A tenderer 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 tenderer 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 tender by a tenderer 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.
13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.

14. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
15. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.
16. The contractor shall not be permitted to tender 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 as a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. 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 previous 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 tender or engagement in the contractor's service.
18. The tender for the works shall remain open for acceptance for a period of **30 days (Thirty Days)** from the date of opening of tenders.
 - (i) If any bidder withdraws his bid or makes any modification in the terms & conditions of the tender which is 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 whether letter of acceptance for the work is issued or not.
 - (ii) If any bidder withdraws his bid 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 or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of whether letter of acceptance for the work is issued or not.
 - ii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
19. This notice inviting Tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender 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 Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender 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 or other Standard C.P.W.D. Form as applicable.

**EXECUTIVE ENGINEER (E),
MUMBAI - I, CPWD, MUMBAI -20.**

CPWD-7

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

Percentage Rate Tender & Contract for Works.

**Tender for the work : Remodelling and shifting of power distribution
of system at Aayakar bhawan Churchgate
 Mumbai-400020. S/H :- Provision for Main LT
 panel at ground floor Aayakar Bhawan.**

- (i) To be submitted by/uploaded by **4:30** p.m. on 28.08.2026 At www.cpwd.gov.in or
- (ii) To be opened in presence of tenderers who may be present at **5:00 p.m.** on 28.08.2026 in the office of Executive Engineer (E), Mumbai I, CPWD, Room No 216 2nd Floor Old CGO MK Road Churchgate Mumbai-400020

**EXECUTIVE ENGINEER (E),
MUMBAI-I, CPWD, MUMBAI -20.**

***To be filled by the Executive Engineer**

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 ~~Fifteen / thirty/forty five/ sixty/ Seventy Five (15/ 30/45/60/75)~~ days from the due date of its opening / Ninety(90) days from the date of opening of financial bid in case tenders are invited on 2 envelop system/ One hundred twenty(120) days from the date of opening of technical bid in case bids are invited on 3bid system for specialized work (strike out as the case may be) and not to make any modification in its terms and conditions.

I / We have deposited EMD for the prescribed amount in the office of concerned Executive Engineer as per the bid document.

A copy of earnest money deposit **receipt of prescribed amount deposited in the form of Account payee, Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed)** issued by a **Commercial Bank**, is scanned and uploaded (Strike out as the case may be). If I / We, fail to furnish in receipt treasury challan/deposit at call receipt of a commercial bank/fixed deposit receipt of commercial bank/demand draft of a commercial bank/bank guarantee issued by a commercial bank is scanned and uploaded. 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 the work as specified, I/we agree that President of India or his 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 therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

Further, I/We agree that in case of forfeiture of earnest money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We 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 an 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

SCHEDULE 'A'**Schedule of quantities (as per PWD-3)****As per schedule of work attached.****SCHEDULE 'D'****Extra schedule for specific requirements/
document for the work, if any: -****Terms & Conditions Enclosed.****SCHEDULE 'E'****Reference to General Conditions of contract****: General Conditions of Contract 2023(Maintenance)as modified and amended upto the previous date of the last date of submission****Name of Work****: Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020.
S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.****Estimated cost of work****: ₹ 60,52,757/-****(i) Earnest Money****: ₹ 1,21,055/- (To be returned after receiving performance guarantee)****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.****vide letter no. DG/CON/Maintenance 2023/18 issued from S.E (C & M) dt: - 27.02.2026.****(ii) Security Deposit****: 2.5% of tendered value.****SCHEDULE 'F'****: General Rules & Directions****Officer inviting tender****: Executive Engineer (E), MUMBAI - I, CPWD,Mumbai - 20.****Definitions****2(v) Engineer -in- Charge****: Executive Engineer (E), MUMBAI - I, CPWD,Mumbai - 20 or his representative.****2(viii) Accepting Authority****: Executive Engineer (E), MUMBAI - I, CPWD, Mumbai - 20 or his representative.****2(x) Percentage on cost of materials
And Labour to cover all overheads and profits****: 15%****2(xi) Standard Schedule of Rates****: CPWD DSR 2025/ Market Rate****(xii) Department****: Central Public Works Department.****9(ii) Standard CPWD Contract Form GCC 2020, CPWD Form 7 modified & Corrected up to date****:GCC 2023 Maintenance Works Manual, SOP 2023 amended upto Previous date of the last date of submission of tender.**

CPWD – 7	CPWD
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Clause 1

(i) Time allowed for submission of Performance Guarantee, **Programme chart (Time and Progress) and applicable : 03 days** labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance

(ii) Maximum allowable extension with late fee @ 0.1% per day of performance guarantee amount beyond the period provided in (i) above : **NA**

Clause 2

Authority for fixing compensation under : **Chief Engineer, MUMBAI-I, CPWD, Mumbai-20.**

Clause 2A

Whether Clause 2A shall be applicable : **Applicable clause 2/ clause 2A (Modified OM No. DG/CON/307 dt.19.11.2019)**

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start : **03 Days**

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

Sr.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.1 Month

Authority to decide

- (i) Extension of time : **Executive Engineer (E), MUMBAI - I, CPWD, Mumbai - 20**
- (ii) Rescheduling of mile stones : **Chief Engineer, MUMBAI-I, CPWD, Mumbai-20.**
- (iii) Shifting of date of start in case of delay in handing over of site : **Chief Engineer, MUMBAI-I, CPWD, Mumbai-20.**

PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site

Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
Part A	Portion without any hindrance	----- Site Available -----	
Part B	Portion with encumbrances		
Part C	Portion dependent on work of other agencies		

Applicable clause 5/ clause 5A (Modified OM No. DG/CON/307 dt. 19.11.2019)

: **Applicable Clause 5**

Clause 5.4

: **NA**

Clause 6

: **Applicable as upto date Amendment**

Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment

Not less than Rs. 30,00,000/- or mutually agreed by Engineer-in-charge & contractors

Clause 7 A

Whether clause 7A shall be applicable

: **Yes**

Clause 10A

List of testing equipment to be provided by the Contractor site lab.

: **As per site requirement**

Clause 10CC Not Applicable

Schedule of component of other Materials, Labour etc. for price escalation. Component of civil (except materials covered under clause 10CA) /Electrical construction Xm %
value of work. –

Component of Labour –

expressed as percent of total value of work. Y %

Note : Xm.....% should be equal to (100) – (materials covered under clause 10CA i.e. Cement, Steel, POL and other material specified in clause 10CA + Component of Labour)

Clause 11**Specifications to be followed for execution of work :**

- 1) CPWD General Specifications of Electrical Works Part-I (Internal) 2023, Part-II (External) -2023 as amended upto date, relevant IE rules as amended & as per directions of Engineer-in-Charge.
- 2) NBC 2016 as amended upto date
- 3) Maharashtra Fire Prevention and Life Safety Measures Act, 2025 amended upto date

Clause 12

Deviation Limit beyond which clauses 12.2 shall apply for building work		Authority to decide deviation
1. Upto 1.25 times of contract amount	:	Executive Engineer (E), Mumbai Central Electrical Division-1, CPWD, MUMBAI or successor thereof
2. 1.25 to 1.50 times of contract amount	:	Chief Engineer MUMBAI-I or successor thereof

Clause 16**Competent Authority for deciding reduced rates**

Chief Engineer, MUMBAI-I,
CPWD, Mumbai-20.

Clause 18

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

: As per the scope of work

Clause 19 (C), 19 (D), 19 (G), 19 (K)

Authority to decide penalty for each default

: Executive Engineer (E), MUMBAI-I, CPWD, Mumbai-20

Clause 25

Conciliator – :

-Special Director General (Mumbai) or his successor

Arbitrator Appointing Authority

Chief Engineer, MUMBAI-I, CPWD, Mumbai-20.

Seat and Place of Arbitration:-

Clause 32

“Requirement of Technical Representative (s) and Recovery Rates”

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Minimum Experience required respectively	Designation (Principal Technical / Technical Representative)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i)	
						Figures (in Rs. Per Month/per person)	Words (in Rupees per Month/Per person)
1.	Graduate Engineer	Electrical / Electronics	2 year	Project Manager	ONE	Rs. 15000/-	Rupees Fifteen Thousand
	or Diploma Engineer		5 year	CUM Planning/ Quality/ Site/ billing Engineer			

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

**EXECUTIVE ENGINEER (E),
MUMBAI – I, CPWD, MUMBAI –20**

Annexure – I

GST REGISTRATION UNDERTAKING

"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, whoever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me / us on a/c of the work executed and / or for any action taken by CPWD or GST department in this regard."

Signature of Contractor

Note : The undertaking should on the letterhead of the bidder.

ANNEXURE II

Receipt of deposition of original EMD

(Receipt No..... / Date.....)

Name of Work : Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.

1. NIT No.: 12/EE(E)/MUMBAI-I/2026-27
2. Estimated Cost : Rs. 60,52,757/-
3. Amount of Earnest Money Deposit :- Rs. 1,21,055/-
4. Last Date of submission of bid :- 28.08.2026 upto 4:30 PM.

(* 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 (EE/AE (P))/AE/AAO
along with office stamp)**

to be filled by EMD receiving EE)

ANNEXURE – III

On non-judicial stamp paper on minimum Rs.100/-

(Guarantee offered by Bank to CPWD in connection with the execution of contracts)

Form of Bank Guarantee for Earnest Money Deposit / Performance Guarantee/ Security Deposit / Mobilization Advance

WHEREAS, the Executive Engineer (Name of division)....., CPWD on behalf of the President of India (hereinafter called "The Government") has invited bids under (NIT Number).....dated for..... (name of work)..... The Government has further agreed to accept irrevocable Bank Guarantee for Rs. (Rupees.....only) valid upto(date)* as **Earnest Money Deposit** from (name and address of contractor).....(hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

OR**

Whereas the Executive Engineer (Name of Division)....., CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with (Name and address of the contractor)..... (hereinafter called "the contractor") for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date) as **Performance Guarantee / Security Deposit / Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

2. We, (indicate the name of the bank) (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 within 10 days of the demand.
3. We, (indicate the name of the Bank)....., do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only)
4. We, (indicate the name of the Bank) , further undertake to pay the Government any money so demanded not with standing any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor shall here no claim against us for making such payment.

5. We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor 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 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 or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor 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. We, (indicate the name of the Bank)....., further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (indicate the name of the Bank), undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date :

Witnesses :

1. Signature

Name and address

Authorized Signatory

Name

Designation

Staff Code no.

Bank seal

2. Signature

Name and address

- * Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two / three bid system from the date of submission of tender.
- ** In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee / security deposit / mobilization advance, as the case may be.

PARTICULAR SPECIFICATIONS AND SPECIAL CONDITIONS

1. Location

Name of Work :- Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. S/H :- Provision for Main LT panel at ground floor Aayakar Bhawan.

2. Related Documents

These additional specifications are to be read in conjunction with the specification given in the tender. In case any item/items or part thereof are not covered under these specifications, the same shall be carried out as per relevant part of the CPWD General Specification for Electrical Works amended up to date, Relevant Indian Electricity Rules and Indian Electricity Act amended up to date; Relevant BIS specifications amended up to date; NBC 2016 amended up to date and ECBC-2017 amended up to date and as per direction of Engineer-in-Charge.

These additional specifications are to be read in conjunction with above and in case of variations; specifications given in this additional condition shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read along with schedule of quantities for the work.

3. Terminology

The definition of terms used in these specifications shall be in accordance with relevant IS. All components shall conform to relevant Indian Standard Specifications, International Standards and shall bear the stamp of the testing laboratory wherever existing and amended to date.

4. Order of Preference:

In case of discrepancy, if any, between the description of items as given in the Schedule of quantities, technical specifications for individual items of work (including additional and commercial conditions) and IS Codes etc., the following order of preference shall be followed:

- (i) Schedule of quantities
- (ii) Additional and Commercial Conditions
- (iii) Technical specifications specified in the tender
- (iv) General Conditions of Contract for CPWD Works
- (v) Drawings
- (vi) CPWD General Specifications
- (vii) Relevant IS or any other international code in case IS code is not available.
- (viii) Manufacturer's Catalogue, Specifications and Recommendations.

5. Site Information

The work shall be carried out in a pre-occupied building, and working time may be restricted by the client, claims for idle labour (s) will not be entitled. The Bidder should in his own interest visit the site and get themselves familiarize with the site condition and have to upload an undertaking for site inspection as per Annexure-B of tender document.

6. Completeness of the Tender, Submission of Programmed, Approval of Drawings and commencement of work

I. Completeness of the tender: -

All sundry equipment's, fittings, assemblies, accessories, hardware items, foundation blots, supports, termination lugs for electrical connections, cable glands, junction boxes and all other items which are useful and necessary for proper assembly and efficient working of the various equipments and components of the work shall be deemed to have been included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.

7. Safety Codes and Labour Regulations

i. In respect of all labour employed directly or indirectly, for the execution of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provision, B.I.S. recommendations, factory act, and workman's compensation act. CPWD code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for penalty. In addition, the Engineer-in-charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost incurred thereon from the contractor.

ii. The contractor shall provide necessary barriers, signals and other safety measures wherever necessary so as to avoid accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising therefrom during the execution of work. The contractor to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.

8. General security restrictions are given as under:

- a) No inflammable materials including P.O.L. shall generally be stored at site of work.
- b) The movement of trucks and vehicles will be regulated in accordance with rules and regulations as approved by competent authorities.
- c) The contractor shall inform in advance, the truck registration number, Ownership of the trucks, names and address of the drivers and labour for necessary action by the security agency.
- d) Due to the site conditions, no space for construction of go down and stay of site staff may be allowed.
- e) Names and addresses of labourers/staff along with identity proof and residence address proof etc. working at site shall be furnished in advance for security verification for issue of passes.
- f) The labourers/staff should not be changed too frequently once the verification of the character and antecedents is done.
- g) As and when there will be security requirements, certain additional restrictions can be proposed as per the requirement of the situation.
- h) **IDENTITY CARDS:-**The identity cards will be issued to the workmen employed by the contractor after proper police verification for which Contractor shall submit a list of workers to be deployed on site of work. The cost of photos would be borne by the contractor. They will be required to carry the identity- cards with them during their working inside the building.
- i) Due to security constraints, all the working personal may not be allowed to carry the mobile phone or any other electronic gadgets. The instruction of security personal in this regard shall be followed religiously.
- j) Therefore, in view of the situation explained under above paragraphs the tenderer must visit the site and must get himself acquainted with the proposed site of work, study specifications and conditions carefully before tendering rates. Nothing extra shall be paid on account of compliance of any of these clauses. The hindrance due to security constraints shall be not be accounted towards adjustment of completion time mentioned in the tender document.

9) Works to be Arranged by the department

Unless otherwise specified in the tender documents: Space for accommodating all the equipment and components involved in the works, shall be arranged by the Department. However, arrangement to make it lockable and its watch & ward shall be made by contractor himself.

10) Works to be done by the contractor

Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost- whether specifically indicated in the schedule of work or not: -

- i) Suspenders, brackets and supports for suspending/ supporting cable tray etc.

- ii) Sealing of all floor slab/wall openings provided by the Department or made by the contractor for laying of pipes & cables from fire safety points of view.
- iii) Painting of all exposed metal surfaces of equipment's and components appropriate colour as per relevant part of bid document.
- iv) Making opening in the wall/floors/slabs or modifications in the existing openings wherever provided for cable/cable tray etc. Opening in the slab/retaining walls/brick wall etc. shall be made by means of core cutting machines only.
- v) All electrical works including cable/wires, earthing etc. beyond power supply made available by the department.
- vi) Making good all damages caused to the structure during installation and restoring the same to their original finish.
- vii) Approval from Local Body as may be required as per local bye-laws. (The contractor's responsibility shall be limited to the work executed by him.)
- viii) The water and power supply for installation, testing and commissioning of the complete installation shall be made available by the contractor themselves for Original works.

11) Rates

The rate quoted by bidder, shall be firm and inclusive of all taxes including GST, duties and levies and all charges for packing, forwarding insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary constructional storage, risks, overhead charges, general liabilities / obligation etc. No separate reimbursement shall be made on this account. However, statutory deductions shall be made from the bills, as per rule. The contractor has to carry out maintenance of entire installation for a period of 12 Months from the date of handing over. The rates quoted by the tenderer shall also be inclusive all this, nothing extra shall be paid on this account.

Quoted Rates should be inclusive of all taxes & levies except EPF/ ESIC which shall be reimbursed as per actually paid to Concerned Govt deptt. Nothing extra shall be payable. It will be the responsibilities of the contractor to provide EPF / ESIC and other facility to their employees as per current labour laws.

Taxes and Duties

The tender is for entering into percentage rate works contract. The rates quoted shall be inclusive of all materials, prevailing taxes, duties, levies, cess, freight and delivery, labour for installation, testing, commissioning etc. at site including temporary constructional storage, risks, overhead charges, general liabilities / obligation etc. No separate reimbursement shall be made on this account. Statutory deduction on account of GST, Income Tax, Labour Welfare Cess etc, as applicable on original work, (Except credit items) shall be made at source from each running /final bill payment. A certificate of TDS shall be issued by the department to the contractor.

12) Acceptable Makes

The acceptable makes of the various equipments/components/accessories have been indicated in "Acceptable Makes" annexed with this document. The bidders shall work out the cost of the offers on this basis. Prospective bidders are to quote as per the acceptable makes specified in the tender documents. However, all departure from the specifications and also from the Acceptable Makes of the equipments / components have to be brought down in the forwarding letter to this tender. However, the departures taken by the bidders shall be evaluated at the time of Technical Evaluation, based on the documentary evidence and also their past performance in case of the alternative makes, if any. Except for the departures brought down in the forwarding letter the tender, it is presumed that intending bidder confirms compliance to the tender specifications in all respect. Successful bidder is to comply with the Public Procurement (Preference of Make in India), Order 2017 Revision-dated 23-07-2020 of Govt. of India, while executing the contract. If any provision made elsewhere in this NIT, which in contravention with the Make in India policy, the latter shall have preference over the former. Engineer-in-charge will have the final authority to take appropriate decision in the matter.

13) Execution: -

a) Machinery for Erection

All tools and tackles required for unloading/handling of equipment's and materials at site, their assembly, erection, testing and commissioning shall be the responsibility of the contractor.

b) Dispatch of Materials to Site and their Safe Custody

The contractor shall dispatch material to site in consultation with the Engineer-in-Charge. Suitable accommodation shall be made available free of charge temporarily. The arrangement to make it lockable/secure by means of partitions, locks etc. shall be responsibility of the contractor. Watch and ward however, shall be the responsibility of contractor. Program of dispatch of material shall be framed keeping in view the building progress. Safe custody of all machinery and equipment supplied by the contractor shall be the responsibility of the contractor till final taking over by the department.

a) Extent of Work

The work shall comprise of entire labour including supervision and all material necessary to meet a complete installation and such tests and adjustment and commissioning, as may be required by the department. The term complete installation shall not only mean major items covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in detail in the tender documents in connection with this contract as this is a turnkey job.

b) Compliance with Regulations and Indian Standards:

All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following:

- i) Factories Act.
 - ii) Indian Electricity Rules.
 - iii) B.I.S. & other standards as applicable.
 - iv) Workmen's compensation Act.
 - v) Statutory norms prescribed by local bodies like CEA, Power Supply Co., Local Body etc.
- c)** Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

d) Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs. 500/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

e) Indemnity:

The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipment's and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

f) Co-ordination with other Agencies

The contractor shall co-ordinate with the client department for supply of Air Conditioning units to be installed at site as the same has already been purchase by the client department and all other agencies involved at the site of work so that the work of other agencies is not hampered due to delay in his work. The work, which directly affect the progress of work of other agencies, shall be given priority.

g) Quality of Materials and Workmanship

- (i) The components of the installation shall be such design so as to satisfactorily function under all conditions of operation.
- (ii) The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.
- (iii) All equipment's and material to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after sales service.
- (iv) All equipment's and materials to be used in the work shall be brand new having its date of manufacturing not more than 1- year old from the date of delivery at site with manufacturer's certificates, warrantee cards, technical catalogues, instructions, manuals and wiring diagrams etc.

14. Terms of Payments:

Following payment terms shall be applicable.

- i) No advance payment shall be made.
- ii) The payment of running account bill shall be made as per availability of fund in the subject head after bill submitted duly verified and in full shape.
- ii) on supply 75%
- iii) on testing and commissioning 15%
- iv) on successful handover for beneficial use 10%

15. SPECIAL CONDITION FOR SAFETY AT THE WORK SITE

The contractor will identify one of the supervisors for taking care of implementation of Safety systems. The Contractor should follow the following General Guidelines governing the safety rules as laid down under:

- i. Smoking is strictly prohibited at workplace.
- ii. Nobody is allowed to work without wearing safety helmet. Chinstrap of safety helmet shall be always on. Drivers, helpers and operators are no exception.
- iii. No one is allowed to work at or more than three meters height without wearing safety belt and anchoring the lanyard of safety belt to firm support preferably at shoulder level.
- iv. No one is allowed to work without adequate foot protection.
- v. Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.
- vi. All safety appliances like Safety shoes, Safety gloves, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
- vii. All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach is to be ensured into every excavation.
- viii. Adequate illumination at workplace shall be ensured before starting the job at night.
- ix. All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded.
- x. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
- xi. Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the tress-passers from entering the area.
- xii. Other than electricians no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
- xiii. All electrical connections shall be made using 3 or 5 core cables, having an earth wire.
- xiv. Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.
- xv. A tools and tackles inspection register must be maintained and updated regularly.
- xvi. Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.

- xvii. All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
- xviii. No children shall be allowed to enter the workplace.
- xix. All the lifting tools and tackles shall be stored properly when not in use.
- xx. Lamps shall be used on Return cables to ensure proper earthing for welding works.
- xxi. Return cables shall be used for earthing.
- xxii. All the pressure gauges used in gas cutting apparatus shall be in good working condition.
- xxiii. Proper eye washing facilities shall be made in areas where chemicals are handled.
- xxiv. Connectors and hose clamps are used for making welding hose connections.
- xxv. All underground cables for supplying construction power shall be routed using conduit pipes.
- xxvi. Spill trays shall be used to contain the oil spills while transferring / storing them.
- xxvii. Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.

QUALITY ASSURANCE PLANS : A) Internal & External Electrical work: -

1. For Internal and External electrical works, the bidder should have **valid electrical contractor license from competent authority in the name of the contractor.**
2. Electrical agencies shall submit the fortnightly labour report.
3. Sample of materials like pipe, conduits wires, of each size etc. may be got tested in the
4. laboratory approved by Engineer -in charge, as and when desired by Engineer-in-charge.
5. All the materials intended to be used in the work shall be got approved by Engineer-In-
6. Charge before use at site.
7. Fish wire shall be provided in each conduit where wiring is not carried out.
8. Extra item, substitute item, deviation etc. shall be carried out only with written permission of competent authority.
9. Necessary documents of handing / taking over of the installation will be duly verified by
10. the JE(E)/AE(E) for any defect and shall be rectified before finalization of Contract
11. The contractor will have to ensure that the skilled / Semi skilled labour, engaged in the
12. execution of the work must possess valid electrical license / qualifications, otherwise he
13. will not be permitted to execute the work.
14. The contractor shall be responsible for removal of all defects in the work during the defect liability/guarantee/warranty period. The department shall carry out routine maintenance only. However, if any failure is noticed during this period which is attributable to poor quality of material and bad workmanship, the contractor will be required to rectify the same at his own cost, failure of which the department will be at liberty to get the defects rectified at the risk & cost of the contractor. The contractor will also be required to carry out his own inspection/testing during the guarantee/warranty period and attend to any defect taking place during this period.
15. Material required for the work shall be brought at site at the appropriate time keeping in view the requirement of material depending on progress of the work.

16. The work shall be carried out as per direction of Engineer -in-charge and CPWD specifications for Electrical Works.
17. Taxes, levies etc. as applicable shall be deducted from the contractor's bill. No Road Permit/ From 31 etc. shall be issued by the Department. The rates quoted shall be inclusive of all taxes, duties, levies, T & P and petty items like including log book, complaint register duster, Mobil oil, test lamp etc. and no advance payment will be made.
18. The materials supplied shall be new (Manufactured not earlier than 6 Months before the date of quotation opening) and shall be ISI marked where applicable. Test certificate / reports and warranty certificates as required shall be provided by the agency to the entire satisfaction of Engineer-in-Charge before bill submission for payment.
19. The labour deployed site for execution of work shall take all safety precautions and the contractor shall be responsible for compliance of all labour regulations, liabilities and safety measures. If CPWD is not satisfied with the performance of labour, then alternate staff is to be provided immediately.
20. All required documents such as Aadhar Card, Pan No, Educational qualifications shall be provided for verification of the staff deployed at site for execution of work. Also the staff deployed at site of work will be issued valid ID card by the agency. In case of change of staff, an early intimation is to be given and to be approved by the Engineer-in-Charge or his representative.
21. The contractor shall be required to possess during the full currency of the contract a valid license for employing contract labour from the appropriate licensing authority under the contract labour (Regulation and abolition) act 1970. The contractor shall be solely responsible for compliance of various statutory obligation (including the financial liabilities) under contractor labour regulation & abolition Act. Minimum wages act etc. and other applicable laws and rules framed there under from time to time. Contract workers are to be paid not less than fair wages which means wages fixed by CLC, Govt. of India under the provisions of the Minimum Wages Act. Wages due to the worker shall be paid to him directly by the contractor through Bank or ECS or Online transfer to his bank account and receipt of wages shall be attested by the worker concerned.
22. The contractor will have to arrange his own T & P required for the work. The department will not arrange any T & P and nothing shall be paid on this account.
 - I. EARTH TESTER
 - II. MEGGER 500 V / 2500 V
 - III. LINE TESTER, TEST LAMP
 - IV. VERNIER/WIRE GUAGE
 - V. SPANNER KIT.
 - VI. CHASE CUTTING MACHINE
 - VII. CRIMPING TOOLS
 - VIII. MULTI METER & TONG TESTER
 - IX. ALUMINIUM LADDER -SINGLE / FOLDABLE / TROLLEY MOUNTED
 - X. CHAIN WRENCH/PIPE WRENCH.
 - XI. HYDROMETER.
 - XII. LUX METER (DIGITAL)
23. No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall also not be allowed to erect any temporary set up for staff in the campus.

24. The Site Engineers and all deputed staff shall carry mobile telephones(s) to enable the Engineer- in-charge or his representative to have easy and quick communication. Nothing extra shall be paid on account and his quoted rates for various items under this contract will be inclusive of this obligation. Contractor is bound to give all the telephone no. of their staff deployed at site to the Engineer in charge, immediately after award of work.
25. Safety codes and Labour Regulations: - In respect of all labour employed directly or indirectly on the work for the performance of the contractor's part of work, the contractor at his own expense, will arrange for safety provision as per the statutory provisions, B.I.S. recommendations, factory act, workman's compensation act, CPWD code and instruction issued from time to time. Failure to provide such safety requirement would make the tenderer liable for penalty as per Part-A for each default. In addition, the Engineer-in-charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor. Safety of the staff employed will be the responsibility of the contractor. CPWD will not be responsible for any mishap, injury / accident or death of the staff. No claim in this regard shall be entertained / accepted by the department.
26. Contractor shall be fully responsible for any damages caused to govt. property or allottee's property by his or his labour during the carrying out the work. All such damages shall be rectified by the contractor at his own cost, failing which the same will be got rectified by Engineer-in-charge and the expenditure incurred shall be recovered from the contractor bill. The watch and ward of installation shall be the responsibility of the contractor.
27. All the items to be replaced should be of same specifications or better with ISI marked or as approved by the Engineer-in-charge. Makes of the items used has been specified, however if make of any item not mentioned below same will be used ISI marked after getting approval by Engineer- in-charge. Dismantled items as received from the site shall be the property of the Govt. and required to be handed over to JE (Electrical) in store.
28. Contractors are requested to inspect the site before quoting their rates for the tender; later on, no further claims in this regard shall be entertained.
29. After the completion of the contract, the firm shall have to hand over complete installation to the department in good working condition. All defects and deficiencies shall have to be rectified by the firm to the entire satisfaction of Engineer-in-charge failing which the work shall be got done at the risk and cost of the firm. Any damage caused to the fittings/ switch gears/ installations/ machinery as a result of execution of this work shall have to be made good by the contractor at his own risk and cost.
30. The staff engaged has to be courteous and maintain good behavior at site. Any person, find discourteous or misbehavior shall have to be replaced within 48 hours, failing which, the Engineer- in-Charge has the power to cancel the contract, and the contractor shall have no claim of compensation. Decision of the Engineer-in-Charge shall be final and binding on the contractor. The contractor shall submit the name, address & character certificate of the worker/ staff employed by them at the site of work to the Engineer-in-Charge before start of the work.
31. Wages Payment by the contractor to the deployed staff shall be mandatorily paid through digital mode of Bank / ECS / Online transfer on monthly basis. Contractor has to submit aadhar authenticated biometric attendance at site of work for all the staff employed by him on 10th of every month for every preceding month.

32. The staff should wear clean uniforms and badges (Name plate) to be supplied by the contractor. If the staff service is not deployed by the contractor any day, a recovery of double of quoted rate per day per person shall be done from the bills of the contractor.
33. The contractor has to arrange Dress, petty items like Soap, Duster, Complaint Register / Log- book, Mobil Oil, Test lamp, PVC Tape, Screws / Lugs, jute, old cotton, grease, distilled water, petroleum jelly, T & P etc. (Other items as and when required shall be paid extra as per actual requirements including during free Annual Servicing by OEM / Authorized Agencies etc. Nothing extra is payable on account of the materials required to maintain the electrical installation. All the equipment's and installations shall be maintained in neat and clean condition.
34. All E & M installations shall be operated, maintained and tested as per the Elect Rules, Manufacturer recommendations for routine & preventive maintenance and CPWD specifications for Elect works amended up to date.
35. LED items shall have warranty of 5 years by the manufacturer from the date of installation Additional security shall be deducted @2.5% for Guaranteed items and be released on annually pro-rata basis after one- year free maintenance period.
36. During execution of work, the successful bidder shall deploy his personnel and take utmost care so that no damage is done to the govt property failing which the agency shall be fully responsible and make good the damage at his own cost. Nothing extra shall be paid extra in this account.
37. The contractor shall be responsible for removal of all defects in the work during the defect liability/guarantee/warranty period. The department shall carry out routine maintenance only. However, if any failure is noticed during this period which is attributable to poor quality of material and bad workmanship, the contractor will be required to rectify the same at his own cost, failure of which the department will be at liberty to get the defects rectified at the risk & cost of the contractor. The contractor will also be required to carry out his own inspection/testing during the guarantee/warranty period and attend to any defect taking place during this period.

ADDITIONAL CONDITIONS OF CONTRACT AND
SPECIFICATIONS FOR E & M WORKS

1. GENERAL AND COMMERCIAL CONDITIONS :

- 1.1. This section covers the various commercial conditions applicable and to be read in connection with the conditions of contract of the standard form (CPWD-7 / 8) of the department (CPWD) forming part of the tender papers. In the event of any discrepancy between these two, the requirements of the former will be followed.
- 1.2. These additional conditions and additional specifications are applicable to all E&M works in general. For specific tender some of the E&M services may not be a part of the particular tender. In such cases the conditions and specifications which are not related to the works or components thereof mentioned in the schedule of work shall not apply for that particular tender.
- 1.3. All the E & M works shall be carried out as per direction and to the entire satisfaction of the Engineer-in-charge.
- 1.4. The contractor has to be submitted all the drawings to the Engineer – in – charge of the works for approval from the competent authority i.e. ~~EI HT panel, MV panel, AMF panel, Pole & Pole Bracket for Street light, all other panels & Layout drawing of all works~~ before execution or procurement of materials.

Unless otherwise specified in the following conditions, the work shall, in general, be carried out as per following specifications:

- (a) CPWD General Specifications for Electrical Works – Part-I (Internal), 2023 amended up to date.
 - (b) CPWD General Specifications for Electrical Works – Part-II (External), 2023 amended up to date.
 - (c) Relevant BIS specifications amended up to date.
 - (d) Indian Electricity Act 2003 and Indian Electricity Rules 2005 amended up to date.
- 1.5. If the specifications for any item or its component are not available in the CPWD specifications cited above, relevant BIS specification as amended up to date shall be followed, whether or not the specific reference of a particular BIS specification has been made in this specification / tender document.
 - 1.6. Wherever any reference to any Indian Standard specification occurs in the document relating to this contract the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of opening of tender.
 - 1.7. All materials should conform to relevant BIS specifications wherever the same exists in absence of stipulation in this tender document.
 - 1.8. Where manufacturers furnish specific instructions / recommendations relating to the materials used in this job and/or their installation, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases and shall be deemed to be included in the schedule of work whether they have been specifically mentioned or not.

- 1.9. Manufacturer's catalogue / literature on installation, testing, maintenance and troubleshooting of major equipment shall be submitted to the department while handing over the installation.
- 1.10. MATERIALS TO BE USED IN THE WORK :
 - 1.10.1. All materials used in the work shall be new and of good quality, conforming to the relevant specifications as per good Engineering practice.
 - 1.10.2. All the materials proposed to be used in the work should be got approved from Engineer in Charge before use in work.
 - 1.10.3. The materials to be supplied / provided by the contractor in execution of the work should be ISI marked, wherever applicable and of make as specified in the agreement. Where the make of any particular material is not specified in the contract document, the material shall be supplied as per makes desired by the Engineer-in-charge.
 - 1.10.4. It will be the responsibility of the contractor / bidder to ensure use of genuine materials in the work. The department reserves the right to get (any / all materials / components) inspected by the manufacturer or their authorized representatives at any stage of the execution of work. If any of the materials, equipments supplied and used in work is found spurious at any stage, then the department reserves the right to ask the contractor to replace it by genuine one and make suitable recovery and / or withheld suitable amount till it is done, even if any payment against that material is already made.
 - 1.10.5. The department may ask for any valid document like manufacturer's test certificate, document for purchase of the material, document for import / shipment of imported materials etc. as deemed fit by the engineer-in-charge to ascertain genuinity of material supplied by / used in the work by the contractor. The contractor shall remain bound to submit all such documents to the department failing which payment may not be made or if already paid may be recovered / withheld from subsequent running account payment.
 - 1.10.6. Copies of all purchase documents for all equipments, accessories, fittings, fixtures etc. which carry guarantee / warrantee shall be handed over to the department in suitable form so that proper guarantee of materials are available to the department.
 - 1.10.7. All the equipments and their components and all the materials to be used in the work shall be suitable for the environmental conditions at the location of the work.
 - 1.10.8. The materials to be supplied in this work shall be scheduled in such a way that miles stones are achieved and no shortfall is there. At the same time materials should be brought at sight in phases in such a manner so that they are not brought much in advance at site and dumped in work site for long period before installation and guarantee / warrantee of the materials are available for full period i.e. from the date of beneficial use of the material / equipment as per tender conditions. If the materials / equipments are supplied at site much before actual use in work, the department shall not remain bound to accept and make payment for such items of work involving the said materials / equipments. The decision of the engineer in charge will be final and binding on all.
 - 1.10.9. Dismantle materials, if any, should be returned to the department unless otherwise anything in contrary has been specifically stated in the tender

document / BOQ.

1.11. RATES :

- 1.11.1. Unless otherwise provided in the schedule of quantities of the work the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.
- 1.11.2. The rates for all items of work shall, unless clearly specified otherwise, include cost of all labours, materials and other inputs involved in the execution of the item irrespective of whether they have been specifically mentioned in the tender document or not.
- 1.11.3. This being an indivisible works contract, GST, Excise Duty etc. are not payable separately. The rates tendered shall be firm and inclusive of all taxes, duties, cess and levies as applicable, and all charges for packing, forwarding, insurance, freight and delivery, installation, testing and commissioning at site, watch and ward etc. including temporary constructional storage, risks, overhead charges, general liabilities / obligations and clearance from local bodies and State Fire Services, as applicable. Nothing extra shall be paid. However, fees payable to the local bodies / authorities for such clearance etc. shall be borne by the department.
- 1.11.4. Octroi exemption certificate may be issued by the department if required by the contractor. However, the department is not liable to reimburse the octroi duty in case exemption certificates are not honoured by the concerned authorities.
- 1.11.5. The rates quoted by the tenderer, shall be firm and inclusive of all taxes (including works contract tax but excluding service tax), octroi, duties and levies and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc. at site i/c temporary constructional storage, risks, overhead charges, general liabilities/obligations and clearance from local authorities. The fee for the inspection of installation by government authorities shall be reimbursed by the department on production of receipts. The contractor has to, however, initially make the payment. Likewise service tax applicable shall be initially paid by the contractor and shall be reimbursed to him by the department after verification of payment receipts etc.

1.12. COMPLETENESS OF TENDER :

- 1.12.1. All sundry equipment, fittings, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections, and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the work shall be deemed to have been included in the tender irrespective of the fact whether such items are specifically mentioned in the tender documents or not.

1.13. STORAGE AND CUSTODY OF MATERIALS:

- 1.13.1. The agency has to make his own arrangement for watch and ward of the stores. Their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department.

- 1.14. ACCIDENT: The department (CPWD) shall not have any responsibility or liability in case of any accident injury to the personnel to the contractor at work site or to the general public at the work site due to mishandling of equipments by

the personnel of the contractor or any other similar reason. The responsibilities and liabilities for such accidents and incidents shall be borne in full by the contractor.

- 1.15. AFTER SALES SERVICE : The contractor shall ensure adequate and prompt after sales service in the form of maintenance personnel and spares as and when required with a view to minimize the break down period. Particular attention shall be given to ensure that all spares are easily available during the normal life of the installation.

- 1.16. All the equipments except LED fittings shall be guaranteed for a period of 12 months from the date of taking over the installation by the department or date of completion of agreement which is later against unsatisfactory performance and / or break down due to defective design, workmanship of material. The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor.

In order to keep balance default liability period of one year from the date of completion of work or date of taking over of installation by the Engineer – in – Charge, which is later, the contractor may have to purchase additional warranty with the same terms and conditions as the original warranty from the OEM or his authorised service partner. Nothing extra shall be payable on this account. LED fittings shall be guaranteed for at least 5 years, any defective materials and equipments shall be replaced free for cost at the direction for the engineer-in-charge. The decision of the Engineer-in-Charge in this regard shall be final.

- 1.17. Before completion of defect liability period of one years, the main contractor has to Submit security deposit (in addition to 2.5%) of 5% of the LED fittings for the remaining 4 years warranty period for LED fittings in acceptable form i.e., FDR/Bank guarantee, to concerned Executive Engineer & Senior Manager (E). The security Deposit deducted from the bills of contractor shall be Refunded to the main contractor only after submission of above security deposit for LED fittings by main contractor, failing which this LED security deposit shall be deducted for total work and balance amount only will be refunded after completion of defect liability period. The LED security deposit will be released after completion of warranty period 5 years to the main contractor.

- 1.18. REMOVAL OF SURPLUS MATERIALS AND TOOLS: After completion of work the agency shall remove his men, materials and debris etc. from site.

- 1.19. QUALITY OF WORK AND WORKMANSHIP:

- 1.19.1. The contractor shall be entirely responsible and answerable for all the works done by him regarding quality, adherence to the laid down specifications, terms

and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.

- 1.19.2. The materials having ISI mark shall have precedence over the one conforming to IS Specifications.

- 1.19.3. The contractor is advised to visit the site before quoting for his tender to apprise himself about the site environments and other conditions. Drawings and inventories can be seen in the office of the Engineer – in – charge.

- 1.20. SITE ORDER BOOK: The contractor or his authorized representative shall sign the site order book and comply with the remarks entered their in by the representative of the department.
- 1.21. WATCH AND WARD :
- 1.21.1. The contractor will make his own storage of his own materials. The watch and ward of the materials and of the installations would be responsibility of contractor till the work is completed / handed over to the department. Nothing extra shall be paid to the contractor on this account.
- 1.21.2. Making payment to the contractor in any form against supply of materials / equipments / components or execution thereof shall not absolve the contractor of his responsibility of watch and ward of the equipments / materials etc. and their satisfactory functioning until the same is taken over by the department after successful installation, testing, commissioning and running in period.
- 1.21.3. No separate storage space will be provided to the contractor for storage of his materials and equipments to be brought at site and used in execution. The available open site space may however be used by the contractor for storage purposes in which case he may build up temporary store at available site space at his own cost.
- 1.22. VARIATION IN QUANTITY :
- 1.22.1. Quantities shown against each item of work or supply are tentative which may vary on either side (plus or minus). This variation shall, in general, be governed by clause no. 13 of the clauses of contract of CPWD form 7 / 8. The contractor should ensure from the Engineer-in-charge and from the site condition the actual quantity required / to be used / to be supplied before bringing the materials at site. In case the actual quantity of material required at the site is less than the stipulated quantity, the contractor cannot claim to supply entire quantity stipulated in the schedule of quantities of work (Schedule – A) as well as cannot demand for payment thereof. The contractor shall therefore, be very careful about the quantity of materials to be supplied / brought at site. The decision of the Engineer-in-charge in this regard shall be final and binding on the part of the contractor. Even if initial payment for supply of materials is made in any form for bringing material at site and if it is found at later stage that the actual requirement is less as per site requirement or as per decision of the Engineer-in-charge, the contractor shall have to take back the additional quantity brought / supplied at site and necessary adjustment shall be made from his next bill on this account. No claim in this regard shall be entertained.
- 1.23. NATURAL CALAMITY : No payment will be made to the contractor for any damage caused by rain, snow fall, floods, dampness, fire, sun or any other natural cause whatsoever during the execution of work. The damage to the work due to above reason, if any, shall have to be made good by the contractor at his own cost and no claim on this account shall be entertained.
- 1.24. INSPECTION AND TESTING :
- 1.24.1. The Engineer-in-charge or his authorised representative may inspect any material at manufacturers' works and may witness routine tests as per relevant Indian Standard Specifications or other relevant specifications at manufacturers' works.
- 1.24.2. The contractor shall give in writing advance notice to the Engineer-in-charge and arrange for such inspection / presence for testing at manufacturers work. Inspection shall be done in online/offline mode as per decision of engineer

incharge .

- 1.24.3. The Engineer-in-charge or his authorised representatives shall have, at all the reasonable times, access to the contractors premises or works or other works where manufacturing / fabrication shall be done and shall have the power, at all reasonable times, to inspect and examine the materials and workmanship during its manufacture or fabrication.
- 1.24.4. Inspection of imported materials at foreign works shall however not be carried out by the department. These materials shall be inspected and tested at site. Manufacturers' original test certificates and document of import / shipment should be provided to the department along with the materials without which no payment should be made to the contractor.
- 1.24.5. The contractor shall arrange for all the materials and labour required in connection with inspection of equipment or for any testing to be carried out at his works / manufacturers' works or at site of installation. Notice of such inspection / presence for testing shall be given by the contractor to the Engineer-in-charge at least fifteen days in advance.
- 1.24.6. Notwithstanding approval for such tests / inspection of equipments / components by the Engineer-in-charge or his authorised representative, the contractor shall be required to perform site tests as desired by the Engineer-in-charge and prove the correctness of ratings and performance of equipments / components and materials supplied and / or installed by him as per contract specifications and conditions at his own cost.
- 1.24.7. The Engineer-in-charge reserves the right to reject any equipment / machinery / material should it, on tests after installation, be found not to comply with contract specifications or its performance is not satisfactory.
- 1.24.8. Final inspection and testing will be done by the Engineer-in-charge or his representative as per details to be indicated by the Engineer-in-charge.
- 1.24.9. It shall be the responsibility of the contractor to get the installation inspected and passed by the local authorities concerned, as may be required by the local bye laws. The contractor will extend all help including test facilities to the representatives of the local bodies. In case the contractor fails to make desired facilities available during inspection, the department reserves the right to provide the same at the risk and cost of the contractor. The observation of the local authorities will be promptly attended by the contractor. The installation will be accepted by the department only after receiving clearance from the local bodies / fire authorities. The inspection charges leviable by the local / statutory authorities for the inspection shall however, be borne by the department.
- 1.25. COMPLETION DRAWING AND MANUAL :In addition to the mode and form of submission of completion drawings and manuals as stipulated in the relevant CPWD Specifications for various sub-heads of E&M works, the contractor shall also submit soft copy of the completion drawings in CD / DVD.
- 1.26. POWER SUPPLY AND WATER SUPPLY: No Power & Water Supply shall be provided by the department for the purpose of execution of the E&M work, except for testing and commissioning of installations. The contractor shall make his own arrangement in this regard. The power supply for testing and commissioning will be given at one point inside the premises and the contractor shall have to make arrangement for required cabling work and switch gears for extension of the power to the required location for testing. This will be applicable to all sub-heads of E&M works.

1.27. WORKS TO BE DONE BY THE CONTRACTOR :

- 1.27.1. Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost – whether specifically indicated in the schedule of quantity / work or not:
- 1.27.2. Preparation of all layout, working drawings for execution of the work (E&M) components and submission to the Engineer-in-charge for approval within 15 days from the scheduled date of commencement of the work.
- 1.27.3. Foundations for equipments / structures / fuel tank / pumps including vibration isolation spring / pads.
- 1.27.4. All minor building works necessary for installation of equipments such as making of openings in walls / floors, either of RCC or brick masonry, foundation trench for fuel line and cable, making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc. as required.
- 1.27.5. Dismantling of brick wall, if any, for inserting / positioning / placement of equipments, Control panel / Diesel Tanks or for taking ducting / cable tray / pipes and rebuilding / making good the same to its original position / finish for the same nothing extra shall be paid by the department.
- 1.27.6. Making good all damages caused to the structure during installation and restoring the same to their original finish.
- 1.27.7. Supply and installation of all necessary angle / channel / flat iron supports and brackets etc. for installation of the substation equipments, D.G. Sets / Diesel Tanks / Exhaust Piping / Water and fuel piping / Cabling / electric Panels / bus-trunking / pumps / accessories on floor / wall / Shaft / terrace and at other places, as may be necessary including their installations in position.
- 1.27.8. Responsibility to ensure safety of all materials against pilferage and damage till the installation is handed over to the department.
- 1.27.9. All scaffolding as may be necessary for installation of Exhaust piping / Cabling / Electric Panels / exhaust pipe / wet riser and sprinkler pipes / ducts and all other equipments and their sub assemblies / accessories on floor / wall / Shaft / terrace and at other places during erection work and subsequent removal.
- 1.27.10. Painting of all exposed metal surfaces of equipments and components with appropriate / approved colour as required and as desired by the Engineer – in - charge.
- 1.27.11. All electrical works including cables / wires, earthing etc as specified in Schedule of work.
- 1.27.12. Small wiring, inter-connection etc. inclusive of all materials and accessories necessary to comply with the regulations as well as proper and trouble free operation of the equipment.
- 1.27.13. Closing of the cable entry points in sub-station against seepage of water rodents etc.
- 1.28. DATE OF TAKING OVER OF THE INSTALLATION AND DATE OF ACCEPTANCE:
- 1.28.1. The date of taking over of the installations under any sub-head of E&M works shall be the date of taking over the complete building (s) after due completion of the entire composite work and after complete test and trial run of all the

major equipments under all sub-heads of E&M works to the entire satisfaction of the engineer-in-charge.

- 1.28.2. Subject to the guarantee clause, date of taking over the installation after stipulated period of trouble-free operation of all the E&M works shall be the date of acceptance.
- 1.29. The appointment of Arbitrator shall be governed by the relevant clause of CPWD General Condition of Contract. The condition of contracts shall be governed by GCC, CPWD.

2. ADDITIONAL CONDITIONS AND SPECIFICATION FOR INTERNAL EI, FAN AND FITTING ELECTRICAL WORKS:

- 2.1. The Department shall not issue any T & P and nothing extra shall be paid on account of this.
- 2.2. The main contractor should possess valid electrical contractor license. In case the main contractor does not have the electrical license to operate in the concerned location/jurisdiction, he shall associate an electrical contractor who has the license to operate in the said relevant jurisdiction. The main contractor shall however continue to be responsible in all respects for the work done by his associate and also for the necessary statutory compliances. Such associate contractor shall be eligible in terms of the criteria given below, he shall be allowed to execute this sub-head of work after due verification by the Engineer-in-Charge of Electrical Works.
- 2.3. The firm shall be issued tender on production of valid electrical license from competent authority in the name of the contractor. However, the contractors shall be allowed to participate in tender with an undertaking that they will either obtain valid electrical license at the time of execution of electrical work or associate contractors having valid electrical license of eligible class. In case of association of electrical contractor, the main contractor has to enter in agreement with the contractor associated and copy of such agreement shall be submitted to Executive Engineer in charge of E&M component. In contractor intends to change the associated contractor during operation of the contract, he shall obtain prior approval of respective Engineer in charge. The new agency shall have to satisfy the laid down eligibility criteria. In case Engineer in charge of respective discipline is not satisfied with the performance of the agency, he can direct the main contractor to change the agency associated for execution of minor component and this shall be binding on the main contractor. In case the main
- 2.4. Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.
- 2.5. The tenderer shall guarantee among other things, the following vis-à-vis specifications.
 - 2.5.1 Quality, strength and performance of the materials used.
 - 2.5.2 Satisfactory operation during the maintenance period.
- 2.6 DEFECT LIABILITY PERIOD :
 - 2.6.1 All the equipments shall be guaranteed for a period of 12 months from the

date of taking over the installation by the department against unsatisfactory performance and / or break down due to defective design, workmanship of material. The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-Charge in this regard shall be final.

2.7 EXTENT OF WORK:

2.7.1 The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning as may be required by the department.

2.7.2 Minor building works necessary like making of opening in walls or in floors and restoring to their original condition, finish and necessary grouting etc as required to be undertaken.

2.7.3 Maintenance (Routine & preventive) for one year from date of completion and handing over.

2.8 Co-operation with other agencies : The successful tender shall co-ordinate with other contractors and agencies engaged in the construction of the building and exchange freely all technical information so as to make the execution of this works contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any existing portion of the building has to be dismantled and re-done for want of cooperation and coordination by the successful tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of the work was not undertaken by the successful tenderer himself. Water proofing of pits shall not be damaged under any circumstances.

2.9 Verification of correctness of material at Destination: All materials and equipments supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site. The contractor shall have to produce all the relevant records to certify that the genuine material from the manufacturers has been supplied and erected.

2.9.1 Materials and equipments to be used in the work shall be inspected by the Departmental officers. Such inspection will be of following categories:

- (a) Inspection of materials/equipments to be witnessed at the Manufacturer's premises in accordance with relevant BIS/Agreement Inspection Procedure.
- (ii) To receive materials at site with Manufacturer's Test Certificate(s).
- (iii) To inspect materials at the Authorized Dealer's Godowns to ensure delivery of genuine materials at site.
- (iv) To receive materials after physical inspection at site.

2.9.2 Similarly, for fabricated equipments, the contractor will first submit dimensional detailed drawings for approval before fabrication is taken up in the factory. Suitable stage inspection at factory also will be made to ensure proper use of materials, workmanship and quality control.

2.10 INTERPRETING SPECIFICATIONS / Order of Preference: Should there be any

difference or discrepancy between the description of items as given in the Schedule of Quantities, technical specifications for individual items of work (including additional and commercial conditions) and IS Codes etc., the following order of preference shall be followed:

- (a) Schedule of quantities.
 - (b) Commercial and Additional conditions, technical specifications for this work.
 - (c) General Conditions of Contract for CPWD Works.
 - (d) Drawings (if any approved by the Engineer-in-charge)
 - (e) CPWD General Specifications for electrical works
 - (f) Relevant IS or any other International code in case IS code is not available.
- 2.11 Executive Engineer (Elect.) shall be the Engineer-in-Charge as far as electrical works are concerned. Separate tender form for electrical component is appended with his tender. It will be obligatory on part of the main contractor to sign the tender documents for all the component.
- 2.12 The main agency shall be responsible for all acts of commissions and non-commissions of the electrical contractor or sub-contractor engaged by him, even with approval of department.
- 2.13 Approval of the Engineer-in-charge shall be taken well in advance for all the materials to be used in the work by the contractor.
- 2.14 Running payment for Electrical/Mechanical components shall be made by the EE (E) directly to the main Contractor. The main contractor shall make the payment to associated Contractor within 15 days of receipt of each running account payment.
- 2.15 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. The part rates will be decided by the Engineer-In-Charge of the work and shall be binding on the contractor.
- 2.16 The main contractor shall be responsible for coordinating the activities of all works and will ensure progress of works as per laid down programmed.
- 2.17 The Associated electrical Contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-charge and will comply with the remarks therein.
- 2.18 The contractor shall make his own arrangement at his own cost for electrical / General Tools and plants required for the work.
- 2.19 The connections, inter-connections, earthing and inter-earthing shall be done by the contractor wherever required to be done for energisation of the installation and nothing extra shall be paid on this account.
- 2.20 The contractor must be able to work on concrete slabs / walls as and when required and in complete co-ordination with the civil works. Cutting of chases in the plastered wall shall in no case be allowed. The contractor shall fix conduits and boxes in the walls soon after the brick work is completed and finish the chase to rough surface with proper cement sand mixture. Only in exceptional cases e.g. where cutting of plastered surface cannot be avoided it will be contractor's responsibility to ensure that plastering is done to match the original finish at no extra cost.

- 2.21 The contractor shall remove all the debris due to the electrical works from the site as soon as the work is completed.
- 2.22 The rupturing capacity of the MCB's shall be 10 KA. The MCB's shall have ISI marked.
- 2.23 All the MCCBs shall be rated for $I_{cs}=I_{cu}$.
- 2.24 The copper wire to be used on this work shall be FRLS type.
- 2.25 Make of MCB/MCCB shall be the same as the make of MCB DB.
- 2.26 The Electrical works shall be carried out by the contractor, side by side with the progress of the civil works.
- 2.27 The Contractor shall on demand by the Engineer-in-charge, furnish the proof to the satisfaction of Engineer-in-charge regarding purchase of Wires, MCBs, MCBDB, Fittings, accessories and other items, from the manufacturers authorized outlets.
- 2.28 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.
- 2.29 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. However, wires within the cubicle panel will be measured and paid under relevant item of work.
- 2.30 The connection between incoming switch / isolator and bus bar shall be made with suitable size of thimble and cable at no extra cost.
- 2.31 Copper conductor of insulated cables of size 1.5 Sq.mm and above shall be stranded and terminals shall be provided with crimped lugs.
- 2.32 All MS pulling 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.
- 2.33 All sub-main shall be terminated in the main board with suitable copper lugs and thimbles for which nothing extra will be paid on this account.
- 2.34 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.
- 2.35 All hardware items such as nuts/ bolts/ screws/ washers etc. to be used in work shall be zinc/ cadmium plated iron.
- 2.36 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.
- 2.37 While laying conduit, suitable size junction boxes shall be provided for pulling the wire as per the decision of the E-in-C.
- 2.38 Materials to be used in work are to be ISI marked wherever applicable. The make of the materials have been indicated in the list of acceptable makes. No other makes will be acceptable. For items for which acceptable makes are not mentioned in the tender document, Engineer-In-Charge shall decide the make before bringing the material to the site by the contractor. 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.

- 2.39 Quantity of various items as specified in tender document may changes during construction stage as per site condition / client's requirement, the successful bidder is advised to verify the actual requirement of items including fittings, fixtures before bringing the material to the site.
- 2.40 In case the same item(s) appear more than once in the schedule of work / BOQ under the same sub head or among the different subhead of works, the lowest rate quoted for that item (s) shall be considered for the particular item(s) wherever appeared in any part of BOQ/ Schedule of works for the purpose of tender evaluation although web generated e-price bid may incorporate different quoted rate for same item(s) as per the quoting pattern of the tenderer. The tendered amount thus worked out shall be final & shall be binding on the contractor.
- 2.41 All statutory deductions like WCT, Labour welfare cess etc. shall be made from the bills.
- 2.42 Testing: All testes prescribed in these General Specifications, to be done before, during and after installation, shall be carried out, and the test results shall be submitted to the Engineer-in-charge in prescribed Performa, forming part of the Completion Certificate.
- 2.43 Commissioning on Completion: After Completion of the work, it shall be ensured that the installation is tested and commissioned.
- 2.44 COMPLETION PLAN AND COMPLETION CERTIFICATE:
- 2.44.1 For all works completion certificate after completion of work shall be submitted to the Engineer-in-charge. (ii) Completion plan drawn to a suitable scale in tracing cloth with ink indicating the following, along with three blue print copies of the same shall also be submitted.
- 2.44.2 (a) General layout of the building.
- (b) Locations of main switchboard and distribution boards, indicating the circuit numbers controlled by them.
- (c) Position of all points and their controls.
- (d) Types of fittings, viz. fluorescent, T5, LED based, pendants, brackets, bulk head, fans and exhaust fans etc.
- (e) Name of work, job number, accepted tender reference, actual date of completion, names of Division/Sub-Division, and name of the firm who executed the work with their signature.
- 2.44.3. The contractor shall submit the completion plan separately in triplicate on blue print with one set on tracing "Cloth" as per the contract within 30 days of the completion of work. In case, the contractor fails to submit the plan, he shall be liable to pay a sum equivalent to 3.5% of the value of the work subject to a ceiling of ` 35,000.00.

3 ADDITIONAL CONDITIONS AND SPECIFICATION FOR EARTHING SYSTEM :

3.3 This section covers the general requirements of the earthing system for Sub-station installation & Protection of building against lightning.

3.4 SYSTEMS :

3.4.1 Earthing system shall comprise earth electrodes in accordance with clause 8.2.1 of General specifications for Elect. Works (part I Internal) 2023. 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. For a one transformer sub- station total number of earth electrodes shall be 4 (2 for neutral earthing and 2 for connection to a common earth bus for body earthing)

3.5 ELECTRODES :

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

3.6 LOCATION OF EARTH ELECTRODES :

3.6.1 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.

3.7 WATERING ARRANGEMENT : Method of watering arrangement shall comply with CPWD general specifications.

3.8 SIZE OF EARTH LEAD :

3.8.1 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 upto date. The minimum size of earth lead shall be 25 mm x 5 mm copper of equivalent GI strip.

3.9 INSTALLATION :

3.9.1 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 60 cm 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.

- 3.9.2 Earthing system shall comprise earth electrodes in accordance with clause 8.2. of General Specifications for electrical works (Part I internal) 2023. Normally an earth electrode shall not be situated less than 1.5 m from any building. GI Pipe electrode shall be used for earthing of internal electrical installations like DB, Meter Board, Feeder Pillars & Poles etc. GI plate electrode shall be used for firefighting pumps, water supply pumps, lightning conductors. Separate earth electrodes shall be provided for lightning arrestor / lightning conductors.

3.10 TESTING :

- 3.10.1 After installation, the tests as specified in CPWD General Specifications for Electrical work (Part I Internal) 2023 shall be carried out and results recorded

3.11 Selection of Type of Electrodes :

- 3.11.1 Following are general guidelines for the selection of the type of electrodes. Number of Earth Electrodes.
- (a) In all cases, relevant provisions of Rules 33, 61 and 67 of the Indian Electricity Rules, 2005 as amended, shall be complied with.
 - (b) Non-current carrying metal parts of all apparatus utilizing power supply at voltage exceeding 250 volts shall be earthed by two separate and distinct connections to the earth bus, or to two separate and distinct earthing sets.

3.12 ADDITIONAL CONDITIONS AND SPECIFICATIONS FOR CABLE AND CALBE LAYING WORK :

- 3.12.1 The work shall in general be carried out as per CPWD General Specifications for Electrical Works, Part – II, 1994 amended up to date.
- 3.12.2 When more than one cable are laid in the same trench, the smallest size of the cable shall be considered as main cable and the higher size cables shall be considered as additional cable laying in the same trench. Measurement of cable laying work shall be taken accordingly.
- 3.12.3 The make of UG cable supplied shall be one from the preferred makes of materials. The MV cables shall have ISI certification mark having valid ISI certification license.
- 3.12.4 A certified copy of the valid BIS license for all sizes and type of UG Cables covered in this work shall be furnished before offering of inspection of cable. All the UG cables used in this work shall be of any one make from the list of preferred makes of materials. Cables of different makes, though from list of preferred makes of materials, shall not be

used.

- 3.12.5 Inspection & Testing – Contractor must intimate to the Engineer-in-Charge at least 14 days in advance, about the probable dates when the entire lot of UG Cables of all sizes to be used in this work shall be ready at the manufacturer's premises. Engineer-in-charge or his authorized representative shall inspect the UG Cables at the manufacturer's premises and carry out the Acceptance and Routine tests on the ISI marked cables of sizes, (separate for each size) as prescribed in IS-7098 (Part-I) – 1988 as amended up to date and in accordance with the sampling plan prescribed therein.
- 3.12.6 In addition to above, contractor shall arrange to furnish certified copies of all the Type Test Certificates, as prescribed in the relevant IS-7098 (Part-I)-1988 to the Engineer-in-charge, along with the call of Inspection of the UG Cables. The Engineer-in-Charge or his authorized representative shall be given access to the original Type Test for verification in respect of each size of the Cables, under inspection, by the manufacturers.
- 3.12.7 Inspection of the items of supply shall be done by the Inspecting officer, before they are dispatched to place of delivery. On completion of inspection, dispatch instructions accompanied with copies of inspection report shall be issued by the Inspecting Officer / Engineer-In-Charge. Only those materials as passed in inspection by the Inspecting Officer shall be dispatched. Copy of inspection certificate as issued by Inspecting Officer shall be dispatched to site of work.
- 3.12.8 Place of Inspection / Testing: Contractor should state the place / factory where the equipment will be put up for inspection. They should also clearly indicate the facilities available for different tests.
- 3.12.9 Inspecting Officer: The inspecting officer will be the Engineer-in-charge or any officer authorized by the Engineer-in-charge for the purpose of inspection/test.
- 3.12.10 Arrangement for Inspection / Testing: All arrangements required for inspection of materials and testing at factory are to be made by the supplier and nothing extra shall be paid for the same.
- 3.12.11 Marking of Inspected Materials: The inspecting officer will get the stickers {marked "INSPECTED"} pasted on all items inspected and an additional sticker marked "TESTED" only on the items tested.
- 3.12.12 Inspection schedule: The inspection call should be sent by Fax / Telegram after award of work as per Table of Mile Stone. Inspection call shall be given at least 14days prior to date of inspection proposed.
- 3.12.13 Packing: Strictly in accordance with the provisions as per clause 18.1, 18.2 and 18.2.1 in IS-7098 (Part-I) – 1988 as amended up to date.
- 3.12.14 Delivery Period: Shortest possible time schedule in delivery is required to be framed / observed, but not later than the specified. The date of

actual receipt of materials at site will be considered as the relevant date for this purpose. The delivery schedule shall be as per Table of Mile Stone.

Payment Terms: The percentage of contract rates for the various items included in this sub-head of work shall be payable as per mention General and commercial condition head.

- 3.12.15 Placing Order on UG Cables: Before placing orders on the manufacturer for supply of the cables, the contractor is required to carefully get assessed the exact requirement of each size of the cable at the site of work and get the same approved from the Engineer-in-charge. Department shall Not Take Back any spare quantity of cable whether in pieces or in sealed drums if procured more than that actually required at site / approved by the Engineer-in-charge. Even if advance payment is made for the cable and after erection surplus cables are found, the payment towards surplus cables made if any, shall be adjusted from the next on account bill of the contractor.
- 3.12.16 However, it may be noted that the contractor shall have to arrange extra quantity of the cable, over and above that assessed by the contractor, before start of the work and approved by the Engineer-in-charge, if such additional quantity of the cable is required at site, in order to make the installation as covered in the Reach and Scope of this work, in order to make the installation operational. Such extra quantity shall be paid as per terms of the Agreement.
- 3.12.17 Inspection & Testing – All the cable used at work should be tested before measurement of cables at work site as well as before use at work. The manufacturer test certificate should be produced at site at the time of delivery of cables at work site.
- 3.13 POWER CABLING :
 - 3.13.1 Unless otherwise specified, the power cables shall be XLPE insulated, PVC outer sheathed aluminium conductor, armoured cables 1100 V grade. The power cables shall be of 2 core for single phase, 4 core for sizes upto and including 25 sq.mm, 3-1/2 core for sizes higher than 25 sq.mm for 3 phase.
 - 3.13.2 Power cables shall be of sizes to meet the starting and running current of motors fed and shall be as approved by the Engineer-in-Charge, after taking into consideration the load, the length of cabling.
 - 3.13.3 Cables shall be laid in suitable metallic trays suspended from ceiling, or mounted on walls. Cable ducts shall not be provided in pump rooms. Cable trays shall be of perforated steel sheet with adequate structural strength and rigidity. Necessary supports and suspenders for cable trays shall be provided by the contractor as required.
- 3.14 EARTHING :

- 3.14.1 Provision of earth electrodes and the type of earthing shall be as specified in the tender specifications.
- 3.14.2 The earth work shall be carried out in conformity with CPWD Specifications for Electrical works (Part-I), Internal 2023.
- 3.14.3 Metallic body of all motors, medium voltage equipments and switch boards shall be connected by two separate and distinct earth conductors to the earth stations of the installations; looping of such body earth conductors is acceptable from one equipment, or switch board to another.
- 3.14.4 The size of earth conductors for body earthing of equipments shall be 2 Nos. 6mm dia copper wire/2 Nos. 25 x 3 mm G.I. strip
- 3.14.5 Armouring of cables shall be connected to the body of the equipments/switch board at both the ends. Compression type glands shall be used for all such terminations in the case of PVC cables.
- 3.15 PAINTING :
- 3.15.1 All panels shall be supplied with the manufacturer's standard finish painting or as indicated in the Schedule of Work.

Special Terms & Conditions for SITC of Main LT Panel & Allied Works

1. Scope of Work

The scope of work shall include design, fabrication, supply, transportation, unloading, shifting, installation, testing, commissioning and satisfactory handing over of main LT Main and all allied works complete as required and as directed by Engineer-in-Charge.

2. Compliance with Standards

The entire work shall conform to latest CPWD General Specifications for Electrical Works Part-I (Internal), Part-II (External), relevant IE Rules, CEA Regulations, IS, IEC and statutory requirements amended up to date. The LT panel shall conform to IEC 61439 and the latest applicable IS/IEC standards.

3. Approval Before Fabrication

The contractor shall prepare detailed GA drawings, schematic diagrams, bus bar sizing calculations, foundation details, cable termination details and obtain approval from Engineer-in-Charge before commencement of fabrication.

4. Makes of Major Components

The make of VCB, ACB, MCCB, protective relays, multifunction meters and other switchgears shall be as approved by Engineer-in-Charge and shall conform to approved makes as per NIT conditions.

5. Type Test Certificates

The contractor shall submit valid type test certificates from NABL accredited/Central Government laboratory for LT Panel for short circuit withstand test, temperature rise test and degree of protection test. The type

test certificates shall not be older than 5 years.

6. Routine Tests

Routine tests shall be carried out at manufacturer's works before dispatch in presence of departmental representative if desired by Engineer-in-Charge. Test certificates shall be submitted before dispatch.

7. Short Circuit Ratings

LT Panel shall be suitable for 50 KA for 1 second unless otherwise specified.

8. Interlocking Arrangement

Proper mechanical and electrical interlocking arrangement shall be provided in LT panel to prevent unsafe operation. The breaker shall not be capable of closing inservice position unless fully engaged.

9. Bus Bars

Bus bars shall be of high conductivity aluminium alloy/copper as specified and insulated with heat shrinkable sleeves. Adequate clearance and creepage distances shall be maintained.

10. Degree of Protection

LT Panel shall have minimum protection class IP43. All unused openings shall be properly sealed.

11. Control Wiring

Control wiring shall be carried out with FRLS copper conductor cables of minimum 2.5 sq.mm size with ferruling at both ends. Wiring shall be neatly dressed and properly identified.

12. Danger Notices & Labels

All panels shall be provided with engraved designation labels, danger notices, phase identification and operating instructions as approved by Engineer-in-Charge.

13. Foundation & Grouting

The contractor shall make suitable foundation arrangement, grouting, alignment and fixing of panels complete in all respects including necessary channels, hardware and anti-vibration pads wherever required.

14. Cable Termination

All cable glands, lugs, termination hardware, ferrules, sleeves and accessories required for internal termination shall be included in the scope of work.

15. Earthing

The HT Panel, LT Panel, cable armour, gland plates and all metallic parts shall be effectively earthed with independent earth continuity conductors complete as required.

16. Shutdown and Final energisation Coordination

Shutdown, if required, shall be coordinated by contractor with Engineer-in-Charge/his authorized representative. The work shall be executed in planned manner to minimize disruption of electrical services.

17. Dismantling of Existing Equipment

Existing LT panel and allied accessories shall be dismantled carefully without damage to surrounding installations. Useful dismantled material shall remain Government property and shall be deposited at location as directed by Engineer-in-Charge.

18. Testing & Commissioning

The contractor shall carry out insulation resistance test, continuity test, high voltage test, primary injection test, relay testing, interlock checking and functional testing complete before commissioning.

19. Statutory Approval

Necessary coordination with local power supply agency BEST, electrical inspector/local authorities for inspection and approval, wherever required, shall be in contractor's scope. However statutory fees, if any, shall be reimbursed separately on production of documentary proof, unless otherwise specified.

20. Guarantee

The entire installation shall be guaranteed for a period of 12 months from date of successful commissioning against manufacturing defects, defective workmanship and malfunctioning.

22. Defect Liability

Any defect noticed during guarantee period shall be attended immediately by contractor at no extra cost to department. Defective components shall be replaced promptly.

23. Completion Documents

The contractor shall submit following documents before final payment:

- a. Approved GA drawings
- b. Schematic drawings
- c. Test certificates
- d. Warranty certificates
- e. As-built drawings
- f. Operation & Maintenance manuals

24. Measurement

The measurement shall be recorded on unit basis as specified in schedule of work and complete item shall include all accessories required for satisfactory operation whether specifically mentioned or not.

25. Nothing Extra Payable

Nothing extra shall be paid on account of minor modifications, accessories, interconnections, hardware, consumables, foundation bolts, identification tags, termination materials, testing equipments, labour, T&P etc. required for complete execution of work.

26. Cloud Communication Readiness

The LT Panel shall be provided ready for integration with Electrical Distribution Control System with cloud computing platform as per CPWD General Specifications for Electrical Works 2023 Part-I (Internal) Para 7.2.16 including necessary communication ports and compatibility provisions.

27. Safety Requirements

Contractor shall comply with all safety regulations during execution of work. Necessary PPE, barricading, insulation mats, danger signage and safety precautions shall be arranged by contractor.

28. Approval of Makes & Drawings

No material shall be brought at site without prior approval of make and technical particulars by Engineer-in-Charge.

29. Penalty for Delay in Rectification

Any defect/failure noticed during guarantee period affecting essential electrical services shall be attended within 24 hours, failing which Engineer-in-Charge may get the work executed at risk and cost of contractor.

30. Final Acceptance

Final acceptance shall be subject to successful testing, commissioning, submission of documents and satisfactory performance of system.

NOTE: This work is of an urgent nature; therefore, no extension of time shall be allowed.

List of Indian and International Standard to be followed:

1. IEC – 2271-100 International Standard: High voltage alternative current circuit breakers.
2. IEC – 298 International Standard: AC metal enclosed switchgears and control gear for rated voltage above 1 KV and upto including 52 KV.
3. IEC 694 International Standard: Common specification for High Voltage Switchgear and control gear standards.
4. IS 2516 Specification for alternating current Circuit Breakers. Voltage above 1000 V upto and including 11000 V.
5. IS 12729 : General requirements for switchgear and control gear for voltage exceeding 1000 V.
6. IS 13118 : General requirements for circuit breaker for voltage above 1000 V.
7. IS 133427 : Metal enclosed switchgear and control gear for voltage above 1000 V but not exceeding 11000 V.
8. IS 5082 : Material for data for aluminum bus bars.
9. IS 9920 : Switches and Switch isolator for voltage above 1000 V. 46
10. IS 2705 : Current Transformer.
11. IS 3156 : Voltage Transformers.
12. IS 1248 : Electrical indicating instruments.
13. IS 3231 : Electrical Relays for power system protection.
14. IS 6875 : Control switches and push buttons.
15. IS 694 : PVC insulated cables for working voltage upto and including 1100V.
16. IS 8623 : as amended upto date for general constructions of LT Board.
17. IS 1554 & IS 732 as amended upto date for cable.
18. IS-13947 – 1993 as amended upto date for degree of enclosure protection.

Executive Engineer (E)

Assistant Engineer (E) (P)
Mumbai-20 MUMBAI - I, CPWD,

Executive Engineer (E)
MUMBAI - I, CPWD, Mumbai-20

PREFERRED MAKE LIST (E&M Services)

Note :

1. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material or engaging any of the specialized agencies. The Contractor shall make a detailed submittal with catalogues and highlighted proposed specifications, as well as full details of the works proposed to be executed by the specialized agency, as specified.
2. Wherever applicable, the Engineer-in-charge may approve any material equivalent to that specified in the tender subject to proof being offered by the Contractor for equivalence to his satisfaction.
3. Unless otherwise specified, the brand / make of the material as specified in the particular specifications and in the list of approved materials attached in the tender, shall only be used in the work.

Sr. No.	Description of items/equipments	Approved Makes
1	Access Control Biometric Cum Access Reader	Bosch/Honeywell/HID/ Morpho
2	Access Control Software / Video Interface Software	As Per The Access Controller OEM
3	Access Controller	Bosch/Honeywell/HID / Lenel/ Software House / Johnson Control
4	Acoustic Enclosure For DG Set	OEM / OEA Of DG Set
5	Actuator For Fire Damper	Siemens/ Honeywell /Belimo /Johnson
6	Addressable Fire Detectors, Optical Cum Thermal Detectors, Smoke Detectors, Thermal Detectors	Notifier / Bosch /Johnson Control / Siemens/Agni by FYRLAAS/ASES
7	Addressable Manual Call Points, Monitor Module, Control Module, Fault Isolator, Low Intensity Hooters	Notifier / Bosch /Johnson Control / Siemens/Edwards/Agni by FYRLAAS/ASES
8	Air Washer, Air Curtain, Dryscrubber	Systemair/Zecoaircon/EdGetech/ VTS TF Air Systems / Wave/ Trion/ Espair/Russel/RO OTS Air/Brightflow/ Humidin
9	Air Circuit Breaker (ACB)	LK U Power-MTX 3.5 / Legrand DMX3-4.10/ Schneider NW-6.0E/ Siemens 3WL-ETU45B / ABB-Emax2-PR122/C&S electric
10	Air Filters	Thermodyne/Purolator/Anfilco/Camfil/ Pyramid/Dyson / Coway
11	Air Flow Switch	Omicron/Kele/Greystone
12	Air Handling Unit, Fan Coil Unit	Systemair/EdGetech/ Carrier VTS /Trane/Blue Star/Voltas /Wave /Zeco
13	Air Vessel	Getech / Newage / Padmini
14	Alternator	Stamford/ Leroy Somer / Crompton Greaves / Kirloskar / ABB / Siemens
15	Analog Phone	Alcatel/ Avaya/ Panasonic/Beetel/Sony
16	Anchor Fastener	Fisher / Hilti /Anchor / Trixel / Bosch

17	Anti Vibration Mounting (Except D.G. Set)	Dunlop/ Emerald/ Easy Flex/ Resistoflex
18	Anti Vibrations Mountings For D.G Set	As Per Manufacturer Standard Specification
19	Apfc Relay/Reactor /Thyristor Module	L&T/Enercon/ABB/ Siemens/ Schneider Electric/ Neptune(Ducati)
20	ATS	L&T/Siemens/Schneider/ABB
21	Auto Air Vent With Stop Valve	Rapid Cool / Anergy/ Honeywell /Johnson Control
22	Automatic Mains Faileur (Amf) Panel	OEM / OEA Of DG Set
23	Aviation Light	Bajaj/ Insta Power/Spectrum/Crompton
24	Balancing Valve	Audco/Advance/ Danfoss/ Hammer / Oventrop
25	Batteries (Lead Acid / Maintenance Free)	Exide / Amar Raja / Okaya / Luminous
26	Bldc Ceiling Fan (Is 374:2019)	Atomberg- Gorilla/Havells/ Crompton/Goldmedal/GM,
27	Branch Pipe	Padmini / New Age / Omex / Minimax / SupereX/Getech/Agni
28	Cable Gland /Cable Lugs/ Thimble	Comet / Jainsons / Braco/Dowells
29	Cable Tray - Steel Wiremesh Ss304	OBO / Legrand / MK
30	Cable Tray -Perforated Hot Dipped Gi	OBO/ Mk/Erico/Bravo/Steelways/Slotco/ Pilco
31	Cable Trunking and Ducting System for Electrical Installation (IS: 14927:Part 2:2021)	Duly ISI Marked : Richa Group/Pressfit/Vatco Elec Power Pvt Ltd
32	Cables (Audio, Video, Hdmi, Vga, Speaker, Microphone And Other), Connectors	Belden / Kramer / Extron / Kenter
33	Capacitor	Schneider / Siemens / L & T / Legrand
34	Car Parking (Double Stack)	Klaus/ RR Parkon/Wohr
35	Card Reader	Honeywell / HID / Bosch
36	Cast Iron Stand Post	New Janta Metal Works /New Age / Aaag / Padmini
37	Cat 6 Patch Cord, Cat 6 Lan Cable, Fibreoptic Cable, Fibre Patch Cord	Legrand/Amp/Dlink/Molex/ Cisco/ Schneider / Kenter/Rotoplast/STL/NOTOFIRE
38	CCTV Camera, Digital Video Storage, Recorders & Management Software	Bosch/Honeywell/Sony/HikviSIon/ Matrix
39	Centrifugal/Axial/Vane Axial/ In-Linefansandtheirfan Motors	Kruger/Greenheck / Nicotra / Wolter / Ostbergwith Motor From Their Approved OEM / System Air / Carrier
40	Chilled Water Machines	Carrier/ York/ Trane/Daikin

41	CI - Sluice Valve/ Butterfly Valve / Non Return Valve	Kirloskar /Advance/Audco/ Zoloto/ Hammer
42	Circuit breakers for Overcurrent and without integral Overcurrent protection for household and similar for installations (Switchgears: ACBs, MCCBs, MCBs, MCBDBs, RCCBS)[IS/iec 60898 Pt-I:2015, IS:12640 : Part-1:2016)	L K U Power / Legrand Dmx3/ Schneider/ Master Pack Nw/ Siemens 3 Wl / ABB/Pressfit/Greatwhite/C&S electric/Goldmedal/BCH/PANASONIC/ANCHOR
43	Co2 Sensor	Honeywell/Siemens/Johnsoncontrol/ Danfoss/Dwyer/Indfos/ Omicron
44	Compact Substation / Packag Sub Station	ITE - Gurgaon, ABB India, Schneider
45	Contactors & Relays	L&T-MO/ Siemens-3RT / Schneider-D Series/ ABB-AF/Legrand-CTX/C&S electric
46	Control Panel (Car Parking)	As Per OEM
47	Control Valve (Installation/ Isolation And Any Other)	HD / Spray Safe /Tyco / Grinnell / Padmini / Newage
48	CONTROLS / BMS Cables (ELV) IS:1554 & BS 6724	BATRA HENLAY, Polycab, KEI, RR cables
49	Coolingtower	Paharpur/ Advance/Bell
50	Copper refrigerant pipe 1.2 mm thick	Rajco Metals/ Mandev/ Maxflow/ Nippon/ Hindustan Copper/Met Tube/Totaline
51	Coupling	Lovejoy/Dunlop, KTR system, Fenner Drives India
52	Current Transformer / Potential Transformer	AE / Kappa / L&T / Neptune
53	D.C. Cable	Duly ISI Marked: Finolex/Polycab/Havells/KEI/ Lapp Kabel / RR Kabel/
54	DDC (Digital Direct Control)	Honeywell (Trend)/ Siemens/ Johnson Control
55	Diesel Engine	Cummins / Koel/Volvo Penta/Caterpillar
56	Differential Pressure Switches	Honeywell / Siemens/Johnson Control
57	Digital Signal Processor	Extron / Bimap / QSC
58	Dwc Pipe/Hdpe Pipe	Rex/ Natni /Polymer/Gemini/ Duraline/ Trupti / Sy-Aron/Jain Plumbing
59	Electric Motors For Pumps	Siemens / Kirloskar /Crompton /ABB/ Bharat Bijlee
60	Electric Vehicle (EV) Chargers	LABOTEK, SIEMENS EV CHARGING, SCHNEIDER ELECTRIC EV , LEGRAND GREEN'UP
61	Electro Magnetic Lock	Trimec / Securitron / Lockwood
62	Electronic Timer	L&T / Minilec/Schneider/Siemens/ Legrand
63	Energy Meter	Havells/L &T /Siemens/ HPL/AE / ABB

64	EPBAX IP Based Server With Licenses	Avaya / Alcatel / Unify / NEC / Panasonic / Siemens / Matrix
65	Exhaust Fan/ Fresh Air Fan / Wall Fan	Usha/Havells/Crompton/PANASONIC/ANCHOR
66	Exit Switch/ Egress Switch	Securitron / Lockwood / Tesa
67	Fire Butterfly Valve [IS: 13095:2020]	New Age / Omex / Superex / Lifegaurd / Getech / Dunlop / Essel/Agni/Armorfire
68	Fire Extinguisher [(Portable-IS: 15683:2018) and (Wheeled type-IS 16018:2012)]	Cease Fire/ Minimax/ Firequip/Safe Guard/Safex /Lifeguard / Omex/Atasee/ Vintex/Getech/Agni
69	Fire Hose Pipe, Hose Coupling, Hose Reel Drum, First-Aid Rubber Reel, First Aid Hose Reel (IS:903:1993, IS:884:1985)	Padmini / New Age / Omex / Jayshree / Superex / Lifegaurd / Atasee/Getech / Jyoti / Dunlop / Aaag, Essel/Agni/Armorfire
70	Fire Landing Valve [IS: 5290:1993]	Padmini / New Age / Omex / Jayshree / Superex / Lifegaurd / Atasee/Getech / Jyoti / Dunlop / Aaag, Essel/Agni/Armorfire
71	Fire Survival Armored Cable	Draka/Ranorlappkable/Beldon/Tyco/Rotoplast/Kenter/NOTOFIRE, BATRA HENLAY
72	Flexible Connection Pipe (For Sprinklers)	HD / Newage /Flexguard/Agni
73	Flexible Grooved Fittings/ Couplings	Victaulic/Tyco/Grinnel/Viking
74	Flow Switch	HD/Honeywell/Siemens/System Sensor/ Johnson Control
75	Fresh/ Exhaust Airlouver	Conair/ Mapro / Airmaster/ Dynacraft/ Cosmos
76	FRLS Armoured Cable (Power, Control)[IS 694:2010, IS 7098:1988, IS: 14255:1995, IS:1554:pt-1: 1988 etc]	Duly ISI Marked : Finolex / Havells / Kenter / RR Kabel / Polycab/ KEI /Pressfit/ Vishal / Kenter, AKG/Ganak Cables/ Sudhakar / GreatWhite/Goldmedal/FoliFlex/Rotoplast/STL/NOTOFIRE, Bonton, BATRA HENLAY
77	FRLS Copper Wire	Duly ISI Marked: Finolex / Havells/ Kenter / RR Kabel / KEI / Polycab / Kenter/ Kolors/AKG/Rotoplast/GM, Goldmedal, PRESSFIT/
78	G. M. Hydrant Valve	Padmini/ New Age / Omex / Minimax / Superex/Getech
79	Genset/Engines	ESCORTS KUBOTA
80	GI Duct -Factoryfabricated	Zeco/Rollastar/Ductofab/Voltas/ Wave/ Edgetech/ Ecoduct
81	GI Sheet For Car Parking	Duly ISI Marked: Tata / Sail / Jsw, Uttam Galva /Essar
82	GI/ Ms Pipe	Duly ISI Marked: Tata / Sail / Jindal (Hissar)
83	Grille/ Diffuser / Jet Nozzle	System Air/Caryaire/ Airflow/ Conaire/ Mapro/ Dynacraft/Cosmos/Pineair

84	Gunmetal Valves - Gate Valve/ Nrv/ Ball Valves/ Check Valves	Leader / Zoloto/ Kirloskar / Advance/Audco
85	HDMI Transmitter/Receiver/Convertor s	Lightware / Amx / Extron
86	Heat Recovery Wheel	Dri / Green Heck / Zeco / Flaktwoods / Ostberg / Bry Air
87	HT VCB Panel	ABB/Siemens/Schneider Electric/L&T/ Kirloskar/ Crompton
88	Humidistat, Airstat	Honeywell/ Johnson / Siemens / Danfoss
89	Hydraulic Cylinder	Hytech / Island/As Per OEM
90	Hydraulic RISIng Bollard	BGI/ Atg Access/ Gunnebo / Delta Scientific
91	Hydropneumatic Pump	Texmo / Siemens / Mather & Platt (Wilo)/ Grundfos/ ABB
92	Indicating Lamp (Led Type) /Push Button	L&T / Raas Control / Schneider Electric / Vaishno / Siemens/BCH/C&S electric
93	Insulation – Expanded Polystyrene	Beardsell / Up-Twiga / Styrene Packaging/ PR Packaging
94	Insulation I/C Puf, Fibreglass, Rockwool, Phenolic Foam, Pir	Up-Twiga/Lloyd Insulation/Supreme Industries/ Owens Corning/Armaflex /Vidoflex
95	Insulation -Nitrile Rubber	Armaflex /Vidoflex/ Eurobatex / Therma Flex / A- Flex / K-Flex
96	Intelligent Addressable Main Fire Alarm Control Panel With Battery Backup/ Repeater Panel/Mimic Panel [Tested as per IS 15908]	Notifier/ Bosch /Johnson Control/ Siemens/FYRLAAS BY AGNI/ASES
97	IP Camera	Bosch/ Axis/ Pelco / Sony
98	IP Phone	Avaya/Alcatel/ Unify/ Nec/ Panasonic
99	Junction Box For Solar Pv	Hensel / Adarsha / Automotous / Novus Green / As Per OEM Of Spv
100	Lan Network Switch / Core Switch / Distribution Edge	Cisco/ Dlink / Legrand /Impulse / Juniper / Extreme / Netgear
101	LED Display Monitor	Samsung/Sony/LG/Panasonic
102	LED Light Fitting, LED Tube, LED Downlighter, LED Dimmable Track Light, Track Light , Track, LED Street Light Fitting, LED Post Top Lantern Fitting, LED Flood Light, Recessed LED Luminaries	Phillips /Wipro /Trilux / Lighting Technology / Regent / Crompton / Focus Lighting & Fixtures Ltd. / Kolors / Havells/Great White/Goldmedal/GM/ Surya/ STURLITE/Plus Light Tech"/ and "Trix", /Orient Electric"/ (CK Birla Group Company) ,/ PANASONIC/ANCHOR, HYBEC
103	LED Wall Mounted Decorative Luminaire	Luker/ Phillips/Wipro/ Trilux / Lighting Technology
104	Level Switches, Level Transmitters	Danfoss/Dwyer/Indfos/Sontay/Potter/ Omicron/Filpro

105	Licensed Bms Software	Honeywell (Trend)/ Siemens (Desigo)/Johnson Control
106	Lift	Mitsubishi / Otis / Schindler / Kone / Johnson
107	Light Interface Unit (LIU)	Amp/Dlink/Cisco/Legrand
108	Lighting Arrester / Surge/ Flash Counter	Indelec/ ABB Furse/ Purcel/ Tercel
109	Lightning Protection System and Structural (Foundation) Earthing System	Cape / OBO / DEHN/Kapitrode®
110	Low Voltage Switchgear and controlgear (IS/IEC : 60947 part-4: Sec 1: 2012	Legrand/Mk Element/Schneider/ABB /C&S electric/BCH/PRESSFIT
111	LT Panel /MV Panel / APFC Panel And Other Electrical & Fire Panels (CPRI Approved) (IEC 61439-1 &2)	ABB / BCH/ Schneider/Siemens/Legrand/L K/AGNI/ASES/C&S electric/Pristine Power System/R.P. Controls,, ITE - Gurgaon [Note : <i>(1) The Contractor May Also Procure From Licensed Partner Of Above OEMs. The Licensed Partner Shall Use OEM Design Only For Which, He Will Procure A Certificate From The OEM Mentioning The Agreement No. On OEM Letter Head. (2) Amongst Licensed Partners The Following Are Specifically Approved : (1) Pristine Power System</i>
112	Magnetic Bearing Centrifugal Chillers/Centrifugal Chillers/Screw Chillers/Scroll Chillers	Turbolev/Turbotek/Prodigy/Kirloskar Scroll [Kirloskar Chillers Pvt Ltd.], Voltas, Carrier
113	Matrix Switcher/ Switcher	Amx / Extron / Bosch / Phillips/ Bose / Honeywell
114	MCB Db'S/MCB/RCBO/ RCCB/ MPCB / Isolator	Legrand /Hager/Siemens / ABB/ Schneider/C&S electric/ Goldmedal/ GM
115	MCCB	Schneider Compact Nsx/Legrand Dpx3/ Siemens 3 V1/L K Dsine/ ABB/C&S electric
116	MDF Box	ADC / GE / Malson
117	Metal Box/Surface Box [IS 14772 : 2020]	Legrand / Havels / Anchor/Pressfit/C&S electric/STL
118	Meters - Digital Ammeter / Digital Volt Meter / Digital Multifunction Meter	AE/Schneider(Conzerve)/Neptune/L&T/ABB /Secure/C&S electric
119	Microphone (Chairman, Gooseneck, Lapel, Handheld)	Beyerdynamics / Sennheiser/ Shure / JBL / Bosch/ Bose / Phillips / Honeywell
120	Modular Switches/ Sockets /Modular Plate With Base Frame/GI Switch Box (IS ; 3854:1997, IS 1293:2019, IS 14772:2020)	Legrand -Arteor / Mk Element/Schneider- Zencelo / Kolors- Krest / ABB Tivisha/ Alemac Artino/ Pressfit/ Greatwhite/ C&S electric/ Goldmedal/GM,/ PANASONIC/ANCHOR,

121	Modulating motor	Danfoss/Honeywell/Johnsonscontrol/ Belimo
122	Motorized Fire Damper	System Air/Caryaire/Greenheck/ Ruskin/ Kruger/Belimo/Dynacraft
123	Motorized Valves (Butterfly, Modulating And Balancing Etc)	Johnson Control / Honeywell /Siemens / Danfoss
124	Non-Percolating Flexible Fire Fighting Delivery Hose [Is : 636 :2018]	Essel /New Age / Dunlop / Atasee/Fire Chief/ Monsher/Agni
125	PA System (Speakers, Amplifier, Controller)	Bosch /Honeywell/ Bose / Johnson Control/ Notifier / Siemens/ASES/Agni
126	PC Based Operator Console	Avaya, Alcatel, Unify, Nec, Panasonic.
127	PH Sensor	Omicron/Kele/Sontay
128	PID Control Valve With Actuator, Motor & Thermostat	Danfoss / Siemens / Oventrop / Honeywell / Flowcon / Belimo / Johnson Control
129	Pipe Coating Material (Pipe Protection)	Pypkote / Coalteck
130	Pipe Hanger	Camry / Chilly /Gmgr
131	Pole Octagonal/ Steel	Bajaj / Volmount / Phillips / BPP/ Aster/ "Orient Electric" (CK Birla Group Company)
132	Power Amplifier For Audio Video Package	Bose / Extron / QSC / Creston / JBL
133	Pre-Filter	Anfilco /Thermodyne /Purolator/Spectrum
134	Pressure Gauge	H-Guru/ Metzger/ Bestobell/ Star Scientific / Fiebig/ Danfoss
135	Pressure Switches	Indfos / Danfoss / Honeywell / Johnson / Stefa
136	Pressure Transmitters	Honeywell/ Siemens/ Johnson Control
137	Pressurized Expansion Tank / Airseparator	Anergy/Emerald/Rapid Cool/ KEPL
138	Printer	HP/ Epson/ Samsung/Canon
139	Propeller Fans	Usha / Marathon / Khaitan / Alstom (Gec Alsthom) / Havells
140	Pufpipesupport	Malanpur/Lloyd /Bestpuf
141	Pump (Secondary Chilled Water Pump)	Armstrong / Grundfos / ITT-Bell / Gossett
142	Pumps (Hydrant, Sprinkler, Jockey, Booster, Drencher, Condenser Water, Chilled Water, Dewatering Etc And Any Other Pump Except Secondary Chilled Water Pump)	Grundfos/ Kirloskar / Mather & Platt (Wilo) / KSB/

143	PVC Conduit And Accessories [IS 9537 : Part 3: 1983]	Duly ISI Marked: PrecISIon/ Finolex/Pressfit/ Polycab/ AKG/Sudhakar/GreatWhite/ GM,
144	Raceways- Pre Galvanized / Hot Dipped GI Under Floor Trunking&Junctionbox	OBO/Legrand/MK
145	Response Indicator	Notifier / Bosch / Johnson Control/ Siemens/ASES/Agni
146	Rising Main, Bus Duct, Tap Off Box, End Feed Unit	Legrand/L K/ Schneider Electric / Godrej/ C&S electric
147	Rubber Mat /Insulation Mat for electric purpose (IS: 15652:2006)	Armaflex /Vidoflex/ Eurobatex / Therma Flex / A-Flex / K-Flex/Insulaticaa & Bharat Electrosafe/Any ISI Marked
148	Selector Switches	Kaycee / L&T / AE / Siemens/BCH
149	Sensor (Duct Temperature, Duct Humidity, Immersion Temperature, Outside Air Temperature, Room Temperature, Room Humidity)	Honeywell/ Siemens/Johnson Control
150	Sensor -Motion/Day Light, Occupancy Sensor	Legrand/Wipro/ Schneider/Philips/ Siemens/ Honeywell
151	Single Phase Preventer	Minilec / Siemens / L&T / Schneider Electric /ABB
152	Solar Water Heaters	Tata Solar Power / Bosch /Suntech /Racold / Emm-Vee / Havells
153	Speaker For Audio/ Video Package	Bose / Extron / Qsc/ Sennheiser /Shure /JBL / Honeeywell / Bosch/ ASES
154	Sprinkler/Automatic Sprinkler Head [IS 9972:2002]	Hd / Spraysafe / Tyco / Grinnell / Viking/Getech/Agni
155	SPV Inverter	Fronus/ SMA/Delta/ Kaco/ Techser"/ PROSTARM
156	SPV Module	Renewsys /Goldi /Tata Power/Panasonic/Bhel / CEL /Vikram / Bosch/ Emm-Vee
157	Stand Post Type Water and Water-cum-Foam Monitor for Fire Fighting with Solid Jet Nozzle [IS: 8442:2024]	ew Age / Omex / Superex / Lifegaurd / Getech /Dunlop / Essel/Agni/Armorfire
158	Starters (Dol, Star Delta And Soft)	L&T / Siemens / ABB / Legrand/C&S electric
159	STP Including FMR Tank, Filter Press	Thermax/Ion Exchange/Dorr-Oliver/ Eureka Forbes
160	System Integration Unit	Honeywell (Trend) / Siemens / Johnson Control
161	Telephone Cable/Wire	Duly ISI Marked: Finolex/ Legrand/ Dlink/ Mollex / RR Kabels
162	Telephone Junction Box & Module	ITL / ADC Krone /Malson/GE

163	Telephone Socket/Tv Antenna Socket/Data Socket (Rj45 Socket)	Legrand -Arteor / Mk-Element / Schneider- Zencelo / Kolors - Krest /ABB Tivisha
164	Telephone Tag Box	ADC Krone/Legrand/Cisco/ITL / D Link
165	Thermometer	H-Guru/ Metzer/ Bestobell/ Star Scientific
166	Transformer Oil & Dry Type [IS 1180 : part 1: 2014, IS 2026-1: 2011	Crompton/ABB/Voltamp/Siemens/Bhel/ Schneider/Kirloskar/ Power Star/ Esennar Transfarmer/ ITE - Gurgaon, /PAI KANE
167	Tv Co-Axial Cable	Duly ISI Marked : RR Kabel/ Havells/ Polycab/ Finolex/ Legrand / Molex
168	Two In One Auto Cum Balancing Valves	Johnson Control / Danfoss /Flowcon /Anergy /Belimo
169	U Rack	Valrack (Legrand) /Rittal/ Cisco/Wipro/ Schneider
170	UPS	Vertiv(Emerson)/Autometers Alliances - Pegasus/ APC (Schneider)/Legrand-Numeric/ Mitsubishi / Techser / Siemens/ PROSTARM/ LABOTEK
171	Variable Frequency Drive (Vfd)	Allen Bradlly/ Danfoss/ ABB / Honeywell / Siemens/Schneider
172	Vavbox	Honeywell / Trox/ Belimo / Ruskin / Titus/ Cosmos
173	Videowall Processor	Extron/Christi/Barco
174	Voltage Controllers / Stabilizers upto 3150 KVA, ALVC upto 10 KVA	ITE - Gurgaon,/ Servokon Systems Ltd.,/ Bluebird Power Controls/PROSTARM
175	Volume Control Damper,	Titus / Trox/ System Air /Caryaire/
176	VRV/VRF/Cassette/Split AC System/ Outdoor units, Indoor Units, Y joints and fittings, Remote	Daikin/Carrier/LG/Hitachi/Mitsubishi/OGeneral/Samsung/Toshiba/Voltas/Bluestar
177	Water Curtain Nozzle	Padmini / HD Fire / Newage
178	Water Heater/Geyser & Electric Irons	GM, Havells , Orient
179	Web Security	Zscaler/Checkpoint/Palo Alto/Cisco
180	Wifi Systems	Cisco/Impulse/Juniper/Extreme/ Cambium / Der Weiser / Netgear
181	Y-Strainer , Pot Strainer	Kirloskar /Advance/Audco /Zoloto / Hammer/ Emerald / Rapidcool
182	Any Other Material Not Mentioned Above	Shall Be Approved By The Engineer-In-Charge Before Use At Site.

Assistant Engineer (E) (P)
Mumbai-20 MUMBAI - I, CPWD,

Executive Engineer (E)
MUMBAI - I, CPWD,Mumbai-20

SCHEDULE OF WORK

Name of work :- Remodelling and shifting of power distribution system at Aayakar bhawan Churchgate Mumbai-400020. **S/H :-** Provision for Main LT panel at ground floor Aayakar Bhawan.

	Item Description	Qty	Unit	Rate	Rate after adding CI @13.59%	Amount
1	Supply, installation, testing and commissioning suitable size and depth not less than 1000 mm, floor-mounted, both side openable, front-access, cubicle-type, totally enclosed, dust- and vermin-proof Main LT Panel, with IP-42 degree of protection, conforming to IEC 61439 and the latest applicable IS/IEC standards. The panel shall be a factory-assembled, type-tested unit SCADA computable manufactured by an approved OEM/Channel partner/factory fabricated from minimum 2 mm thick CRCA sheets for framework and covers and 3 mm thick CRCA sheets for gland plates, complete with hinged and lockable doors, powder coating, suitable M.S. base frame of minimum 100 mm × 50 mm × 5 mm C-channel, provision for cable entry from top/bottom, finger-touch-proof shrouding and suitable cable/busbar alleys. The panel shall be complete with all necessary internal interconnections using minimum 2.5 sq. mm copper conductor FRLS control wiring with suitable copper lugs. The busbars shall be rectangular-section, high-conductivity aluminium, rated for 415 V, 3-phase, 2500 A continuous duty, insulated with colour-coded heat-shrinkable sleeves and supported on suitable SMC/DMC/PU supports, with two common copper earth bars of size 25 mm × 5 mm at the rear. The panel shall incorporate PLC-based automatic/manual changeover logic for incomers and bus-couplers, complete with necessary control MCBs, contactors, relays and interlocking arrangements. The enclosure shall undergo a suitable 9-tank surface treatment process followed by powder coating in an approved shade and shall be provided with NPDP-type gaskets. General Arrangement drawings, SLD and control schematics shall be submitted for approval before manufacturing. The complete work shall include all necessary accessories, internal wiring, earthing, testing, transportation, installation and commissioning, Complete in all respects as					

	per site requirements, including all minor civil and electrical works.					
	Incomer-1					
	2000A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set, Electrical Interlock with Buscoupler 1 & Incomer 1					
	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB					
	CT - 2000/5A, 10VA, Cl.-1 for Metering (Resin Cast)- 1 Set					
	Phase Indicating Lamps - R, Y, B (220-240V AC)-3 Nos.with 6A SP control C curve 10kA MCB					
	Indicating Lamps - ON, OFF, TRIP (220-240V AC)-3 Nos. with 6A SP control C curve 10kA MCB					
	Electrical Interlock with Incomer 2 : 1 Set					
	Spare Compartment for energy meter provision					
	Outgoing-1, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB-2 Nos					
	CT - 630/5A, 10VA, Cl.-1 for Metering (Resin Cast)-1 Set					
	Outgoing-2, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. &					

	Trip Contacts-1 No					
	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB-2 Nos					
	CT - 630/5A, 10VA, Cl.-1 for Metering (Resin Cast)-2 Set					
	Outgoing-3, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-4, 400A					
	400A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-5, 250A					
	250A FP MCCB (36kA) with built-in thermomagnetic release Based O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Buscoupler-1					
	2000A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set, with Electrical Interlock with Incomer 1 & Incomer 2					
	Incomer-2					
	2000A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set, Electrical Interlock with Buscoupler 1 & Incomer 2					
	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB					

	CT - 2000/5A, 10VA, Cl.-1 for Metering (Resin Cast)- 1 Set					
	Phase Indicating Lamps - R, Y, B (220-240V AC)-3 Nos.with 6A SP control C curve 10kA MCB					
	Indicating Lamps - ON, OFF, TRIP (220-240V AC)-3 Nos. with 6A SP control C curve 10kA MCB					
	Electrical Interlock with Incomer 2 : 1 Set					
	Spare Compartment for energy meter provision					
	Outgoing-1, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-2, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-3, 630A					
	630A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 Nos					
	Digital Ampere Meter & Volt Meter					
	Outgoing-4, 400A					
	400A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-5, 250A					
	250A FP MCCB (36kA) with built-in thermomagnetic release Based O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Buscoupler-2					
	2000A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set,with Electrical Interlock with Incomer 2 & Incomer 3					
	Incomer-3					
	2000A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set, Electrical Interlock with Buscoupler 2 & Incomer 3					

	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB					
	CT - 2000/5A, 10VA, Cl.-1 for Metering (Resin Cast)- 1 Set					
	Phase Indicating Lamps - R, Y, B (220-240V AC)-3 Nos.with 6A SP control C curve 10kA MCB					
	Indicating Lamps - ON, OFF, TRIP (220-240V AC)-3 Nos. with 6A SP control C curve 10kA MCB					
	Electrical Interlock with Incomer 2 : 1 Set					
	Spare Compartment for energy meter provision					
	Outgoing-1, 800A					
	800A FP EDO ACB (50 kA) with built-in Microprocessor Based Release (O/C, S/C & E/F) Protection, Aux. & Trip Contacts, Under Voltage Release - 1 Set					
	Digital multifunction meter with Bright LED display to view more than 25 parameters. VLL, VLN, A (Avg. & Phase Wise), F, Power: W, PF, VA (Avg. & Phase Wise) Energy: Wh, Positive energy accumulation even with CT polarity reversal with reverse lock programmable with RS-485 port 1 Set with 6A SP control C curve 10kA MCB-2 Nos					
	CT - 1 SET for Metering (Resin Cast)-1 Set					
	Outgoing-2, 400A					
	400A FP MCCB (36kA) with built-in Microprocessor Based Release (O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter					
	Outgoing-3, 250A					
	250A FP MCCB (36kA) with built-in thermomagnetic release Based O/C, S/C) Protection, ROM, Spreader link, Aux. & Trip Contacts-1 No					
	Digital Ampere Meter & Volt Meter	1	Job	56,11,135	56,11,135	56,11,135.00
2	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7	4	Set	15,004.00	17,043.00	68,172.00

	Meter long etc. with charcoal/ coke and salt as required.					
3	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	30	Mtr.	1,638.00	1,861.00	55,830.00
4	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	30	Mtr.	1,246.00	1,415.00	42,450.00
5	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	2000	Mtr.	50.00	57.00	1,14,000.00
6	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.					
6.1	Above 95 sq. mm and upto 185 sq. mm	180	Mtr.	80.00	91.00	16,380.00
6.2	Above 185 sq. mm and upto 400 sq. mm	720	Mtr.	146.00	166.00	1,19,520.00
7	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required					
7.1	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	30	Mtr.	138.00	157.00	4,710.00
7.2	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	80	Mtr.	226.00	257.00	20,560.00
	Total					60,52,757.00

Assistant Engineer (E) (P)
MUMBAI - I, CPWD, Mumbai-20

Executive Engineer (E)
MUMBAI - I, CPWD, Mumbai-20

Bid Sheet

Name of the Contractor					
Sl.No.	Name of component	Estimated cost	Percentage above or below the estimated cost	% in Figures	Total Cost
1	Electrical	60,52,757/-			-
	Grand Total	60,52,757/-			

**Executive Engineer (E)
MUMBAI - I, CPWD, Mumbai-20**

**केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन**

**No. DG/CON/ Maintenance 2023/18
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD**

VIDYUT BHAWAN, NEW DELHI

Dated: 27.02.2026

Subject: Modifications in General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Maintenance Works

The following modifications are made in the General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Maintenance Works.

Existing provision	Modified provision
General Rules & Directions 11 (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E' and within the period specified in Schedule F.	General Rules & Directions 11 (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee as mentioned in Schedule 'E' and within the period specified in Schedule F.
Clause 1 Performance Guarantee (i) The contractor shall submit an irrevocable Performance Guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.	Clause 1 Performance Guarantee (i) The contractor shall submit an irrevocable Performance Guarantee as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.
Sl. No. (ii) to (v)	No change
SCHEDULE 'E' Reference to General Conditions of contract Sl. No. (i)	SCHEDULE 'E' Reference to General Conditions of contract No change


D.P. Jindal
 EE (Contract)

