



Government of India
Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation

Central Water and Power Research Station

Khadakwasla, Pune – 411 024

BID DOCUMENT
(e-PROCUREMENT MODE)

FOR WORK OF

**Electrical Works in Isotope Hydrology Laboratory at CWPRS,
Pune-24**

[Two Envelope with e-Bidding]

INDEX

Name of work: Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24

NIT No.: 27/2026-27

Sl .	CONTENTS	PAGE NO.
1.	Information & Instruction for contractor for e-Tendering.	3 to 5
2.	Receipt of Deposition of Original EMD or Bid Security	6 to 6
3.	Instructions to Bidders (ITB)	7 to 11
4.	Item rate/Percentage rate/Lump-sum tender (form CPWD-	12 to 13
5.	Acceptance	14 to 14
6.	Schedule A to Schedule F	15 to 21
7.	Form of Earnest Money (Bank Guarantee)	22 to 25
8.	Particular Specifications	26 to 26
9.	Special Conditions	27 to 42
10.	List of Approved make of Materials	43 to 47
11.	Pre Contract Integrity Pact	48 to 53
12.	Schedule of work to be seen only	54 to 58
13.	Bill of Quantity to be filled by contractor	59 to 59
14.	Drawings	60 to 60

This N.I.T contains pages **1 to 60** only.

This N.I.T. has been approved for Rs. 4,18,118/- (Rupees four lakhs eighteen thousand one hundred and eighteen only)



Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Water & Power Research Station
Khadakwasla, Pune-411024

Telephones: 020-24103220

Email: cpc.cwprs-pune@gov.in

Web: www.cwprs.gov.in

e- Notice Invite Tender

No. CWPRS/CPPD/AAO(C)/27/2026-27/

Dated: 24/09/2026

The In-charge, Construction Procurement and Planning Division, CWPRS, Pune, on behalf of President of India, invites online e-tenders through the e-procurement portal <http://eprocure.gov.in/eprocure/app> (CPP Portal) under **single stage two bids system** of item rate/percentage rate/Lump Sum bids for work mentioned below from approved and eligible contractors of CPWD or those of appropriate list of State / Central Government Authorities of having experience of similar nature works.

NIT No.	27/2026-27
Name of the Work	Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24
Estimated Cost	Rs 4,18,118/-
Earnest Money Deposit (EMD)/ Bid Security	Amount: Rs 9,000/- Validity : 120 days
Date of release of Tender through e-procurement Portal http://eprocure.gov.in/eprocure/app	24/09/2026 at 18.00 hrs.
Last date for seeking clarification if any. (online only i.e through e-mail)	27/09/2026 up to 11:00 hrs
Start date and time for submission of bids through e-procurement Portal http://eprocure.gov.in/eprocure/app	27/09/2026 from 15:00 hrs
Last date & time for submission of online bid through e-procurement Portal http://eprocure.gov.in/eprocure/app	06/10/2026 up to 15.00 hrs. Server Time in IST
Date & time for opening of technical bid through e-procurement Portal http://eprocure.gov.in/eprocure/app	07/10/2026 at 15.00 hrs. Server Time in IST
Date & time for opening of financial bid (online) through e-procurement Portal http://eprocure.gov.in/eprocure/app	Financial bids of those firms who are technically qualified will be opened online immediately
Validity period of Bid	90 days from the date of opening of Technical Bid
Completion Period of Work	60 Days from date of issue of contract order
Officer Inviting Bids	The In-charge, Construction & Procurement Cell (CPPD), Central Water & Power Research Station, Khadakwasla, Pune-411024

1. The In-charge, **Construction Procurement and Planning Division (CPPD), CWPRS, Pune** invites bids electronically for construction of works detailed in the

2. 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 is in possession of all the documents required.
3. Eligibility of bid submission is C.P.W.D. as well as non C.P.W.D. bidders provided they produce definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed **similar works/Electrical works** of magnitude specified below **in the last 7 years ending last day of the bid submission: -**

4. Information and instructions for bidders posted on website shall form part of bid document.
5. The bid document consisting of specification, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website: www.cwprs.gov.in or www.eprocure.gov.in/eprocure/app free of cost.
6. The Bidding Document is available online and can be downloaded free of cost by logging on to the website <http://eprocure.gov.in/eprocure/app> or <http://www.cwprs.gov.in>. The bids are to be submitted online through the e-procurement portal only i.e. <http://eprocure.gov.in/eprocure/app>. Bids submitted manually will not be accepted. The bidders would be required to register in the website which is free of cost.
7. For submission of the Bid, the Bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorized by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: <http://eprocure.gov.in/eprocure/app>
8. The EMD should be submitted in the form of DD/FDR in favour of *“Pay and Accounts Officer”*, CWPRS, Pune payable at Pune with a validity period of 120 days from the date of opening of Technical Bids. If validity is less than the required period, the bid will be rejected.
9. **Exemption of Bid security /EMD** is allowed by producing NSIC certificate (physically) only under PP policy exempted for activities mentioned in the store details section of the said NSIC certificate. Other certificates are not allowed for seeking Bid Security/ EMD Exemption
10. Bids must be submitted on <http://eprocure.gov.in/eprocure/app> on or before **15.00** hours on **06/10/2026** and will be opened online on **07/10/2026** at **15.00** hours. If the office happens to be closed on the date of opening of the Bids as specified, the Bids will be opened on the next working day at the same time and venue. Any bid or modifications to bid received outside e-procurement system will not be considered. The electronic bidding system would not allow late submission of bids.
11. The bidders are required to submit specified **original documents** including original EMD/Bid Security in approved form with **the in-charge, Construction Procurement and Planning Division, CWPRS, Pune** at the address given below before

07/10/2026 at 15.00 hours, by registered post/speed post/courier or by hand, failing which the Bids will be declared non-responsive and **liable to be rejected**.

12. On opening date, the bidder can login and see the bid opening process. After opening the bids, he will receive the competitor bid sheets.
13. The bidder can upload documents in the form of PDF format only.
14. The contractor whose bid is accepted will also be required to furnish performance guarantee (PG) along with copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board (if applicable) and Programme Chart (Time and Progress) within the period specified in Schedule F i.e. **07 days** from the date of issue of letter of acceptance
15. The lowest bidder (L1) shall physically submit the certified copy of all scanned and uploaded documents as below within **five working days** after uploading of financial approval of the bid in the office of the In -Charge, CPPD, CWPRS, Pune. If the successive bidder fails to submit the certified copy of all uploaded documents at CWPRS within the specified period, his bid is liable to be rejected and he will be blacklisted for 3 years or more and his registration may also be liable to be cancelled by approving authority.

The following documents shall be scanned and uploaded **mandatorily** on or before the last date for online submission of bids failing which the bid will be treated as non-responsive and shall be rejected.

COVER – I (Technical Bid)

- i. **Demand Draft or FDR of any Schedule Bank against EMD, which is valid for a period of 120 days from the date of opening of Technical Bids.**
- ii. Electrical Contractor License and registration certificate
- iii. Authorized electrical degree/diploma electrical supervisor's license.
- iv. Certificate of Registration for GST.
- v. Latest GST return of the state in which the work is to be taken up, if already obtained by the bidder OR If the bidder has not obtained GST registration in the state in which the work is to be taken up, or as required by the GST authorities, then in such a case the bidder shall only scan and upload following undertaking with other bid documents.

"If work is awarded to me, I/We shall obtain GST registration certificate of the state, in which work is to be taken up, within one month from the date of receipt of award letter or before release of any payment by CWPRS, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and /or for any action taken by CWPRS or GST department in this regard"
- vi. Work Experience Certificate of similar nature is to be considered only.

COVER – II (Financial Bid)

- i. Price Schedule/ Bill of Quantities (BoQ)

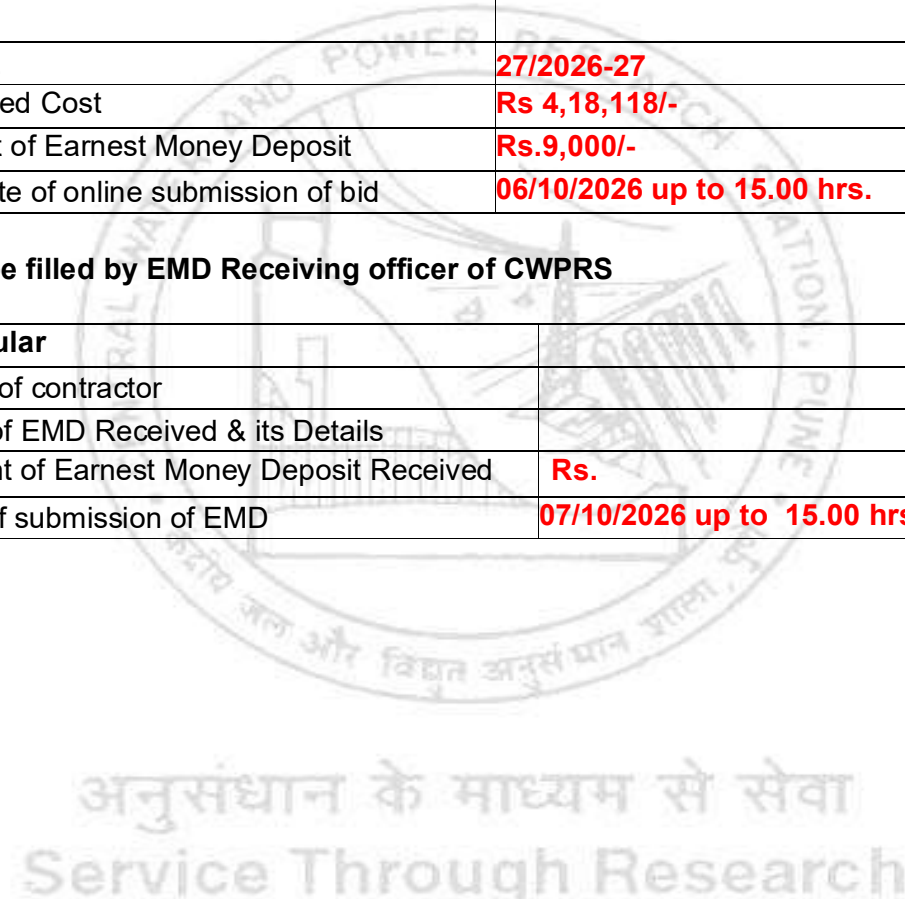
In- Charge, CPPD
CWPRS, Pune

Copy to : Notice Board, CPPD

Receipt of Deposition of Original EMD
(Receipt No...../date.....)

SN	Particular	Details
1	Name of work	Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24
2	NIT No.	27/2026-27
3	Estimated Cost	Rs 4,18,118/-
4	Amount of Earnest Money Deposit	Rs.9,000/-
5	Last date of online submission of bid	06/10/2026 up to 15.00 hrs.

Details to be filled by EMD Receiving officer of CWPRS

SN	Particular	
1	Name of contractor	
2	Form of EMD Received & its Details	
3	Amount of Earnest Money Deposit Received	Rs.
4	Date of submission of EMD	07/10/2026 up to 15.00 hrs
 Signature, Name and Designation of EMD Receiving officer of CWPRS (Along with office stamp)		

Government of India
Ministry of Jal Shakti
Department of Water Resources, RD & GR
CENTRAL WATER & POWER RESEARCH STATION
Khadakwasla, Pune 411024

Instructions to Bidders (ITB)

1. Item rate / percentage rate/ Lump-sum online tenders are invited on behalf of the President of India from approved and eligible contractors of C.P.W.D. or those of appropriate list of State / Central Government Authorities of similar works for the following work :

Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24

2. The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission/opening of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.
3. The work is estimated to cost **Rs 4,18,118/-**. This estimate, however, is given merely as a rough guide for this particular work.
4. The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.
5. For composite bid the bidders, besides indicating the percentage above/below the combined estimated cost put to bid, should also indicate the amount in word for each component separately. The eligibility of bidder will correspond to the combined estimated cost of different Components put to bid.
6. Eligibility of bid submission is C.P.W.D. as well as non C.P.W.D. bidders provided they produce definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: -

Three similar nature of works/ Electrical work of each of value 40% of estimated cost or two works of 60% cost or one work of 80% estimated cost in the last 7 years ending last day of the month previous to the one in which the tenders are invited.

7. Agreement shall be drawn with the successful bidder on prescribed Form No. CPWD-7/8 which is available on website <http://eprocure.gov.in/eprocure/app>. Bidder shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
8. The time allowed for carrying out the work will be **60 Days** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
9. The site for the work is available.

10. **The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted the contractor after award of work.**
11. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Site www.cwprs.gov.in or www.eprocure.gov.in / eprocure/app free of cost.
12. 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. 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 components) but before last time and date of submission of tender as notified.
13. Earnest Money in the form of Demand Draft or Fixed Deposit Receipt **(drawn in favour of Pay and Accounts Officer, CWPRS, Pune) or EMD exemption certificate as mentioned** shall be scanned and uploaded along with bid document in CPP Portal website within the period of bid submission.

Bidder should submit in original any one of following document mentioned below to the o/o The In -Charge, CPPD, CWPRS, Pune before bid opening date and time, otherwise bid will be treated as non-responsive and liable to reject.

- a. The original EMD is required to be deposited in the office of the In -Charge, CPPD, CWPRS, Pune-24 inviting bids within the specified period and the receipt of deposition of EMD to the bidder in a prescribed format issued by EMD receiving officer, CWPRS, Pune may also be uploaded with bid documents, failing which the bids will be declared non-responsive and liable to be **rejected**.
- b. **If claiming EMD exemption, producing NSIC certificate (physically) only under PP policy exempted for activities mentioned in the store details section of the said NSIC certificate.** The EMD Exemption certificate should be deposited to the Office of The In -Charge, CPPD, CWPRS, Pune -24 before bid opening date and time as specified in the bid document, failing which the Bids will be declared non-responsive and liable to be **rejected**.
14. The contractor shall be required to deposit performance guarantee, and invariably to comply the provision as mentioned in OM issued by DG, CPWD No.DG/CON/Maintenance 2023/18 dated 27.02.2026 (copy attached), in the form of an irrevocable bank guarantee bond of any scheduled bank or State Bank of India in accordance with the form prescribed or in the form of Govt. security, fixed deposit receipt etc., as in the case of recovery of security deposit within prescribed number of days of the issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period of prescribed number of days on written request of the contractor.
15. Copy of Enlistment Order and Certificate of work experience and other documents as specified in e-notice shall be scanned and uploaded to the www.eprocure.gov.in

/ eprocure/app (CPP Poratl) website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as

specified in e-notice shall have to be submitted by the lowest bidder only within five working days after uploading of financial approval of the bid.

16. The bid submitted shall become **invalid** if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not submit original EMD in approved form and not upload the same within a specified time & date with a validity period of 75 days from the date of opening of technical bids.
 - (iii) The bidder does not upload all the documents (including GST Registration) as stipulated in the bid document..
 - (iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of tender opening authority.
17. The contractor whose bid is accepted will also be required to furnish performance guarantee (PG) along with copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board (If applicable) and Programme Chart (Time and Progress) within the period specified in Schedule F i.e. **07 working days** from the date of issue of letter of acceptance and invariably compliance of OM issued by DG, CPWD No.DG/CON/Maintenance 2023/18 dated 27.02.2026 (copy attached)
18. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
19. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.
20. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.

21. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
22. The contractor shall not be permitted to bid for works in the CWPRS responsible for award and execution of contracts, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Director 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 CWPRS or CWPRS or in the Ministry of Jal Shakti, Dept. of Water Resources, River Development & Ganga Rejuvenation. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
23. 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 afore said before submission of the tender or engagement in the contractor's service.
24. The bid for the works shall remain open for acceptance for a period of **90 days** from the date of opening of Technical bids. If any bidder withdraw his bids before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the re-bidding process of the work.
25. This notice inviting bid shall form a part of the contract document. The successful bidder /contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
- a) The Notice Inviting bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.
26. The contract shall initially be for a period of **60 Days** from the date of the signing of agreement. However, strictly on the basis of the satisfactory performance it may be extended for a further at the sole discretion of the competent authority of CWPRS, Pune on the same terms and conditions.

27. The competent authority reserves the right to increase or decrease the quantity originally specified in Schedule of works, provided the variation does not exceed 100% and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Documents.

28. Terms of Payment

28.1 The Contract Price shall be paid, as specified in the Contract Agreement as under:

- (a) **The payment shall be made in the form of running account or first and final bill as per the actual work done at site subject to satisfactory completion and as per specifications of the schedule of works.**
- (b) **The payment shall be made within 30 days after receipt of the bill in the standard format from the requisition officer along with the all relevant documents in all respect or the Acceptance Certificate issued by the Purchaser's representative whichever is later.**
- (c) All other mandatory taxes will be deducted as per applicable rate from the bill
- (d) **The payments shall be made in Indian Rupees to the Bidder under this Contract.**

Government of India
Ministry of Jal Shakti
Department of Water Resources, RD & GR
CENTRAL WATER & POWER RESEARCH STATION
Khadakwasla, Pune - 411024

Item Rate/ Percentage rate/ Lump-sum Tender contract for works

(A) Tender/bid for the work of:

Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24

- (i) To be submitted online / uploaded by **15:00 Hours** on **06/10/2026**
- (ii) To be opened online at **15.00 Hours** on **07/10/2026** in the office of **The In - Charge, CPPD, CWPRS, KHADAKWASLA, Pune-24.**

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 **Sixty (60) days** from the due date of its opening and not to make any modification in its terms and conditions.

A sum of **Rs.9,000/-** in the form of Demand Draft / FDR issued by a scheduled bank as earnest money. I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in **Clause 12.2 and 12.3** of the tender form. Further, I/We

agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid. I/We shall be debarred for participation in the retendering process of the work.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall

not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Witness:

Signature of Contractor Address:

Postal Address Occupation:

ACCEPTANCE

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

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

- (a)
- (b)
- (c)

For & on behalf of President of India

Signature

Dated:

Designation

ROFORMA OF SCHEDULES

(Operative Schedules to be supplied separately to each intending Bidder)

SCHEDULE “A”

a) Schedule of work and bill of quantity (Enclosed)

SCHEDULE “B”

Schedule of materials to be issued to the contractor

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

SCHEDULE “C”

Tools and plants to be hired to the contractor: -

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

SCHEDULE “D”

Extra schedule for specific requirements/document for the work, if any: - Nil

SCHEDULE “E”

Reference to General conditions of contract	:	General Condition of Contract of 2023 CPWD form -7 modified and corrected up to date
Name of Work	:	Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24
Estimated cost of work	:	Rs 4,18,118/-
Earnest Money	:	Rs.9,000/-
Performance Guarantee	:	5% of tendered value or estimated cost put to tender (whichever is higher), and additional amount will mandatorily be deposited for more than 20% rebate over the ECPT (estimated cost put to tender) being an Abnormally Low Rate (ALR) Offer , as per the provision of OM issued by DG, CPWD No.DG/CON/Maintenance 2023/18 dated 27.02.2026 (copy attached).
Security Deposit	:	2.5% of Tender amount / Final Bill amount whichever is higher

SCHEDULE “F”

GENERAL RULES & DIRECTIONS

Officer inviting tender	:	The In -Charge, CPPD, CWPRS, Pune-24
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Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3: See below

DEFINITIONS:

Engineer -in- Charge:

Civil/Electrical/Mechanical/other specialized works	:	The In -Charge, CPPD, CWPRS, Pune-24
Authority	:	Director, CWPRS, Pune-24
Percentage on cost of materials and Labour to cover all overheads and profits	:	15%

Standard Schedule of Rates:

Civil/Electrical/Mechanical/other specialized works	:	Delhi Schedule of Rates- 2025 (Electrical) with Up to date Correction slips or Market rates
Department	:	CWPRS, Pune - 24
Standard CPWD Contract Form	:	GCC-2023, CPWD Form 7 modified & Corrected up to last date of submission of online bid

Clause 1

i	Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of Notification of award/ letter of acceptance	:	7 Days
ii	Maximum allowable extension with late fee @0.1% Per day of Performance Guarantee amount provided in (i) above:	:	15 Days

Clause 2

Authority for fixing compensation under Clause- 2	:	Director, CWPRS, Pune
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Clause 2A

Whether Clause 2A shall be applicable	:	No
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Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start	:	15 Days
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Table of Mile stone(s) : as per the clause no 15 of NIT

Time allowed for execution of work : 60 Days

Authority to decide:

i	Extension of time	:	The In -Charge, CPPD or Director , CWPRS, Pune-24
ii	Rescheduling of mile-stones	:	The In -Charge, CPPD or Director , CWPRS, Pune-24
iii	Shifting of date of start in case delay in handing over of site	:	The In -Charge, CPPD or Director , CWPRS, Pune-24

Clause 6

Clause applicable – (6 or 6A) : 6

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 Applicable
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Clause 7A : Not Applicable

Clause 10 A

List of testing equipment to be provided by the contractor at site	:	As per Purchaser decisions
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Clause 10 B (ii)

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

Component of labour expressed as percent of value of work	:	30%
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Clause 10CA

Materials Covered under this clause	Nearest Material (other than cement, Reinforcement bars and structural Steel) for which All India Wholesale Price Index to be followed.	Base Price of all the materials covered under clause 10CA*	Corresponding Period
Cement	Cement (OPC) – 43/53 Grade	As applicable	Prevailing market rate
Steel	Steel (Bars / Rods)	NA	NA

Clause 10CC: **Not Applicable****Clause 11**

Specifications to be followed For execution of work	:	CPWD Specification 2019, Vol. I to II with up-to-date correction slips
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Clause 12

Type of Work	:	original Work/Maintenance work
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Clause 12.2 & 12.3

Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building /other work	:	As per CPWD Works Manual 2024 and modified orders/OM issued by CPWD time-to-time
Deviation limit beyond which clauses 12.2 & 12.3 shall apply for foundation work. (except items mentioned in earthwork sub head in DSR & related items.	:	
Deviation limit for items mentioned in earth work subhead of DSR & related items	:	

Clause 16

Competent Authority for deciding reduced rates	:	Director, CWPRS, Pune
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Clause 18

List of mandatory machinery, tools and plants to be deployed by the contractor at site:	:	As per requirement
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Clause 25**Constitution of Dispute Redressal Committee:**

For claims below Rs 25 lakhs	For claims above Rs 25 lakhs
The In -Charge, CPPD, CWPRS, Pune-	Director ,CWPRS, Pune

Clause 31/31A: The contractor shall make his own arrangement of water as per clause-31.

Clause 36 (i) : Requirement of Technical Representative (R) & recovery rate
(cost of work more than Rs.15 Lakhs to Rs.1.5 Crore only)

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/Technical representative)	Minimum experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(i) Per person	
						Figures (Per person)	Words (Per person)
1	Graduate Engineer or Diploma Engineer	Electrical	Electrical Principal Technical Representative (Project Planning / site / billing Engineer)	2 years	1	Rs.15000/- P.M.	Rupees Fifteen thousand only per month
				5 years	1		

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% requirement of degree engineers.

Similar nature of work for this clause means "RCC framed structure building including services".

Clause 42

i	Schedule / statements for determining theoretical quantity of cement and bitumen	:	Delhi Schedule of rates 2025 with up-to-date correction slips
ii	Variations permissible on theoretical Quantities		
	(a) Cement for works with estimated cost put to tender not more than Rs. 5 lakhs	:	3% plus/minus
	(b) for works with estimated cost put to tender more than Rs. 5 lakhs	:	2% plus/minus
	(c) Bitumen for all works	:	2.5% plus only & nil on minus side
	(d) Steel Reinforcement and structural steel sections for each diameter, section and category	:	2% plus/minus

	<i>(e) All other materials</i>	:	NIL
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RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sr. Nos.	Description of Item	Rate in figures and works at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond the permissible variation
1	Cement	NA	As applicable as per prevailing market rate
2	Steel Reinforcement	NA	NA

CEMENT SHEET

Consumption of Cement: **NIL**

{Cement should be ISI clarification mark, 43/53 grade (Confirming IS 8112) of 50 kg bags (each) procured by contractor}

FORM OF PERFORMANCE SECURITY
(GUARANTEE) BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between and(hereinafter called "the said Contractor(s)") for the work (hereafter called "the said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs.....(Rupees) only as a security / guarantee form the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

We (hereinafter referred to as "the Bank")

(Indicate the name of the Bank)

hereby undertake to pay to the Government an amount not exceeding Rs..... (Rupees.....only) on demand by the Government.

2. We do hereby undertake to pay the amounts due

(Indicate the name of the Bank)

and payable under this Guarantee without any demure, 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(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an Amount not exceeding Rs.....(Rupees.....only)

3. We, the said bank further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We further agree that the

(Indicate the name of the Bank)

guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.

5. Wefurther agree with the

*(Indicate the name of the
Bank)*

Government that the Government shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement to extend time of performance by the said contractor(s) from

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

6. This guarantee will not be discharged due to the change in the constitution of the Bank of the Contractor(s).

7. Welastly undertake not to

(Indicate the name of the Bank)

revoke this guarantee except with the previous consent of the Government in writing.

8. This guarantee shall be valid up to Unless extended on demand by Government.

Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs.(Rupeesonly) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the day of for(indicate the name of bank).

केन्द्रीय लोक निर्माण विभाग
कार्यालय झापन

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	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.	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	Clause 1
Performance Guarantee	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.	(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'	SCHEDULE 'E'
Reference to General Conditions of contract	Reference to General Conditions of contract
Sl. No. (i)	No change

PARTICULAR SPECIFICATIONS

- 1.0 Unless otherwise specified, CPWD Specifications 2009 Volume 1 & 2 with upto date correction slips shall be followed in general. Any additional item of work if taken up subsequently shall also conform to the relevant CPWD specifications mentioned above.
- 1.1 Wherever any reference to any Bureau of Indian Standard Specifications occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued there to or revisions thereof, if any, up to the date of receipt of tenders.
- 1.2 Unless otherwise specified in the schedule of quantities, the rates for all items or work shall be considered as inclusive of pumping out or bailing out of water, if required for which no extra payment will be made. This will include water encountered from any source such as rains, floods, sub soil water table being high and/or due to any other cause whatsoever.
- 1.3 The work shall be executed and measured as per metric dimensions given in the schedule of quantities, drawings etc. (F.P.S. units wherever indicated are for guidance only).
- 2.0 The following modifications to the above specifications and some additional specifications shall however apply.
- 2.1 The rates for all items of work, shall unless clearly specified otherwise, include cost of all labour, materials and other inputs involved in the execution of the item.
- 3.0 EMBEDDING OF PIPES, CONDUITS ETC.**
- 3.1 The brick work for the portions of the external wall or W.C. through which pipes are taken, will be done after the pipes are fixed as far as practicable.
- 3.2 All crossings, embedment etc. in wall and floors for water supply, drainage and sanitary pipes, fittings etc. shall be provided as per previously prepared detailed drawings for individual walls and floors so as to avoid cuttings of brick work and floors. All such areas shall be made good during finishing and nothing extra shall be paid for this.
- 4.0 WATER SUPPLY, SANITARY FITTINGS, PAINTS AND OTHER MATERIALS**
- 4.1 All the materials required to be tested shall be tested as per provisions of the relevant ISI codes. Should there be any difference between acceptance CRITERIA given in ISI Codes, CPWD Specifications and special conditions, the acceptance CRITERIA shall be in the following order of preference:
 - i. Special conditions.
 - ii. C.P.W.D. Specifications.
 - lii. BIS Codes.
- 4.2.1 The Contractor's rate for the items involving the use of materials shall be deemed to cover the cost of samples.
- 4.2.2 The Sanitary pipe and G.I. pipe wherever, necessary shall be fixed to RCC columns, beams etc. with raw plugs and nothing extra shall be paid on this account.

SPECIAL CONDITIONS

- 1.1 The intending tenderers should visit the site and satisfy themselves about the site conditions, soil strata, availability of water, availability of materials, their transportation, traffic restrictions, local bye-laws & regulations, local conditions and availability of services required for execution of work. No claim whatsoever shall be entertained for lack of such information which the tenderer is expected to have.
- 1.2 The intending tenderers are requested to go through the architectural drawings mentioned in the tender documents. These drawings are available in the office of the **The In -Charge, CPPD, CWPRS, Pune.** The architectural drawings show the type of building to be constructed, number of Floors and other architectural features. No claim whatsoever shall be entertained for lack of information on this account, which the tenderer is expected to have.
- 1.3. The rate for all items of work shall unless clearly specified otherwise either in the Schedule of items or in the CPWD specifications include cost of all labour, materials and other inputs involved in the execution of the item.
- 1.4. Rate for every work to be done under this contract shall be for all lifts, leads, heights, depths, lengths and widths except when specially mentioned otherwise either in the Schedule of Items or in the CPWD Specifications and nothing extra will be paid on this account.
- 1.5. Other agencies will also be executing simultaneously the works like electrification, horticulture, external services and other building works for the same project along with this work in particular. The contractor shall afford necessary facilities for the same. No claim in this respect shall be entertained. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work, pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as many be required for Electrical, Sanitary, Air-conditioning, Fire Fighting, Public Address System, Telephone System, C.C.T.V. System etc. and nothing extra shall be paid for the same.
- 1.6 The contractor shall make his own arrangements for obtaining electric connections, if required and make necessary payments directly to the department concerned. The tender should not quote unnecessary conditions contradicting the general conditions and particular specifications given in this tender, as such conditions, apart from being not agreed to can lead to rejection of the tender.
- 1.7 The work shall be executed and measured as per metric dimensions given in the Schedule of quantities, drawings etc. The F.P.S. units wherever indicated are for guidance only.
- 1.8. Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of receipt of tenders.
- 1.9 The contractor will have to work according to the program of work decided by the Engineer-in-Charge, for which purpose, the contractor should submit a tentative program of the work within 15 days from the date of start of the work.
- 2.0 The contractor shall take instructions from the Engineer-in-charge for staking of materials in any place. No excavated earth or building material shall be stacked on areas where other buildings, roads, services or compound walls are to be constructed.
- 3.0 The work on item of internal finishing must be started as soon as the structure is completed.

- 4.0 Unless otherwise provided in the Schedule of quantities the rate tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths to the building and nothings extra shall be payable to him on this account. Payment for centering, shuttering, however if required to be done for floor height greater than 3.5 m shall be admissible at rates arrived at, in accordance with clause 12 of the agreement if not already specified.
- 5.0 The work shall be carried out in accordance with the architectural drawings and structural drawings. The structural and architectural drawings, shall have to be properly co-related before executing the work. In case of any difference noticed between architectural and structural drawings, final decision, in writing of the Engineer-in-charge shall be obtained by the contractor. So also in case of any discrepancy in the item given in the schedule of quantities appended with the tender and architectural drawings related to the relevant items, the former shall prevail unless and otherwise given in writing by the Engineer-in-charge. Samples shall be prepared before starting particular items of work for prior approval of the Engineer-in-charge and nothing extra will be payable on this account.
- 6.0 All the materials to be used on works shall bear BIS certification mark unless otherwise the make is specified in the item or special conditions appended with this tender document. In case BIS mark materials or the materials mentioned in the tender documents are not available, as per opinion of Engineer-in-charge, which shall be final, the material to be used shall conform to CPWD specifications applicable in the tender or BIS Code. In such case Engineer-in-charge shall satisfy himself about the quality of such material and give his approval in writing. Only articles classified as first quality by the manufacturers shall be used unless otherwise specified. All material not having ISI mark shall be used as per relevant BIS specifications. The Engineer-in-charge may relax the condition regarding testing of the quality of the materials required for the work, if small. In all cases of use of ISI marked materials proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the entire satisfaction of Engineer-in-charge.
- 7.0 All materials equivalent to the one specified should be got approved by the Engineer-in-charge before using the said materials in the work.
- 8.0 For form work use of solid timber and products involving solid timber shall not be permitted.
- 91.F. The contractor shall be responsible for the protection of sanitary and water supply fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.
- 10.0 Any damage to work resulting from rains or from any other cause until the work is taken over by Department after completion of work shall be made good by the contractor at his own cost.
- 11.0 Some restrictions may be imposed by the security staff etc. on the working and for movement of labour, materials etc. the contractor shall be bound to follow all such restriction/instructions and nothing extra shall be payable on this account. However suitable extension of time can be given for such hindrance cause to work on such account.
- 12.0 The contractor shall comply with provision any Government acts which relate to the work and to the regulations and laws of any local authorities. The contractor shall give all notices required by the said acts, laws etc., and pay all fees payable to such authorities and allow for those contingencies, cost of restorations etc. and all other fees payable to the local authorities.

- 13.1 Tendered rates are inclusive of all taxes and levies payable under the respective statutes.
- 13.2 Rates quoted shall be inclusive of the GST if any by Central/State Government of Maharashtra Act No. XXXVI-89, an act to levy and collect the tax on the transfer of property in goods involved in the execution of works contract in the State of Maharashtra and nothing extra will be payable on that account.
- 14.0 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to Bye-laws and specifications of the Municipal Body/ Corporation where CPWD Specifications are not available. The work of water supply, internal sanitary installation and drainage etc. shall be carried out as per local Municipal Corporation or such local body bye-laws. The contractor shall get the materials (fixtures/fittings) tested by the Municipal body / Corporation authorities wherever required at his own cost and after completion of work shall produce necessary completion certificates from such authorities.
- 14.1 The contractor shall comply with proper and legal orders and directions of the local or public authority of municipality and abide by the rules and regulations and pay all fees and charges, which he may be liable.
- 15.0 The contractor shall give a performance test of the entire installation (S) as per standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
- 16.0 The tenderer should not quote unnecessary conditions contradicting the general conditions and particular specifications given in this tender, as such conditions apart from being not agreed to, can lead to rejection of the tender. Tenders with any condition including that of Conditional Rebate shall be rejected forthwith.
- 16.1 The contractor shall make his own arrangements for obtaining electric connections, if required and make necessary payments directly to the department concerned.
- 17.0 **BRIEF WORDING OF ITEMS**
- 17.1 For the purpose of recording measurements and preparing running account bills, the underlined portions of the nomenclature of items included in the schedule of quantities shall be adopted as the abbreviated nomenclature of the particular item. The abbreviated nomenclature shall be taken to cover all the materials and operations as per the complete nomenclature of the relevant item in the agreement and relevant specifications. In the case of items for which abbreviated nomenclature is not indicated in the schedule of quantities, the full nomenclature shall be reproduced while recording measurements and preparing the bills.
- Also following abbreviations may be adopted.
- (A) P/L for : Providing and Laying.
- (B) P/F for : Providing and fixing.
- (C) C.C. for : Cement Concrete.
- (D) C.M. for : Cement Mortar.
- 17.2 In case of extra/substituted items of work for which brief wording is not provided in the agreement, the full nomenclature of the item shall be reproduced in the measurement books and bills forms of running account bills.
- 17.3 The full nomenclature of the items shall be adopted in preparing abstract of final bill in the measurement books and also in the forms for final bills

18. **EARTHING AND LIGHTNING PROTECTION:**

GENERAL:

All non-live metal parts of the electrical system and equipment shall be earthed with suitable size of earth conductors. 2 distinct earthing shall be provided for all 3-phase equipment. Earthing shall be in confirming with IS 3043 and Lightning protection shall be with IS 2309. Earth resistance of individual earth station shall not exceed 5 Ω and overall resistance shall be less than 1 Ω at all times. Earth resistance shall be taken with earth meggers for all earth points. All earth points shall be located 2.0mtrs away from the building and there will be a minimum distance of 3.0 meters between 2 earth points. All earth stations shall be identified with number and using painted board.

EARTH STATION:

Pipe Electrode Earthing: 50 mm dia. Class B GI Pipe 3.0 mtrs long tapered at bottom and 12mm dia holes at 75mm c/c on all sides for bottom 2.0mtrs with top watering arrangement shall form earth electrode. The electrode has to be buried vertical in ground.

Plate Earthing: 600 x 600 x 6mm GI or 600 x 600 x 3mm Copper Plate with 50 mm dia. GI watering pipe with funnel at top. The construction shall be as per details given in the Latest edition of IS 3043.

Incase of rocky strata, Bore earthing stations with 150mm bore and 100mm class B GI pipe shall be done. Depth of bore earthing shall be 6.0 mtr minimum. Soil resistivity test shall be done for deciding depth if necessary.

Bentonite or earth powder slurry shall be put along with pipe in the bore.

MAINTENANCE FREE EARTHING:

Generally pipe-in-pipe technology shall be used with inner pipe and outer pipe of different sizes and lengths as mentioned below. These pipe electrodes shall be hot dip galvanized to enhance life.

The annular space between these pipes & inner pipe shall be filled with adequate special crystalline compound material which shall resists the corrosion of inner pipe electrode. Area surrounding outer pipe shall be filled with back fill compound mixed with the soil. Depth & size of pit shall suit to the electrode length. Soil resistivity test shall be done if necessary for deciding depth.

Pipe Electrode Details.				Galvanizing (Micron)min
Category	Inner pipe dia (min)	Outer pipe dia (min)	Length	
T39	40mm dia	80mm dia	3000 mm or as specified	80 – 100
T19	25mm dia	50mm dia	3000 mm or as specified	80 - 100

MASONRY CHAMBER:

Brick masonry chamber of size 450 x 450 x 450mm minimum (internal clear imensions) with cast iron cover and frame with top finished at ground level shall be provided for watering and test link access.

ARTIFICIAL TREATMENT:

In case of rocky soil, hard murum soil resistance is very high. For getting proper earthing alternate layers of charcoal and salt are to be provided, for entire height of earth electrode with 300mm over all cover. Black cotton soil can be used for refilling the earth points in rocky strata.

EARTHING CONDUCTORS:

Earthing conductor size shall depend on the loads and defined fault conditions. The general guide lines are as listed below –

a)	Main H.T. & L.T. earth conductor, Transformer 2000 KVA and above. Up to 1600 KVA.	: 75 x 10 MM GI strip. : 50 x 6 mm GI Strip
b)	D. G. set neutral 1500 KVA and above. up to 1250 KVA	: 75 x 10 mm Cu Strip : 75 x 6 MM Cu. strip.
c)	Grid earth conductors	: 32 x 6 mm GI strip.
d)	Main Switch boards/Power Distribution boards	: 50 x 6 mm GI strip.
e)	Other switch board & Motors including & above 50 HP / 100 Amps up to 400 Amps	: 25 x 6 mm GI strip.
f)	Motors from 20HP to 50 HP	25 x 6 mm GI strip.
	Motors above 10 HP upto 20 HP Local PDB's	: 25 x 3 mm GI strip.
g)	Power Points 63A, LDB'S	: 8 SWG GI Wire / 10 SWG Cu. wire.
h)	Lightning conductors	: 25 x 3 mm GI strip.
i)	Motors below 10 HP & Power points upto 32A	10 SWG GI Wire / 12 SWG Cu Wire.
j)	Metering Kiosk	: 25 x 3 mm Cu strip
k)	UPS earthing	: Cu. Flexible wire as per rating.

The earthing conductors shall be connected with either riveted or bolted joints with at least 2 rivets/bolts. The joints shall be painted with bitumen paint.

Earthing strips for lightning protection shall be run on parapet walls of outer periphery of building and outer periphery of highest structure for horizontal runs and on unapproachable vertical walls up to disconnecting box fixed at 1.0 mtr height above ground level. Lightning conductor shall be connected to earth station directly and separate 25x6 mm strip from earth station is to be connected to grid earthing. The lightning conductor/s shall be fixed at appropriate highest location on the building / structure. Separate earth pit shall be provided for each lightning conductor.

GENERAL SPECIFICATION FOR EARLY STREAMER (LIGHTNING ARRESTOR):**AIR TERMINATION UNIT:**

The air-termination unit should be a Controlled Early Streamer Emission (CESE) lightning conductor with a central pick up rod made of tinned copper. A full electrical continuity between the tip and the earth point should be ensured. The unit shall be fully autonomous and collect energy through a lower series of electrodes. It shall be equipped with an electronic device to detect the lightning and trigger a controlled streamer (3KV and 20A minimum) within few micro seconds. Air Termination shall be manufactured as per NFC 17-102. A dedicated tester or remote testing facility should be available for maintenance purpose. Performance of the unit should have been tested in High Voltage Laboratory (CPRI) as well as in real lightning conditions.

AIR TERMINATION SUPPORT:

The Air Termination shall be fixed at the top of a GI or FRP elevation pole so as to be at least 2 meters above the top of the structure to be protected. The elevation pole should have a dia of 35mm to 50mm with a thread at the top to fix the unit. Guy wires may be used in order to ensure the stability of the installation.

LIGHTNING EVENT COUNTER:

Design and Supply of a lightning event counter electronically controlled shall be done. It shall activate one registration for 1000A to 100kA for a 8/20 micro second peak current. The item should have necessary High Voltage Laboratory (CPRI) test certificate.

EARTHING SPECIFICATION FOR EARLY STREAMER:

Each down conductor should be connected to its own Tripod Earthing termination for a lower resistance value. The tripod earthing shall be made of 3 copper bonded earth rods, 2m long minimum, each one connected to a horizontal conductor (25x3 copper strip) with a 2m length minimum. The horizontal conductors shall be connected to the down conductor with an earth clamp housed in a manhole in order to facilitate the inspection. The earth termination should be connected to the electrical earth of the building with a Copper cable (16mm²) or Aluminium cable (25mm²) in order to achieve an equipotential network as per IEC 62305 standard. The earthing station details shall be as mentioned in previous point (F 5.5)

19. M.V. PANELS & DISTRIBUTION BOARDS**CONSTRUCTION :**

The panels shall be free standing, floor mounting compartmentalized cubicle type panels with framed structure and bottom channel frame of suitable section. The frame structure shall be rolled/folded sheet section of 2.0 mm thick sheet. Partitions shall be 1.6mm thick. Doors and gland plates shall be 2.0 mm thick. The panel shall be dust and vermin proof with neoprene gasketing. All doors shall be provided with concealed hinges, necessary Earthing arrangement and shall be provided with bracings wherever required to avoid deformation. Easily openable door locks with common key shall be provided for all doors including alleys. Bolts should not be provided for fixing doors except for busbar chambers.

Following minimum clearances shall be adhered to while such designs.

1. Between phases	:	35 mm
2. Between phase & neutral	:	25 mm
3. Between phase & earth	:	25 mm
4. Between neutral & earth	:	25 mm

All installation materials used for supports shall be non-hygroscopic duly treated to withstand high humidity, tropical conditions and stresses due to temperature variations, and fault currents.

The panels shall be so designed to provide sufficient space for cable alleys for incoming and outgoing cables. Removable gland plates shall be provided at bottom or as required & top covers of panel shall accommodate BUSDUCTS. All live parts shall be shrouded with insulating Board covers. Compartment sizes shall be adequate for easy maintenance. All terminations & joints shall be easily accessible. The operating heights of switchgear shall not be less than 400 mm and shall not exceed 1800 mm.

20% spare terminals shall be provided in both power cable and control terminal blocks. The panel design and construction shall be suitable for extension on both sides.

Degree of protection unless otherwise specified shall be IP 52. Floor mounted panels will be provided with 75 mm channel frame with panel finish.

Adequate care shall be taken in panel design for heat dissipation.

CLEANING AND PAINTING :

The fabricated sections shall be thoroughly cleaned by 7-tank process, which include alkaline degreasing, cold water rinsing, acid pickling, water rinsing, phosphate and passivation. Panels shall then be powder coated unless otherwise specified including corrosion resistance treatment. **No alternative treatment or part treatment other than 7-tank process is acceptable.**

In case enamel painting is to be done corrosion resistance treatment shall be done under controlled conditions and then two coats of stoving enamel paint of approved shades shall be given. The paint / powder coating shade shall be RAL 7032 unless otherwise specified.

BUSBARS & INTERCONNECTIONS:

The bus bars unless otherwise specified shall be of high conductivity aluminum alloy of grade E 91 E as per IS 5082. The busbars shall be provided with suitable SMC bus bar support suitable for withstanding required fault levels. The bus bar shall also withstand above fault level without permanent deterioration for all main panels. The connections shall be securely done with adequate size of plated hardware, plane and spring washer sets. The inter connections shall be made with solid busbars as far as possible. Busbars shall be provided with colour coded Heat shrinkable PVC sleeves. Arrangement of Busbars and busbar alley shall be such that busbar can be easily maintained without disturbing the assembly.

In case interconnections are done with wires, all wires shall be 1100V grade & shall be terminated with suitable lugs. Suitable heavy-duty terminals shall be provided for all such incoming & outgoing connections. All earthing bus bar shall be generally 25x6 mm strip minimum and shall be provided at appropriate location through out length of panel extending out for external earth connection. All non-live metal parts shall be properly earthed.

Busbar Design Parameter

- a) Current Density: Aluminum 1.0 Amp/Sq.mm
Copper 1.5 Amps/ Sq.mm
- b) Temperature rise Limit 85°C

SWITCHGEAR :

The switchgear used in panels shall be pertaining to relevant IS standards and shall be from the approval list. The terminals shall be suitable for accepting Al busbars and Al cables of relevant sizes suiting the switchgear rating. The metal parts other than live contacts shall be treated against corrosion. All switches shall be with door interlocking provision. Breaking capacities (ICS) of switchgear shall be suitable for the fault levels indicated for respective panels (ICS=ICU). All switchgear shall be type tested for sequence 2 & sequence 3.

AIR CIRCUIT BREAKERS:

All ACB's unless otherwise specified shall be draw out type. All ACB with same ratings / frame sizes shall be interchangeable. All ACB's unless otherwise specified shall be provided with built in microprocessor based EF / OC release with variable settings and fault indications, shunt release, Auxiliary contact block, manual operating handle, Positive position indication on facia. All incomer ACB's on Main panel unless otherwise specified shall be 4 poles EDO type & All Breaker's in Main Panel & PDB incoming should be provided Microprocessor Based EF/OC Release, with LSIG protection. All other panel ACB's should be with microprocessor based protection release. Basic Display and communication provision should be possible to add on and same shall be provided only if specifically asked for. All CB's shall have position micro switches, ready to close contact provision as standard & as per attached chart. Necessary wiring shall be done for all accessories & potential free contacts up to the terminal block. Specific requirement of switchgear for BMS purpose shall be referred.

MCCB:

All MCCB's shall be universal mounting line load interchangeable and with door interlock & handle. All MCCB's on Sub Distribution Panels shall be provided with variable setting Thermo magnetic & all MCCBs with microprocessor based release on Main LT Panel & PDB/sub panel incomer only. Door handles will be provided with pad locking arrangement. All MCCB's on Main panel shall be provided with shunt release and Auxiliary contact block. All MCCB's shall be provided with suitable spreader links on both sided for bus bar and cable connections. All MCCB's used, as incomers to PDB's and sub panels, MLDB shall be

provided with shunt release & Aux contact Block. MCCB's shall have clear ON, OFF & TRIP positions. Specific requirement of switchgear for BMS purpose shall be referred.

SWITCH DISCONNECTOR FUSES:

These will be used only if specified and shall be with Door inter lock, handle with pad locking arrangement. Phase separators shall be provided on both sides. Clear OFF / ON position indicators shall be provide on handle. Fuses used shall be HRC only and shall be with 80 KA breaking capacity. HRC fuses shall have indication for healthy / blown fuse.

MCB's:

All MCB's used in panels & DB's shall be din rail mounted, 10 KA Breaking capacity, 'C' characteristic unless others wise specified. Terminals of MCB's shall be suitable for connecting proper size Cu / Al cables with lugs. Multiple MCB's shall be provided with common fixed operating handle.

PROTECTION:

Specific External protection relays shall be provided if required by statutory requirements, approvals or functional requirements. Necessary CT's /PT's etc shall also be included in the scope.

MEASURING INSTRUMENTS AND INSTRUMENT TRANSFORMER :

All meters on panels unless other wise specified shall be digital meters either individual or combined with minimum class 1 accuracy and will be calibrated. These will be flush mounting type. Direct reading instruments shall be in confirmation with IS 1248 and of accuracy class 1.0. All analog meters wherever used shall be flushed mounting type with minimum 96 x 96mm size and in dust proof enclosures. The meters shall have white dials with black scales. All meters shall have sealing arrangement and zero adjustment screw from outside. Voltmeters and ammeters shall be moving iron type with suitable selector switches and protective MCB's for potential circuits.

The current transformers shall be single pole wire wound resin cast accuracy class 1.0 for metering and 5p for protection. Separate CT's shall be provided for metering and protection. The polarities shall be prominently marked CT circuits shall be wired with 2.5 sq. mm. multistrand copper wires. CT's shall not be kept open and terminal-shortening arrangement shall be provided.

PT's wherever specified shall be of appropriate voltage class and 100 VA Burden.

All Main & DG incomers shall be provided with Digital LOAD MANAGERS unless otherwise specified instead of regular meters. LOAD MANAGERS shall provide minimum voltages, currents, KW, KVA, KWH, KVA Rh, frequency, Cos Ø % harmonics, Maximum demand KVA reading with scrolling. These will be with RS 485 port for down loading data. LOAD MANAGER should be able to store last 8 days data, which can be downloaded. Necessary software for Load Manager shall be provided.

INDICATION AND CONTROL :

The control switches shall be rotary type with suitable isolation transformer provided for control supply. Control supply bus shall be provided wherever necessary. Indicating lamps shall be LED Type only with translucent lamp covers. Push buttons shall be momentary contact type with suitable colour code and shall be fitted with integral marker plate. The control wiring shall be with 1.5sq.mm. multistrand 1100V gr copper wire except CT Circuit which shall be with 2.5 sq. mm. wires. Identification ferrules and colour coding shall be used for all wire. MCB's for protection shall be provided wherever required. The control wires shall be bunched and dressed properly and shall not be left hanging. Control MCB's shall be provided in all potential circuits.

DISTRIBUTION BOARDS :

The distribution boards shall generally be as per panel specifications above. All DB's shall be MCB type suitable for concealed/surface installation. DB's shall be ready-made vertical type with hinged secured front covers, with double door arrangement top and bottom knockouts, earthing studs & circuit marking provisions. Top & bottom plates shall be removable as far as possible.

INSPECTION AND TESTING :

Inspection and shop testing for all panels as per IS Standard shall be offered to consultant/owner's representatives. The tests to be done shall include:

- Physical checking.
- Megger/insulation resistance, (1000V Megger).
- H.V. test.
- Functional tests including control and interlock functions, Automatic operation simulation etc.
- Any such tests required by local authorities, Electricity Boards and for complying statutory requirements.

APFC PANEL & RELAY :

APFC panel shall be so designed to accommodate all components including capacitors. Adequate ventilation provision shall be made in panel design. Forced ventilation shall be considered for capacitor compartment if necessary.

RELAY : Relay forms important component of APFC system. Relay shall be microprocessor based, self-diagnostic with capacity to function properly at low loads up to 10% of the rated loads and should be reliable & fail safe. Relay shall have digital power factor indicator and facility to set target P.F. Relay should be able to use and select different ratings of capacitors steps connected to achieve target power factor. Relay should be able to identify & isolate faulty capacitor feeder. Relay shall have clear indication on its function for

- Control Power availability
- Lag / Lead power factor.
- No. of ways utilized at any particular moment.

Relay shall also have facility for manual operation and Auto / Manual ,delay function for each way.

CAPACITOR :

Capacitor shall be 3 Phase Delta connected capacitor banks of appropriate ratings either APP or Mix-dielectric type only. Individual capacitor shall have protection and shall have provision for proper connector box & connector for connecting external cable.

Capacitors should be suitable to any kind of loads and load variation & should be able to sustain high harmonic distortion.

Capacitors shall be of low loss design with watt loss less than 0.5 W / KVAR and guarantee capacitance loss of less than 10% over life period. In rush current limiting arrangement shall be provided to limit inrush current to 1.7 (line current) (In). Capacitors when provided with series reactors to provide filters shall be of appropriate higher withstand voltage depending on % reactance. Also the KVAR indicated in the panel SLD shall be effective KVAR at 415 volts.

SPECIFICATION FOR TVSS:

	अनुसंधान	Low exposure-branch panel/eqpt.	Medium exposure – Main Panels
1	Fault Current rating	14kA IC	65kAIC
2	Surge kA rating	50kA/60kA Phase	100kA /phase
3	Fuse	Built in the SPD and fuse should be able to take the surge current.	
4	Surge Protection	Protection should be provided in L-L, L-N, L-E, E-N	
5	Response time	<0.5ns	
6	Let-through Voltage	600V-800V	
7	Status indication	On-line LED	

8	Technology	MOV with fusing Elements
9	Surge Capacitors	Yes
10	Failure Testing	Yes Safe Failure
11	MCOV	320V (max. continuous Operating voltage)

SPECIFIC REQUIREMENTS IN PANELS FOR BMS:

Following requirements shall be done in the panels for Building Management system.

1. **Incoming switchgears in Main Panels i.e. MLTP, Synchronizing Panels :**
 - a. Switchgear shall be provided with Microprocessor based release with communication RS485 port.
 - b. Necessary accessories like Auxiliary contact block, position micro switch for providing potential free contacts for ON, OFF & TRIP status for BMS besides the requirement of indications on panel doors.
 - c. Shunt release for remote trip
 - d. Necessary Auxiliary Contactors for providing potential free contacts shall be provided.
2. **Incoming switchgears in Sub-panel/PDBs, MLDB :**
 - a. Necessary accessories like Auxiliary contact block, position micro switch for providing potential free contacts for ON, OFF & TRIP status for BMS besides the requirement of indications on panel doors.
 - b. Shunt release for remote trip.
 - c. Necessary Auxiliary Contactors for providing potential free contacts shall be provided.
3. **Outgoing switchgears in Main Panels i.e. MLTP, Synchronizing Panels :**
 - i. **MCCBs :**
 - a. Necessary accessories like Auxiliary contact block, position micro switch for providing potential free contacts for ON, OFF & TRIP status for BMS besides the requirement of indications on panel doors.
 - b. Shunt release for remote trip.
 - c. Necessary Auxiliary Contactors for providing potential free contacts shall be provided.
 - ii. **ACBs:**
 - a. ACBs with Microprocessor based release without Communication port unless mentioned. But it shall be possible to add release with communication port in this ACB in future.
 - b. Necessary accessories like Auxiliary contact block, position micro switch for providing potential free contacts for ON, OFF & TRIP status for BMS besides the requirement of indications on panel doors.
 - c. Shunt release for remote trip.
 - d. Necessary Auxiliary Contactors for providing potential free contacts shall be provided.
4. **Metering:** All meters unless otherwise specified shall be digital type with RS485 port and necessary software for parameter display at remote PC shall be provided by vendor along with the panels/meters.

Necessary wiring shall be done for all above accessories & potential free contacts mentioned in Sr. no. 1 to 4 above up to the terminal block.

This will be clearly shown in control wiring diagram with identification.

5.

Requirement for Monitoring & Control (Optional) :

In case of Monitoring & Control all above requirements along with additional provisions shall be provided in the panels like Controller, RTU, DDC, Data cable connections provisions etc. This will be decided later if required by client.

However space provision shall be done for incorporating, Monitoring & control requirements in all panels.

20. CABLES & CABLE LAYING

L. T. CABLES:

All power and distribution cables shall be 1100V grade, PVC / XLPE insulated and sheathed, armoured, multistrand aluminium conductor cables unless otherwise specified. All control cables shall be 1100V grade PVC insulated and sheathed armoured multi-strand copper conductor cables unless otherwise specified. The cables shall conform to IS 1554-1988 & IS 7098:1988 with up to date amendments. Type test certificates of the cables from manufacturers for the particular drums shall be provided. Shop inspection shall be offered for routine tests if specifically asked for.

LAYING:

1. The cables shall be thoroughly inspected for transit damage and irregularity in sheath etc.
2. Sufficient manpower with necessary equipment like jacks, rollers shall be provided for unwinding and laying the cables and dragging and twisting shall be avoided. Proper unwinding methods shall be used to avoid twists & cable should be meggered before starting laying.
3. Cables shall be laid at a depth of at least 750mm from ground level with 50mm sand bedding, brick box with cushion for protection. Bending radius provision of at least 12 D shall be kept while laying. The trenches shall be filled and reinstated layer by layer leaving a crown on top.
4. H.T. and L.T. cables shall not be laid in same trench. When more than one cable is laid in same trench a gap of at least 150mm shall be kept between the cables.
5. Cables laid on walls; trenches shall be supported at every 600mm for vertical run and every 450mm for horizontal run. Suitable clamps shall be provided for fixing and support. Vertical runs near ground level shall be protected by GI Pipes of suitable size up to the height of at least 900 mm.
6. The length of the cables in schedule will be approximate and actual site measurements shall be taken by contractor prior to cutting any cable.
7. Cable identification tags shall be provided at appropriate location throughout length of cables and at both ends.

JOINTING:

Jointing or end termination of cables shall be done by skilled person only. Straight through joints shall be avoided as far as possible. Heavy-duty compression type brass glands shall be used for all connections. Crimping type lugs with suitable brass/Chrome Plated hardware shall be provided for connections.

The cables on panel side are connected to bus bars Cu or Al, Care should be taken to avoid heating & corrosion at the joints. All LT cable joints in outdoor and humid atmospheres shall be done with double compression glands only / if done by Single compression Gland should be accommodated by **PVC HOOD** Of Appropriate size.

TESTING:

Cables shall be meggered as soon as they are brought to site. Insulation resistance shall also be tested.

- a) After cutting.
- b) After laying and preparing the joint.

Following test shall be taken after completing the installation.

- a) Cable continuity.
- b) Earth continuity.
- c) Insulation resistance.

1000V megger shall be used for testing 3 phase 415 Volt systems.

All HT cables shall be pressure tested after making the end joints at site. Insulation resistance tests shall be done by 5000V megger for all H.T. Cables.

CABLE ROUTE MARKER:

Cable route marker shall oval shaped cast iron of minimum 150 mm length. The voltage levels shall be specifically marked on cable route markers. The cable route marker shall have 20 mm GI pipe or 20 x 20 x 3 mm MS angle support of suitable length grouted in 150 x 150 x 150 mm 1:3:6 concrete block buried in ground.

21. POINT WIRING

CONDUITS; ACCESSORIES & JOINTS:

All conduits unless otherwise specified shall be hot dip galvanized ERW steel conduits

16SWG up to 25mm dia and 14SWG above 25mm dia size. All conduit accessories shall be screwed type and conduits shall be joined by means of threaded couplings only. Check nuts shall be provided at all joints for tightening and sealing. Ends of conduits shall be free from burs sharp edges. All threaded portions shall be cleaned of any oil and shall be coated with plastic adhesive. All M.S conduits and accessories if used shall be painted with 2 coats of Red Oxide before installation and accessible parts of conducting after installation shall be painted with enamel paint to match the wall paint. Capacity of conduits is separately given. In case of rigid FRPVC conduits, the conduits shall be at least 2.0mm thick. The accessories shall be similar quality. The joints shall be made using special adhesives used for pressure pipe joints.

SURFACE CONDUITING:

The surface conduits shall be fixed with help of 20 SWG saddles on spacers at every 600mm for vertical run and every 450 mm for horizontal run. The runs shall be straight with pull boxes and inspection type bends as required. Contractors are required to provide suitable sleeves for structural member crossing at the time of casting. No elbows shall be allowed.

In case of false ceilings the conduits shall run on walls/trusses/slabs above false ceiling level as far as possible. The connections between such runs and fixtures shall be made with flexible conduits.

CONCEALED CONDUITING:

The concealed conduit work shall be carried out along with construction of walls prior to plaster. The work covers chasing walls with wall cutters only if necessary fixing the conduits, boxes, and accessories, redoing the damaged surface using chicken mesh. All horizontal conduit runs shall be straight at wall point light level to necessary junction/pull boxes and then straight vertical drop to switch box if necessary.

The conduits shall be laid such that they are little below the brick level to avoid cracks. Elbow shall not be used and bends shall be avoided as far as possible using offsets. Pull boxes shall be provided at suitable locations. All necessary sleeves shall be provided in beams, columns, and prior to casting. Deep junction boxes only shall be used in slabs.

The pull and junction boxes shall not be clustered at one place and shall be so arranged that they should not be easily seen from heavy movement areas. All cases shall be taken to secure joints and boxes in place. All vertical runs shall be

sealed at top, while masonry civil works going on. Conduit with 25mm dia. minimum shall be used for all concealed work.

Generally in areas with false ceiling conduits will not be concealed in slab but will be concealed below false ceiling area. Conduits above false ceiling in such cases shall run with proper supports / suspenders. Conduits shall not be rested on false ceiling grid in any case. Flexible conduits shall not be used in concealed work.

SWITCH BOARDS :

The switchboards shall be readymade modular type metal boxes of approved makes as per attached list with all sides knockouts except top. Top plate fixing arrangement shall be provided at all corners with tapped holes. At least 1No. earth stud shall be provided. Switchboard shall be at-least 50mm deep. M.S. Switch board shall be painted with 2coats of Red Oxide primer from inside and outside if not plated or galvanized. In case of surface mounted boards switchboards shall be powder coated with necessary treatment. The switch plate shall be 2mm thick while phenol-bonded sheet unless specified and shall be fixed with chrome-plated screws with cap washers. For modular switch range switch boxes shall be of same make. Metal boxes shall be used for concealed wiring where as ABS plastic/Polyurethane boxes shall be used for surface mounting. Suitable readymade boxes & plates only shall be used.

SWITCHES & SOCKETS:

All 5/15 a switches shall be modular/fancy type 240 V grade of approved colour and of same shade throughout. 5A Sockets shall be 3pin & 15AMP Sockets shall be 5 pin (Universal).

All switches shall be provided on phase wires only. For power points more than 20AMP

capacity 20/30AMP flush type DP Switches shall be provided, unless other wise specified. All workstation sockets shall be universal multifunction.

WIRES & WIRING INSTALLATION:

All wiring shall be carried out with Non PVC / ZHLS 1100V grade multistrand copper conductor wires of specified sizes. The conduits shall be ventilated and drained before drawing the wires. The circuit wires shall be laid in looped formation with suitable termination arrangement in junction boxes. T joints shall be used. No joints shall be allowed in drawn lengths. Crimping type lugs shall be used for switch interconnections. Colour codes shall be followed. Separate earth wire of same class and suitable size shall be drawn along with other wires. Mains and sub-mains shall be drawn in separate conduit of adequate capacities with separate earth wires. All circuit wires shall be meggered for continuity and insulation resistance.

WIRING CLASSIFICATION:

General wiring requirement for points unless otherwise specified in BOQ /Drawing shall be as listed below:

Lighting Sub mains	2 x 2.5 + 1 x 1.5 sq. mm wires
Light / Fan / 5A / ExFan Pts.	2 x 1.5 + 1 x 1.5 sq. mm wires
Call Bell.	
15A Point	2 x 2.5 + 1 x 1.5 sq. mm wires
As above but Looped	2 x 4.0 + 1 x 2.5 sq. mm up to 1st Point. 2 x 2.5 + 1 x 1.5 sq. mm for Looped Point.
1.5 Tonne window A/c & 20A Power Point	2 x 4.0 + 1 x 2.5 sq. mm wires
Window A/c 2.0 Tonne, Geyser & 30 AMP Pts.	2 x 6.0 + 1 x 2.5 sq. mm wires

CONDUIT CAPACITIES:

WIRE SIZE	1.5	2.5	4.0	6.0	10.0
CONDUIT SIZE (GI ERW)					
19/20 mm	7	4	3	----	----
25 mm	10	8	6	5	----
32 mm	18	14	12	8	4
40 mm	---	---	---	10	8

No. of wires in respective size of conduits shall not exceed capacities given. Capacities as given for conduit runs with pull boxes at not more than 4.25 mtrs. and deflection not more than 15°. 20% reduction shall be applied for conduit runs with deflection more than 15°. 20% additional wires shall be allowed in the same size FRPVC conduits.

MOUNTING HEIGHTS (ABOVE FFL):

The general recommended heights for Points as given below:

a) Light Points on Walls	2250 mm. (Center)
b) Switch boards DB's	900 mm. (Bottom)
c) Socket outlets	900 mm / 300 mm. (Bottom) / 800 mm at Work Station
d) Telephone Sockets	300 mm. (Bottom) / 800 mm (bottom) at work stations
e) Geyser outlets	1800 mm. (Bottom) / Switch on Nearest switch Board.
f) Exhaust fan outlet	Switch at 900 mm Socket near Ex fan,
g) A/c Point	window seal/Near A/c Equipment.

Contractor shall refer specific point schedules and architects drawings for exact lights of points.

POINT DEFINITIONS:

1. All points shall include necessary circuit mains from distribution boards up to switch boards as specified, point wiring up to points locations from switchboard, switch, switch sockets & boxes with switch plates as specified, Connector, ceiling rose or brass light holder as required at point location.
2. The circuit mains will not be separately measured in any case.
3. The points will not be distinguished as primary / secondary or short / long points. Generally 2 ceiling light points will be controlled by one switch in open areas and one light point will be controlled by individual switch in small rooms, cabins, toilets unless otherwise specified. Individual switches will control all wall light points.
4. Points controlled directly from the MCB DB by MCB shall be identified separately.
5. Call bell points shall include call bell either dual tone or musical.
6. A/C points unless otherwise specified shall be with 20A Industrial sockets & SPMCB in A readymade box near the A/C location on left side.
7. Fan point unless otherwise specified shall include electronic step control regulator with RF filter and fan box / fan fixing arrangement.

8. Any socket outlet separated by minimum 1.0 mtrs. From the nearest switchboard shall be considered independent socket outlet.
9. All power / A/C, Geyser points shall include wiring from the MCB DB's and no separate Mains shall be measured for these points.
10. In case of multiple sockets on an independent socket board one socket point will be considered as independent points and other

22.0 MATERIALS OBTAINED FROM DISMANTLEMENT

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

23.0 MATERIAL BROUGHT BY THE CONTRACTOR

- 23.1. The contractors shall have to deposit, the approved paints of required colour and shade as per actual requirement of the work to be done, with the Engineer-in-charge at his departmental stores at the site of work.
- 23.1.1 The paint will be issued to the contractor from time to time according to his requirements for the work in the same manner as the issue of materials stipulated to be issued departmentally. Similar procedure shall be followed for water proofing compound.
- 23.2 The day-to-day receipt and issue quantity account of water proofing compound, paints etc. shall be maintained by the Junior Engineer and signed daily by the contractor or his authorized agent.
- 23.3 Empty containers should not be removed without the written permission of the Engineer-in-charge

24.0 TESTING OF MATERIALS

- 24.1 All the materials as required in the work shall be got tested in the laboratory as approved by the Engineer-in-Charge as and when necessary.
- 24.2 The contractor shall procure all the materials in advance so that there is sufficient time for testing and approving of the material and clearance of the same before use in work.
- 24.3 Samples of various materials required for testing shall be provided free of charge by the contractor. Testing charges, if any for the first sample shall be borne by the department. All other expenditure required to be incurred for taking the samples, conveyance, packing etc. shall be borne by the contractor himself. In case the sample does not satisfy the provision specified, the cost of testing of subsequent samples shall also be borne by the contractor.
- 24.4 With a view to avoid controversy about quality of cement concrete as revealed in the test results of 7 days cubes falling short of the prescribed standards by over 10% to 20% and pending testing of balance 3 cubes for 28 days as final confirmatory acceptance test, crushed samples of cement concrete from the failed 7 days cubes should be preserved in a sealed bag.
- 23.5 In case of concrete and reinforced concrete work, the contractor shall be required to make arrangement for carrying out compressive strength tests at his own cost. He shall render all assistance for the preparation of cubes, safe custody of the same, proper curing and carriage up to the laboratory where the test is to be performed, the cube tests can be performed at any laboratory approved by the Engineer-in-Charge.
- 25.0 The contractor shall make his own arrangements for obtaining electric connections, if required and make necessary payments directly to the department concerned.

- 26.0. Other agencies will also be executing simultaneously the works like electrification, horticulture of external services and other building works for the same project along with his work in particular, the contractor shall afford necessary facilities for the same no claim in this respect shall be entertained. The contractor shall leave such necessary holes, opening etc. for laying/burying in the work, pipes, cables, conduits, clamps, boxes and hooks for fan fitting, P.A. system, telephone system, C.C.T.V., system etc. and nothing shall be paid for the same. Conduits for electrical wiring / cables will be laid in such a way that they leave enough space for the concreting and do not adversely affect the structural members. Nothing extra over the agreement rate shall be paid for the same.
- 27.0 The contractor for this work shall plan his work in such a manner so that the work(s) of other contractor(s) is /are not affected in any way. A proper co-ordination with other contractors working at site has to be maintained.
- 28.0. Any cement slurry added over base surface (or for continuation of concreting) for bond, if added, its cost shall be deemed to have been included in the respective items, unless otherwise, specifically stated, and nothing extra shall be payable nor extra cement considered in the cement consumption on this account.
- 29.0. The contractor for this work shall plan his work in such a manner so that the work(S) of other contractor(S) is /are not affected in any way. A proper co-ordination with other contractors working at site has to be maintained.





CENTRAL PUBLIC WORKS DEPARTMENT

OFFICE MEMORANDUM

No. DG/SE/CM/CON/Misc./02

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

DATED: 16.03.2016

Sub: Draft Special Conditions for NIT to comply directives of Hon'ble National Green Tribunal dt. 04.12.2014 & 10.04.2015 and EIA Guidance Manual issued in February 2010

The guidelines have been issued by SE(TLC), CPWD vide OMs dt. 23.12.2014 and 01.06.2015 on the subject matter in pursuance of orders passed by Hon'ble National Green Tribunal. The Director(Tech & PR) has also issued directives on Air Pollution from construction and demolition activity. These guidelines should be made part of NIT as special conditions and agreement items. The same are summarized as under:-

1. The contractor shall not store/dump construction material or debris on metalled road.
2. The contractor shall get prior approval from Engineer-in-Charge for the area where the construction material or debris can be stored beyond the metalled road. This area shall not cause any obstruction to the free flow of traffic/inconvenience to the pedestrians. It should be ensured by the contractor that no accidents occur on account of such permissible storage.
3. The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/area using CGI sheets or plastic and /or other similar material to ensure that no construction material dust fly outside the plot area.
4. The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precautions that the vehicles are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air/contaminate air.
5. The contractor shall provide mask to every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
6. The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relating to dust emission.
7. The contractor shall ensure that C&D waste is transported to the C & D Waste site only and due record shall be maintained by the contractor.
8. The contractor shall compulsory use of wet jet in grinding and stone cutting.

9. The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
10. The contractor shall carry out on-Road- Inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
11. The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
12. The contractor shall use vehicles having pollution under control certificate. The emissions can be reduced by a large extent by reducing the speed of a vehicle to 20 kmph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.
13. The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.
14. The paving of the path for plying of vehicles carrying construction material is more permanent solution to dust control and suitable for longer duration projects. The NIT approving authority shall carry out cost benefit ratio analysis of the same.

Conditions to be included as Agreement item.

1. The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/area using CGI sheets or plastic and /or other similar material to ensure that no construction material dust fly outside the plot area.
The NIT approving authority shall take such item in the schedule of quantity to ensure that the construction activity does not cause any air pollution during course of construction and/or storage of material or construction activity.
2. The paving of the path for plying of vehicles carrying construction material is more permanent solution to dust control and suitable for longer duration projects. The NIT approving authority shall carry out cost benefit ratio analysis of the same.
Based on the cost benefit ratio analysis, the NIT approving authority shall include the item of paving of path in schedule of item which can be utilized as a permanent path for client after construction of project.
3. **The NIT approving authority shall take lead of C&D waste from construction site to C&D waste site in the scheduled of item.**


Superintending Engineer (C&M)

Issued from file no. CSQ/CM/ 17(1)/2016

Copy to:

- (1) All Spl. DGs/ADGs CPWD. E-in-C PWD, Delhi Govt. They are requested to endorse a copy of this to all CEs, SEs & EEs concerned.


Executive Engineer (C)

APPROVED LIST OF MATERIAL
(FOR ELECTRICAL WORKS)

NOTE: CLIENT RESERVES RIGHT TO ASK FOR ANY OF THE FOLLOWING APPROVED MAKES TO BE USED DURING DISCUSSIONS.
CONTRACTOR SHALL INDICATE WHICH MAKE HAS BEEN CONSIDERED WHILE QUOTING THE RATES.

A. OUTDOOR HT

WORK DELETED

B. SUBSTATION

DELETED

C. EARTHING & LA

MAINTENANCE FREE EARTHING. : ASHLOK / GALEXI / JMV/Equivalent.

EARLY STREAMER LIGHTNING : INDELEC / PHONIX / LPI/ Equivalent.
ARRESTOR

D. PANELS

FABRICATED READYMAD PANELS : ACCUSONIC / ASIAN POWER / PCE / ANTIA /
VEGA CONTROLS / COTMAC / PRATIK /
VIDYUT CONTROLS / Equivalent.

APFC STANDARD : ACCUSONIC / ASIAN POWER / PCE / ANTIA /
VEGA CONTROLS/ COTMAC / PRATIK /
VIDYUT CONTROLS / Equivalent.

CAPACITORS: : SIEMENS / L&T / SUBODHAN / VISA /SHREEM/
Equivalent.

ACB : SCHNEIDER / ABB / SIEMENS / L&T

MCCB : SCHNEIDER / ABB / SIEMENS / L&T/LEGRAND
HAVELS.

RCCB : LEGRAND/ SCHNEIDER / L&T HAGER /SIEMENS

MCB : LEGRAND / SCHNEIDER / L&T HAGER /
SIEMENS

MCB DB : LEGRAND / SCHNEIDER / L&T HAGER /
SIEMENS

LOAD MANGER / DIGITAL METER : CONSERVE / HPL / SECURE /
ELECTREX/SIEMENS

APFC RELAY : BELUK / L&T / SYCON / ELECTRONICOM

CONTACTOR : SCHNEIDER / L&T / SIEMENS

DISTRIBUTION BOARD (DB) : LEGRAND/SEMENS/HAVELS/L&T

FUSES	: MG / SCHNEIDER / L&T / SIEMENS
PUSH BUTTONS	: L&T / RASS / TEKNIK
PILOT LAMPS (INDICATIONS) LED	: ALTOS / TEKNIK / RASS
PLC	: ALLEN BRADLY / MESSUNG
ANNUNCIATOR	: MINILEC / EQUIV
TERMINALS	: WAGO / ELMEX / CONNECTWELL ALSTHOM / AVKS SEGC / L&T / ABB.
RELAYS (PROTECTIONS)	OEN / EQUIV
AUXILIARY RELAY	L&T / SIEMENS/HAVELS/ LEGRAND /
INDUSTRIAL SOCKETS	: ANCHOR
MOTORS	: KIRLOSKAR / CROMPTON / ABB
MOTOR STARTER	: L&T / SIEMENS / SCHNEIDER
TVSS	OBO BETTERMAN / PHOENIX / EMERSON / : Equivalent
RTPFC WITH / WITHOUT REACTOR	L&T / CLARITAS / VISA / POWER MATRIX / : Equivalent
METER (ANALOG)	: RISHAB / L&T / AE / SECURE / Equivalent
SANDWICH BUSDUCT / BUSBAR	SCHNEIDER / L & T / C & S / SIEMENS / : Equivalent
UPS	: DB POWER / MG-APC / ETON / SOCOMECH
CTS' / PT	: AE / KAPPA / C & S / NEWTEK / Equivalent
E. CABLES	
AL. / CU. CONDUCTOR CABLES XLPE / PVC	FINOLEX / POLYCAB /HAVELLS/JONSON :
AL. / CU. CONDUCTOR UNARMoured CABLES	: FINOLEX / HAVELLS/FINOLEX/JONSON
HEAVY DUTY BRASS CABLE GLAND	: HMI / BRACO / JONSON / Equivalent
TELEPHONE CABLE / WIRE	: FINOLEX / RR
TV CABLE	: FINOLEX / POLYCAB
DATA CABLES	: SYSTEMAX / FINOLEX/AVAYA / LEGRAND
CU. LUGS	: DOWELL'S / ATLAS / Equivalent
AL. LUGS	: DOWELL'S / ATLAS / Equivalent
CABLE TRAYS & ACCESSORIES	ELECON/VISHWACHAYA OR EQUIVALENT : LOCAL/ CCR INDUSTRIES

F. POINT WIRING & LIGHTING

FR PVC CONDUIT	: PRECISION / ASIAN / DIAMOND
GI CONDUIT	: BB222BBEC / VEMCOEC / VEMCO
CASING CAPING	: MODI / PRECISION / PRESTO PLAST
TRUNKING PVC	: MK / LEGRAND
CU. WIRE (ZHLS)	: ECOTEK / POLYCAB / FINOLEX
SWITCH / SOCKET / DIMMER	: MOSAIC / CLIPSAL /
FAN REGULATOR	: ANCHOR / CONA / VINAY / ROMA
	: ROMA / LEGRAND / CG/ ANCHOR
CEILING ROSE, HOLDERS	: MK / ANCHOR / CONA / VINAY
CEILING FAN/WALL	: CROMPTON / ORIENT/ USHA / BAJAJ / HAVELS /
MOUNTING/PEDESTAL FAN	: ALMONARD
AC	: LG/CARRIER/VOLTAS/BLUE STAR
EX. FAN	: CG / USHA / BAJAJ / ALMONARD
LIGHTING FIXTURE (INTERNAL)/	: WIPRO / PHILIPS / HAVELS / SYSKA
EMERGENCY LIGHT	: PRESTO LIGHT / BPL / CG / BAJAJ / PHILIPS
FLAMEPROOF LIGHTING FIXTURE	: FCG / STAHL / SUDHIR
AVIATION OBSTRUCTION LIGHT	: ALTOS / EQU
GENERAL INSECTOCUTER	: VARUN / FLY-O-CATCH
MOTION SENSOR	: WIPRO / PHILIPS / AQUILA
LUX SENSOR	: WIPRO / PHILIPS
SCENE SELECT SYSTEM	: WIPRO / LUTRON / DYNALITE
CALL BELL/BUZZER	: ANCHOR/ROMA/USHA
G. TELE / DATA / SAFETY	
TELEPHONE TAG BLOCKS	: ITI / KRONE
TELEPHONE / TV SOCKET	: MOSAIC / CLIPSAL / NORTHWEST /
	: ANCHOR VIOLA / CRAB TREE
TV SPLITTERS	: DIAMOND / TOSHIBA
DATA SOCKETS	: AMPS / SYSTEMAX
H. EXTERNAL LIGHTING	
HIGH MAST	: PHILIPS / BAJAJ / WIPRO / SURYA / CG / HPL /
	: SYSKA/HAVELS
POLES	: S P POLES / BOMBAY TUBES OR REPUTED
	: LIGHTING COMPANY / EQUIVALENT
FLOOD LIGHT	: WIPRO / CROMPTON / PHILIPS / HPL / SYSKA / HAVELS
DECORATIVE/LANDSCAPE	: WIPRO / PHILIPS / CG/ / HAVELS / SYSKA / HPL/ PHILIPS
LIGHTING FIXTURE	: PHILIPS/ SYSKA/ HPL / CG/ HAVELS/BAJAJ
LED Tube light/fitting/LED LAMP	: BAJAJ / HAVELS / SYSKA / HPL/ BAJAJ /PHILIPS/CG

PRE CONTRACT INTEGRITY PACT

Ref : MOWR OM NO. 11/23/2011-IFD dt.20.09.2011

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____, between, on one hand, the President of India acting through The In - Charge, Construction Procurement and Planning Division (CPPD), of the officer, Ministry/Department, Government of India (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s _____ represented by Shri _____, Chief Executive officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/ partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government of India/PSU performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any Influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specification by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto agree to enter into this Integrity Pact and agree as follows:

Commitments of the BUYER

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BUDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
- 1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

- 2 In case any such preceding misconduct on the part of such official(S) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prime facie found to be
- 3 correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealing related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceeding under the contract would not be stalled.

Commitments of BIDDERS

- 4 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
 - 4.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
 - 4.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with the Government.
- 3.3* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
- 3.4* BIDDERS shall disclose the name payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiation or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 3.7 The BIDDER will not collude with other parties interested in the contract of impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any persona acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling tender.

The term 'relative; for this purpose would be as defined in Section 6 of the Companies Act 1956.

- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit):

Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24

While submitting commercial bid, the BIDDER shall deposit an amount **Rs.9,000/-** (to be specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the following instruments.

- (i) **Demand Draft or FDR of any Schedule Bank against EMD and should be valid for a period of 120 days from the date of opening of Technical Bids**

- 5.1 The Earnest Money/Security Deposit shall be valid upto the specified period or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.
- 5.2 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 5.3 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/ Security Deposit for the period of its currency.

6. Sanctions for Violations

- 6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-

- (i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER (s) would continue.
 - (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
 - (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
 - (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
 - (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments. Already made by the BUYER, along with the interest.
 - (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money (s) due to the BIDDER.
 - (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
 - (viii) To recover all sums paid in violation of this Pact by BIDDER (s) to any middleman or agent or broker with a view to securing the contract.
 - (ix) In cases where irrecoverable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
 - (x) Forfeiture of Performance bond incase of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1830 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.
- 6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the independent Monitor (s) appointed for the purposes of this Pact.

7. Fall Clause

The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

Independent Monitors

- 8.1 The BUYER has appointed independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Name and Addresses of the Monitors to be given).
- 8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
- 8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.
- 8.6 The BIDDER (s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.
- 8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

- 12.1 The validity of this Integrity Pact shall be from the date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact at CWPRS, Pune-24 on _____.

BIDDER
CHIEF EXECUTIVE OFFICER

PLANNING DIVISION
KHADAKWASLA, PUNE-24

THE IN -CHARGE
CONSTRUCTION PROCUREMENT AND
CWPRS,

Witness

Witness

1. _____

1. _____

2. _____

2. _____

* Provisions of these clauses would need to be amended / deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign suppliers.

Schedule of Work

Name of work: Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24

Estimated Cost: Rs. 4,18,118/-

Time Limit: 60 Days

Sl. No.	Description of Item	Qty.	Unit	Rate in Rs.	Amount in Rs.
1	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 8 way (4 + 24), Double door	2	Each	6,337	12,674
2	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. a) Single Pole MCB (5 A to 32 A rating)	22	Each	285	6,270
3	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required. Group A	60	Point.	1,417	85,020
4	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, Ics=100% Icu and Operational Voltage 690V etc. as required. 100A, 30KA, FPMCCB	2	Each	8,127	16,254
5	Installation, Testing and Commissioning of pre-wired, fluorescent fitting / compact fluorescent/ LED fitting of all types, complete with all accessories and tube/lamp etc., including supplying and fixing ball and socket arrangement, 2 Nos. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and	12	Each	556	6,672

	connections with 1.5 sq. mm FRLS/HFFR PVC insulated, copper conductor, single core cable and earthing etc. as required.				
6	LED Batten light (System lumen efficacy $\geq 105 < 120$ lm/Watt). Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency $> 85\%$, Operating voltage AC 140- 270 Volt, frequency 50/60 hz, Operating temp range -5°C to 40°C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F. ≥ 0.95, IP20, CRI > 80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) < 3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. Complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5-year OEM warranty. System lumen efficacy $\geq 105 < 120$ lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in- Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast /Extruded aluminium Body (Thickness > 1.20 mm) 18-22 Watt	22	Each.	681	14,982
7	LED Street light fixture, powder coated pressure die cast aluminium body (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, installation, Testing & Commissioning of Street light LED fixture powder coated pressure die cast	2	No.	1,366	2,732

	aluminium body with driver as per the requirement with Driver efficiency >85%, Input voltage: 140-270 Volt AC, frequency 50/60 hz, Operating temp range -5 0C to 50 0C, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%,THD < 10% as per IEC 61000-3-2, P. F.≥0.95, IP-66,IK-10, CRI >70, under voltage and over voltage protection, EMIEMC As per CISPR -15, lenses for beam angle as per IESNA type I/II/III as per the width of the road and the project requirement., suitable to fit in up to 65mm dia pipe, life time (LED, Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin),SDCM (Standard Deviation Colour Matching) <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). 45 Watt				
8	Brush Less Direct Current (BLDC) Fan without Remote: Supply, Installation, Testing and Commissioning of ceiling fan with BLDC Motor, class of insulation: B, 3 nos. metal (Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body, Power Factor not less than 0.9, Service Value (CMM/W) minimum 6.0, 350 RPM (tolerance as per IS:374-2019), THD less than 10%, suitable for operation with regulator for speed control and all remaining accessories, temperature rise=75°C (max.), insulation	14	No.	2,695	37,730

	resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC supply, Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable and earthing etc. as required. a) 1200 mm, service value > 6.0 CM/Min/Watt				
9	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
	a) 5/6 A switch	72	Each	63	4,536
	b) 15/16 A switch	28	Each	140	3,920
	c) 3 pin 5/6 A socket outlet	72	Each	81	5,832
	d) 6 pin 15/16 A socket outlet	28	Each	156	4,368
10	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
	a) 2 X 1.5 sq.mm + 1 X 1.5 sq.mm earth wire	200	Mtr.	267	53,400
	b) 4 X 4 sq.mm + 2 X 4 sq.mm earth wire	50	Mtr.	587	29,350
	c) 4 X 2.5 sq.mm + 2 X 2.5 sq.mm earth wire	100	Mtr.	452	45,200
11	LED Panel light 2x2 ft. (System lumen efficacy ≥ 105 <120 lm/Watt) Supplying, Installation, Testing & Commissioning of LED Panel light 2x2 ft., of following body material and construction as per IS:10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 Hz, Operating temp range -5°C to 40°C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD <10%, P.F.>0.95, IP20, CRI >80, UGR (Unified Glare Rating) <19, Flicker free, life time of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends. Complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5-year OEM warranty. System lumen efficacy ≥ 105 <120 lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall	20	Each.	2,508	50,160

	be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast /Extruded aluminium Body (Thickness > 1.20 mm) 36 Watt				
12	Earthing with G.I. earth plate 600 mm x 600 mm x 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 Meter long etc. with charcoal/ coke and salt as required.	2	Set	8,351	16,702
13	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	20	Mtr.	160	3,200
14	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc. as required.				
	a) 1 or 2 Module (75 mm X 75 mm)	8	Each	354	2,832
	b) 3 Module (100 mm X 75 mm)	7	Each	384	2,688
	c) 12 Module (200 mm X 150 mm)	14	Each	614	8,596
15	Removing of old electrical fittings, fans, DBs and wiring as required. Stacking of reusable material in stores and non-reusable material in yard of electrical section as per site engineer instructions.	1	Job	5,000	5,000
				Total	4,18,118/-

Bill of Quantities

Tender Inviting Authority: **The In-charge, CPPD, CWPRS, Pune – 24**

Name of the Work: **Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24**

NIT No.- 27/2026-27

Name of the Bidder/Bidding Firm/Company: _____

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

Sl.No.	Name of Work	Time Limit	Estimated Cost in Rs. (Including GST and all other Taxes etc)	Cost Quoted by Contractors in Percentage (excess or less) only (Including GST and all other Taxes etc)
1.	Electrical Works in Isotope Hydrology Laboratory at CWPRS, Pune-24	60 days	Rs 4,18,118/-	

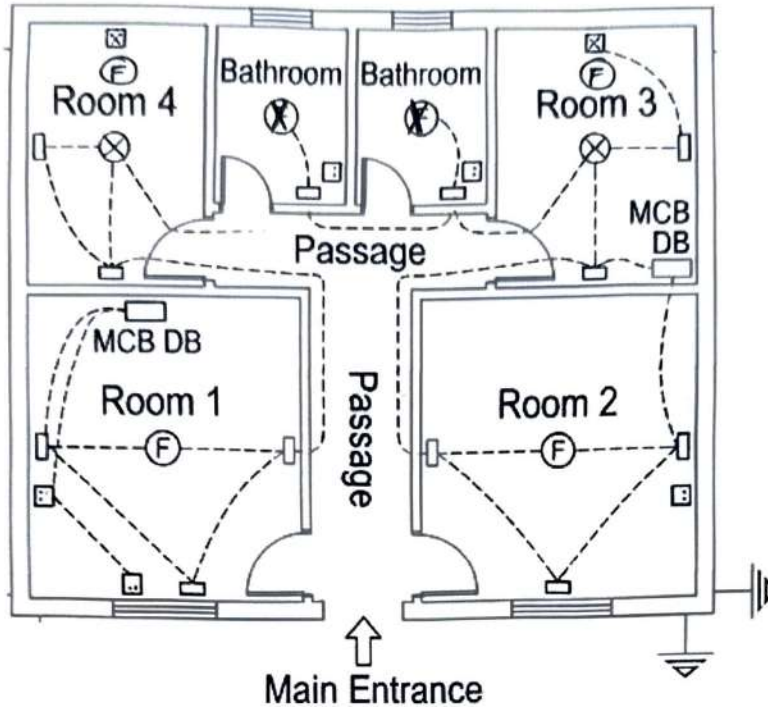
Contractor's Signature

In- Charge
Construction Procurement and Planning Division
CWPRS, Khadakwasla, Pune - 411024

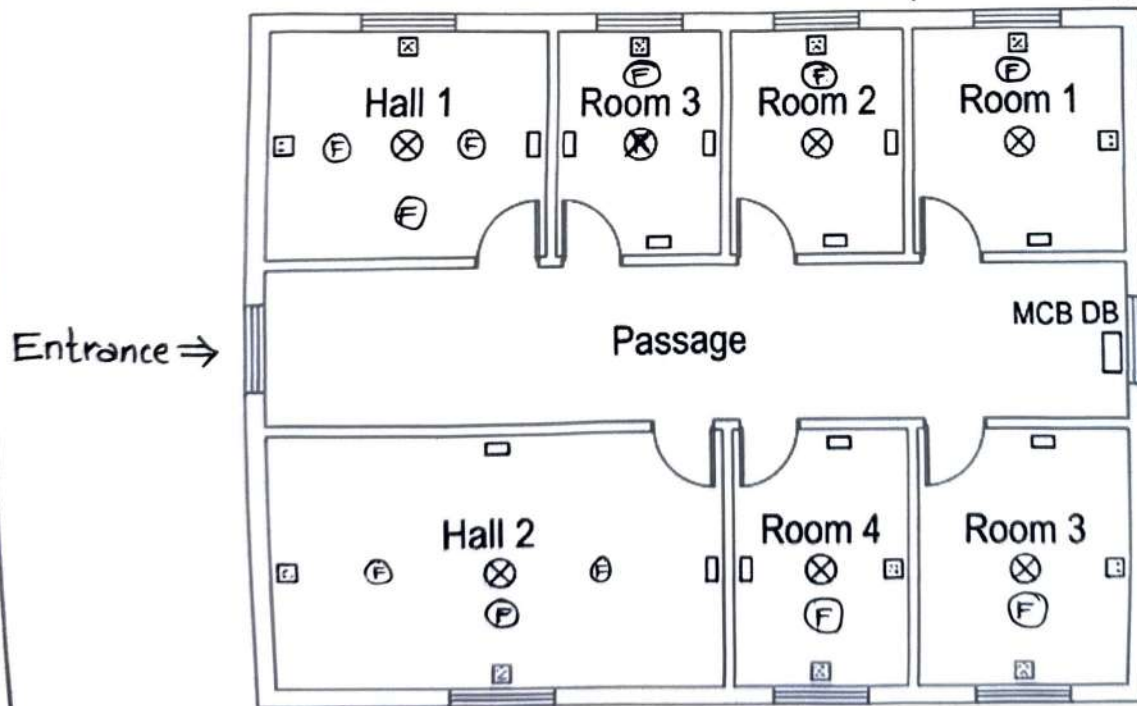
ELECTRICAL LAYOUT DIAGRAM

Isotope Hydrology Laboratory & Main Building, CWPRS, Pune-24

ISOTOPE LABORATORY LAYOUT



HALL & ROOMS IN MAIN BUILDING (For Officers)



*Copy to
24/8/26
RA(F&A)*

SYMBOL LEGEND

⊗ Light Point	⊞ Power Socket
⊙ Fan Point	□ MCB DB
□ Switch Board	⏏ Earthing Pit

Note: Figure not to scale