

INDEX

NAME OF WORK:- Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).

N.I.T. No. :- 27/EE/AGRA/2026-27

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Time Allowed:- (02) Two Months.

This N.I.T. contains **87 (Eighty Seven)** pages. Pages marked from 1 to 87 pages.

The Composite N.I.T. amounting to **Rs.26,74,131/- (Civil Work:- Rs. 16,13,331/- (+) Electrical Work:- Rs. 10,60,800/-)** (Rupees Twenty Six Lakhs Seventy Four Thousand One Hundred Thirty One only) is here by approved.

Executive Engineer (Agra)
CPWD, Agra

PART-A

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

The **Executive Engineer, Agra Division, CPWD, Agra** on behalf of President of India invites online Percentage rate bids from approved and eligible contractors of composite category in CPWD for the following work(s):

S. No.	NIT NO.	Name of work and location	Estimated cost put to bid	Earnest Money	Period of Completion	Last date & time of submission of bid, EMD, e-tender processing fee and other Document as specified in the bid document	Time & date of opening of tender
1	2	3	4	5	6	7	8
1	27/EE/AGRA/2026-27	Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).	Rs.26,74,131/- (Civil Work:- Rs.16,13,331/- (+) Electrical Work:- Rs.10,60,800/-)	Rs.53,483/-	(02) Two Months.	Upto 3:00 P.M. on 14.08.2026	At 3:30 P.M. on 14.08.2026

- The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
- Information and Instructions for bidders posted on website shall form part of bid document.
- The bid document consisting of plans, specifications, schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> free of cost. But the bid can only be submitted after **depositing of original EMD either in the office of the Executive Engineer inviting bids or Division Office of any Executive Engineer, CPWD, within the period of bid submission (The EMD documents shall only be issued from the place in which the office of receiving Division Office is situated.)** and uploading the mandatory scanned documents such as Demand Draft or Pay order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts and Bank Guarantee of any Scheduled Bank towards EMD in favour of **Executive Engineer, Agra Central Division, CPWD, Agra**, receipt for deposition of original EMD to division office of any Executive Engineer, CPWD and other documents as specified
- Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed, they can be imparted training on online bidding process as per details available on the website.
- The intending bidder must have valid **class-III** digital signature to submit the bid.
- On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.

7. Contractor can upload documents in the form of **JPG** format and **PDF** format.
8. If a tenderer does not quote any percentage above / below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tender.
9. *GST or any other tax payable on construction materials/contract/any activity related with this contract shall be paid by the contractor and Government shall not entertain any claim, whatsoever, in this regard. The contractor shall quote his rates in accordance with Government of India, Ministry of Finance, Department of Revenue, Central Board of Excise & Customs Notification no.10/2017-Central Tax dated 28 June, 2017.*

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

- I. Insurance Surety Bond, Demand Draft/ Account Payee Banker's Cheque / FDR/ Bank Guarantee of any commercial Bank against EMD **drawn** in favour of **Executive Engineer, Agra Central Division, CPWD, Agra.**
- II. Enlistment Order of the Contractor.
- III. **GST registration Certificate** if already obtained by the bidder.

If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents.
“If work is awarded to me, I/we shall obtain GST Registration Certificate, as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST Department in this regard”.
- IV. Copy of Electrical licence of eligible class of the bidder. In case, bidder doesn't have electrical licence, he shall submit an undertaking that “I/We will either obtain valid electrical licence at the time of execution of electrical work or associate contractors having valid electrical licence of eligible class.”
- V. Copy of receipt of deposition of original EMD issued from division office of any Executive Engineer, CPWD (The EMD document shall only be issued from the place in which the office of receiving division office is situated)
- VI. Training Certificate of ERP training in the name of himself or his authorized representative issued by any of the CPWD regional Training Institute (RTIs) at Delhi, Mumbai, Chennai and Kolkata or by the National CPWD Academy (NCA), Ghaziabad or by any other special training arranged by ERP unit at CPWD Headquarter.

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RECEIPT OF DEPOSITION OF ORIGINAL EMD

(Receipt No.#..... / date#.....)

Name of work : **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).**

1. NIT No. : **27/EE/AGRA/2026-27**
2. Estimated Cost : **Rs.26,74,131/-**
(Civil Work:- Rs.16,13,331/- (+)
Electrical Work:- Rs.10,60,800/-)
3. Amount of Earnest Money Deposit : **Rs. 53,483/-**
4. Last date of submission of bid : **Upto 3.00 PM on 14.08.2026**

Name of Contractor : -----#-----

1. Form of EMD : -----#-----
2. Amount of earnest money deposit : -----#-----
3. Date of submission of EMD : -----#-----

Signature, Name and designation of EMD
receiving officer (EE/AE(P)/AE/AAO) alongwith officer Stamp

--#-- To be filled by EMD receiving EE.

NOTICE INVITING e-TENDERS

Tender Notice

The Executive Engineer, **Agra Division, CPWD, Agra** on behalf of President of India invites online percentage rate bids from approved and eligible contractors of composite category in CPWD for the following work(s):-

NIT No.: **27/EE/AGRA/2026-27**

Name of Work: **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).**

Estimated Cost: **Rs.26,74,131/-**
(Civil Work:- Rs.16,13,331/- (+)
Electrical Work:- Rs.10,60,800/-)

Earnest Money: **Rs. 53,483/-**

Period of Completion: **(02) Two Months.**

Last time and date of submission of bid:- upto 3.00 p.m. on 14.08.2026

The bid forms and other details can be obtained from the website <https://etender.cpwd.gov.in>. Press notice is also available.

CPWD-6 FOR e-Tendering

Percentage rate bids are invited on behalf of President of India from approved and eligible contractors of Composite category of CPWD for the **work of Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).**

1. The enlistment of the contractors should be valid on the last date of submission of bids.
In case, the last date of submission of bids is extended, the enlistment of contractor should be valid on the original date of submission of bids.
- 1.1 **The work is estimated to cost Rs.26,74,131/-. This estimate, however, is given merely as a rough guide.**
2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7** which is available as a Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **(02) Two Months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. (i) The site for the work is available.
5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> free of cost.
6. After submission of the bid, the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the percentage rate quoted by him any number of times for any/all sub-heads but before last time and date of submission of bid as notified.
8. **Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank (drawn in favour of Executive Engineer, Agra Central Division, CPWD, Agra) shall be scanned and uploaded to the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of the Executive Engineer inviting bids or Division Office of any Executive Engineer (including NIT issuing EE/AE) CPWD within the period of bid submission. The EMD receiving Executive Engineer including NIT issuing EE/AE shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by the tender inviting EE in the NIT.**

The receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.

A part of earnest money is acceptable in the form of bank guarantee also, In such case, **minimum 50%** of earnest money or Rs. 20 lac, whichever is less, **shall** have to be deposited in shape prescribed above, and balance **may be deposited** in shape of Bank Guarantee of any scheduled bank **having validity period of 90 (ninety) days or more from the date of submission of tender. This Bank Guarantee shall also be scanned and uploaded by the intending bidders.**

The Declaration shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the bid document shall be scanned and uploaded to the e-Tendering website within the period of bid submission. **Further, certified copy of all the scanned and uploaded documents as specified in bid document shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority.**

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

The bid submitted shall be opened at **03:30 PM on 14.08.2026.**

- 9A. The contractors registered prior to 01.04.2015 on e-tendering portal of CPWD shall have to deposit tender processing fee at existing rates, or they have option to switch over to the new registration system without tender processing fee any time.
10. The bid submitted shall become invalid and e-Tender processing fee shall not be refunded if:
- The bidder is found ineligible.
 - The bidder does not **deposit original EMD with division office of any Executive Engineer, CPWD.**
 - The bidder does not upload all the documents (including GST registration certificate) as stipulated in the bid document **including copy of receipt for deposition of original EMD.**
 - 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 bid opening authority.
 - If a tenderer does not quote any percentage above / below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The contractor whose bid is accepted will be required to furnish **performance guarantee as per Schedule - E** within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case, the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited alongwith bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses / registrations or proof of applying for obtaining labour license, registration with EPFO, ESIC and BOCW welfare board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provision by the sub contractors, if any engaged by the contractor for the said work and programme chart (Time and progress) within the period specified in schedule F.
12. Description of the work is as follows :-
Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works). Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and, in general, shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent 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 bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids, in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders, shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

15. 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.
16. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India, as aforesaid, before submission of the bid or engagement in the contractor's service.
18. **The bid for the works shall remain open for acceptance for a period of thirty (30) days from the date of opening of bids.** (i) If any bidders withdraws his bid 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 rebidding process of the work. (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
19. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
 - (a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7 or other Standard C.P.W.D. Form as applicable.

20. For Composite Bids

- 20.1.1 The Executive Engineer in charge of the major component will call bids for the composite work. The cost of bid document and Earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite bid.
- 20.1.2 The bid document will include following three components:

Part A:- CPWD-6, CPWD-7 including schedule A to F for the major component of the work, Standard General Conditions of Contract 2023 for **Maintenance** works as amended/modified up to last date of upload /Submission of bid.

Part B:- General / specific conditions, specifications and schedule of quantities applicable to major component of the work.

Part C:- Schedule A to F for minor component of the work. (SE/EE in charge of major component shall also be competent authority under clause 2 and clause 5 as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.
- 20.1.3 The bidders must associate himself, with agencies of the appropriate class eligible to bid for each of the minor component individually as per NIT Conditions.
- 20.1.4 The eligible bidders shall quote percentage rate for all subheads/components of work.

- 20.1.5 After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two or more copies of agreement depending upon number of EE's/DDH in charge of minor components. One such signed set of agreement shall be handed over to EE/DDH in charge of minor component(s). EE of major component will operate **Part A & Part B** of the agreement. EE/DDH in charge of minor component(s) shall operate **Part C** along with **Part A (wherever required)** of the agreement.
- 20.1.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.
- 20.1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.
- 20.1.8 The main contractor has to associate agency(s) for minor component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-charge of minor component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of minor component(s).
- 20.1.9 In case, the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of minor component. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case, Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
- 20.1.10 The main contractor has to enter into agreement /MOU with contractor(s) associated by him for execution of minor component(s). Copy of such agreement/MOU shall be submitted to EE/DDH in charge of each minor component as well as to EE in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement/MOU with the new contractor associated by him.
- 20.1.11 **Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main contractor.**
- 20.1.12A. The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components.
- 20.1.12B. Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s)-in-charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.

21.0 Jurisdiction of Courts

- The Court of the place from where the letter of award of work has been issued shall have the jurisdiction to decide any dispute arising out of or in respect of the contract.
- 22.0 CPWD does not have funds of its own and it carries out the works of client departments from their funds (deposit, budgetary, authorization). The CPWD is making payments to the contractors after getting budget/ authorization/ deposit from various Ministries/Client Departments. The payment to the contractor can be done only on availability of funds for that work from client department and in case of delay in getting funds from Ministry / Client Department, CPWD will not be responsible for delay in payment and no any extra compensation on this account shall be granted apart from specified elsewhere in this document. The contractor has to quote his tender accordingly considering this aspect.
- 23.0 The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile uploading tender can be resolved through the concerned Executive Engineer/ Assistant Engineer (Phone no *....., e- mail Id *.....) or ERF help line no. 18001803286 or e-mail Id cpwd.support@techmahindra.com. The e- tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

CPWD-7

COMPOSITE PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

1.	Tender for composite the work of:	Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).
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- (i) To be uploaded by **05:00 P.M. hours on 07.08.2026** upload at <https://etender.cpwd.gov.in>
(ii) To be opened in presence of tenderers who may be present at **3:30 P.M. hours on 14.08.2026** in the office of **Executive Engineer, Agra Division, CPWD, Agra**

TENDER

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

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

We agree to keep the tender open **for 30 (Thirty) days** from the due date of its opening and not to make any modification in its terms and conditions.

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

A copy of earnest money deposit receipt of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee 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 or** Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

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

Dated
Witness:
Address:
Occupation:

Signature of Contractor
Postal Address

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 `*..... (Rupees*.....).

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

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

For & on behalf of President of India

Signature*.....

Designation*.....

Dated: *

*To be filled in by EE

PROFORMA OF SCHEDULES

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

SCHEDULE 'A'**Schedule of quantities (as per PWD-3)****(Civil Work:- Attached)****(Electrical Work:- Attached)****SCHEDULE 'D'**

Extra schedule for specific requirements/document for **As attached in tender form**
the work, if any.

SCHEDULE 'E'

Reference to General Conditions of contract –

Applicable GCC is Maintenance WORKS 2023 as modified & corrected upto previous date of the last date of submission of the tender.

Name of Work: Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).		
Estimated Cost for Composite work	Civil Work	Rs. 16,13,331.00
	Electrical Work	Rs. 10,60,800.00
	Total	Rs. 26,74,131.00
Earnest money	Rs. 53,483/- (To be returned after receiving performance guarantee)	
Performance Guarantee	(a) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher) (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.	
Security Deposit	2.5% of the tendered value of the work	

SCHEDULE 'F'
GENERAL RULES & DIRECTIONS:

Officer inviting tender	Executive Engineer, Agra Division, C.P.W.D, Agra.
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Definitions:

2(v) **Engineer-in-Charge**

For Civil items of work

**Executive Engineer,
Agra Division,
CPWD, Agra.**

For Electrical items of work

**Executive Engineer,(E)
Agra Electrical Division,
CPWD, Agra**

2(vii) **Accepting Authority**

**Executive Engineer,
Agra Division,
CPWD, Agra.**

2(x) Percentage on cost of materials and labour to cover all overheads and profits 15% (Fifteen Percent)

2(xi) **Standard Schedule of Rates:**

Civil Items of Work:

DSR-2023 with upto date correction Slips issued upto last date of receipt of tender.

Electrical Items of Work:

As mentioned in Electrical part

2(xii) **Department:**

Central Public Works Department

9(ii) **Standard CPWD contract Form:**

General Conditions of Contract Maintenance Works 2023, CPWD Form 7 as modified & corrected upto previous day of the last date of submission of the tender.

Clause 1

- i) Time allowed for submission of Performance Guarantee programme chart (Time and Progress) and applicable labour licenses/registration, registration with EPFO, ESIC & BOCW welfare Board or proof of applying thereof from the date of issue of letter of acceptance 7 Days
- ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period as provided in (i) above 3 Days

Clause 2 Authority for fixing Compensation under Clause 2

**Superintending Engineer
(Agra), CPWD, Agra Or
successor thereof**

Clause 2 A Whether Clause 2A shall be applicable

No

Clause 5 Number of days from the date of issue of letter of acceptance for reckoning date of start

07 Days

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

Sl. No.	Description of mile stone	Period for completion from date of start in days/months	Withheld amount for non achievement of mile stone.
1.	½ of tender amount	01 Month	2.50% of tender amount
2.	Full of tender amount	02 Months	2.50% of tender amount

Time allowed for execution of work**(02) Two months.****Authority to decide****(i) Authority to decide Extension of time**

Executive Engineer, Agra Division, CPWD, Agra

(ii) Authority to decide rescheduling of mile stone.

Superintending Engineer, Agra Circle, CPWD, Agra Or successor thereof.

(iii) Shifting of date of start (in case of delay in handing over of site)

Superintending Engineer, Agra Circle, CPWD, Agra or his successor thereof

Clause 6 Computerized MB (EMB)/ ERP**Measurement mode : EMB/CMB****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

Civil :- Rs.7.00 lacs**Clause 7A**

Whether clause 7A shall be applicable.

Yes

Clause 10A

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

As per requirement.**Clause 10B (ii)**

Whether clause 10-B (ii) shall be applicable.

No**Clause 10 C**

Component of labour expressed as percentage of value of work.

NOT APPLICABLE**Clause 10CA:** NOT APPLICABLE

S.No.	Material covered under this clause	cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Materials covered under clause 10 CA*
----- N/A-----			

Clause 10 CC:	NOT APPLICABLE	
Clause 11	Specification to be followed for execution of work:	
For Civil items of work	CPWD Specifications 2019 Vol. 1 and Vol. 2 with correction slips up to day previous to last date of submission of tender.	
For Electrical items of work	As mentioned in Electrical part	
Clause 12		
Type of Work	Maintenance work.	
Authority to decide deviation upto 1.5 times of tendered amount	SE (Agra). CPWD	
12.2	Deviation limit beyond which clause 12.2 shall apply for building work.	Deleted
12.3	Deviation, Deviation Quantities, Pricing	No limit

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12.5	i) Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	No limit
	ii) Deviation limit for items mentioned in earth work subhead of DSR and related items	No limit
Clause 16	Competent Authority for deciding reduced rates:	
	(For Civil & Electrical items of work)	Superintending Engineer, Agra Circle, CPWD, Agra or successor thereof
Clause 18	List of mandatory machinery, tools & plants to be deployed by the contractor at site.	As per requirement.
Clause 19 C		
	Authority to decide penalty for each default	Executive Engineer (Agra) CPWD, Agra or successor thereof
Clause 19 D		
	Authority to decide penalty for each default	Executive Engineer (Agra) CPWD, Agra successor thereof
Clause 19 G		
	Authority to decide penalty for each default	Executive Engineer (Agra) CPWD, Agra successor thereof
Clause 19 K		
	Authority to decide penalty for each default	Executive Engineer (Agra) CPWD, Agra or successor thereof

Clause 25

i	Conciliator:	ADG(RL), CPWD, Lucknow
ii	Arbitrator appointing authority:	Superintending Engineer, CPWD, Agra
iii	Place of Arbitration:	Agra

Clause 32**Requirement of Technical Representative(s) and Recovery Rate**

S.NO.	Requirement of Technical		Minimum experience (Years)	Designation technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 32
	Qualification	Number (of Major + Minor component)			
1.	Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager cum Planning / quality/ Site / billing Engineer	Rs. 20,000/- (Rs. Twenty thousand) only per month per person

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

Clause 38 (Civil)

- i) a) Schedule / statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by CPWD **D.S.R. 2023 for civil works with upto date correction slips.**
- ii) **Variations permissible on theoretical quantities**
- a) Cement for works with estimated cost put to tender not more than ` 5 lakhs. **3% plus/minus**
- For works with estimated cost put to Tender is more than ` 5 lakhs **2% plus/minus**
- b) Bitumen all works **2.5% plus only & nil on minus side.**
- c) Steel reinforcement and structural steel Sections for diameter, section and category. **2% plus/minus.**
- d) All other materials. **Nil**

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

S. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor		
		Unit	Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement:-			
	Cement (OPC)	MT	Not applicable	Not allowed
	Cement (PPC)	MT	Not applicable	
2.	Reinforcement Bars TMT-fe 500D (I)Primary Manufacturer	MT	Not applicable	
3.	Structure Steel	MT	Not applicable	
4.	Electrical Work	Nil	Nil	Nil

GENERAL REQUIRMENTS FOR THE TENDER

Name of Work: Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).

- 1 The tenderer is advised to read and examine the tender documents for the work and the set of drawings available with Engineer-in-charge. He should inspect and examine the site and its surroundings by himself before submitting his tender.
- 2 Separate schedule of quantity is included in this tender for civil and electrical items of work. If the tenderer wants to offer any unconditional rebates on their rates, the same should also be offered in the respective components of civil and electrical schedule separately. The contractor shall quote the percentage rates in figures and words accurately so that there is no discrepancy in rates written in figures and words.
- 3 Time allowed for the execution of work is **(02) Two Months.**
- 4 The contractor(s) shall submit a detailed program of execution in accordance with the master programme/milestone within ten days from the date of issue of acceptance letter.
- 5 Quality of the project is of utmost importance. This shall be adhered to in accordance with the provisions of CPWD specifications and guidelines given in the relevant paras.
- 6 The contractor (s) shall make his own arrangements for electricity and water required for the execution of work.
- 7 **Cement shall be arranged by the contractor himself & stored safely in godown by his own.**
- 8 **Steel Reinforcement shall be arranged by the contractor himself stored safely.**
- 9 Even if, such specialized items of work shall be executed by the specialized agencies, the work shall be deemed to be executed by the tenderer for all purposes and the responsibility of the quality of items of works executed etc. shall continue to be that of the tenderer only.
- 10 Contractor has to deploy required Plant and machinery on the project. In case the contractor fails to deploy the plant and machinery whenever required and as per the direction of the Engineer-in-charge, he (Engineer-in-charge) shall be at a liberty to get the same deployed at the risk and cost of the contractor.

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- 11 Contractor has to provide reinforcement cover blocks made of approved proprietary pre packed free flowing mortars (Conbextra as manufactured by M/s Fosroc Chemical India Ltd. or approved equivalent) of high early strength.
- 12 The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time.
- 13 The contractor shall comply with the provisions of Construction and Demolition Waste Management Rules, 2016 as per Ministry of Environment and Forest notification dated 29/03/2016 issued in exercise of powers conferred by Environment(Protection) Act 1986 (Available on web address www.moef.gov.in). The contractor shall also follow all rules and regulations regarding disposal of C&D waste as per approval of local bodies.

PART-B

MATERIAL AND QUALITY ASSURANCE

1. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
2. The Following Conditions to the specification shall however apply:-
 - a) All stone aggregates shall be of hard stone variety to be obtained from approved quarries conforming to CPWD specification.
 - b) Sand to be used for cement concrete work, mortar for masonry and plaster work shall be of standard quality and shall be obtained from approved quarry.
3. The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
4. The contractor shall submit shop drawings of staging and shuttering arrangement, aluminum work, and other works as desired by Engineer In Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer –in – charge before execution.

5. Test Laboratories :

A) Laboratory at site :

The contractor shall establish a testing lab at site and provide testing equipment and materials for the field tests mentioned in the list of mandatory tests given in CPWD specifications 2009 Vol. 1 & 2. Nothing extra shall be payable to him on this account.

The representatives of the department shall be at liberty to inspect the testing facilities at site and conduct testing at random in consultation with Engineer in charge. The contractor shall provide all necessary facilities for the purpose.

B) Other Laboratories :

- B1 The contractor shall arrange carrying out all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including charges for testing for all materials except cement for which separate condition is provided in tender document.

C) Sampling of Materials:

- C1 Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.

- C2 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge. **Same shall be removed from the site within the time as directed by the Engineer-in charge at their own cost.**
- C3 BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.
- C4 The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
- C5 All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
- C6 The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.
6. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the Jr. Engineer-in-Charge of work and which shall be duly signed by the contractor or his authorised representative.
7. The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However cost of photographs, slides, audio / videography etc. shall be borne by the department.
8. The contractor shall be fully responsible for the safe custody of materials brought by him issued to him even though the materials are under double lock key system.
9. Separate cement registers showing the receipt of the OPC and PPC (as required) shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.
10. Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.
11. In case there is any discrepancy in frequency of testing as given in the list of mandatory test and that in the individual sub-head of work as per CPWD specification 2009 Vol. 1 & 2, the higher of the two frequencies of testing shall be adopted.

12) Maintenance of Register:

All the register of tests to be carried out at construction site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff.

- (i) The registers to be issued to the contractor are :
- Materials at site account register.
 - Cement register.
 - Master test registers.
 - Cube test register.
 - Paint register.
 - Any other register as decided by the Engineer-in-charge relevant to work.

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- (ii) All the entries in the register will be made by the designated engineering staff of the contractor and same should be regularly reviewed by JE/AE/EE.
- (iii) Contractor shall be responsible for safe custody of all the test registers.
- (iv) Submission of copy of all test registers, material at site register along with each alternate running account bill and final bill shall be mandatory. These registers should be duly checked by AE(P) in division office.
- (v) The agency shall submit manufacturer's test reports of materials other than CPWD Specification on demand by Engineer-in-charge along with original cash vouchers.

ADDITIONAL CONDITION FOR CEMENT

- 1 The contractor shall procure Portland Pozzolana Cement conforming to IS: 1489 (Part-I)-2015 as required in the work, from reputed manufacturers of cement, such as A.C.C., Ultratech, Vikram, Shree cement, Ambuja, Jaypee Cement, Century Cement, J.K. Cement **or from any other reputed cement manufacturer having production capacity not less than 1 million tonnes per annum as approved by ADG for the sub region.** The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially.

Supply of cement shall be made in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of the relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS code the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

2. The cement shall be brought at site in bulk supply of approximately **05 tonnes** or as decided by the Engineer-in-Charge.

The cement godown of the capacity to store a minimum of **100 bags** of cement shall be constructed by the contractor at site of work for which no extra payment shall be made.

3. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
4. The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to test laboratories. The cost of tests shall be borne by the contractor/department in the manner indicated below :
 - a) By the contractor, if the results show that the cement does not conform to relevant CPWD Specifications / BIS code or specification mentioned elsewhere in the documents.
 - b) By the department, if the results show that the cement conforms to relevant CPWD Specifications / BIS code or specification mentioned elsewhere in the documents.
5. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10A of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate show prescribed shall be made. In case of excess consumption, no adjustment needs to be made.
6. The cement brought to site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-Charge.
7. The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.
8. The contractor may use OPC in place of PPC only after written permission of Engineer-in-Charge. In such case, no extra payment shall be made in any form to the contractor by the Department.

SPECIAL CONDITION FOR STEEL REINFORCEMENT BARS

1. The contractor shall procure only **corrosion resistant** reinforcement TMT bars of **Fe 500D** or more grade from steel producers such as **SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd and JSW Steel Ltd or their** authorized dealers.
 - 1.1 TMT bars shall meet the provisions of IS 1786: 2008 (Indian Standard Specifications for high strength deformed steel bars and wires for concrete reinforcement) pertaining to **Fe 500D** or mote grade of steel.
 - 1.2 In case, corrosion resistant TMT bar is not available in the market, normal TMT bar of same grade shall be allowed only after prior approval of Engineer-in-charge. In such situation, cost reduction at the rate of Rs. 3.00 per Kg of steel reinforcement shall be made
2. The contractor shall have to obtain manufactures certificate stating the process of manufacture. chemical composition and test sheet giving results of each mechanical test applicable to the materials and submit and furnish to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work. Each test certificate shall indicate the number of cast to which it applies, corresponding to the number or identification mark to be found on the material.
3. Steel bars brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use. Samples of each confinement shall be taken and got tested by the Engineer-in- charge for chemical composition and physical properties (including bend and re-bend test) as per the provisions in this regard in the relevant BIS codes from any Govt. or approved laboratory. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected and it shall be removed from the site of work by the contractor at his cost within a week time of written orders from the Engineer- in-charge to do so.
4. The steel reinforcement shall be brought to the site in bulk supply of 30 tonnes or more or as directed by the Engineer-in-charge.
5. The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent distortion & corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
6. For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

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

7. **All the expenditure to be incurred for testing of samples, e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.**

8. If the quantity of steel actually used in the work is found to be more than the theoretical quantity of steel including authorised variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that at any stage or after the completion of the work the quantity of steel used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in clause 38). The cost of quantity of steel so less used shall be recovered from the contractor at rate as specified in schedule 'F'. Decision of the Engineer-in-Charge in regard to theoretical quantity of steel which should have been actually used and recovery of the rate specified shall be final and binding on the contractor. In case the contractor brings surplus quantity of steel the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-charge.
9. The standard sectional weights referred to as in Table 5.4 under para 5.3.4 in CPWD specifications for works 2009 Vol. 1 will be considered for conversion of length of various sizes of MS bars, Tor steel bars and TMT bars into standard weight.
10. Records of actual sectional weight shall also be kept dia-wise & lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as derived actual weight.
11. If the derived weight as in para 10 above is lesser than the standard weight as in para 9 above, the derived actual weight shall be taken for payment.

If the derived actual weight is found more than the standard weight, then the standard weight as worked out in para 9 above shall be taken for payment. In such case nothing extra shall be paid for the difference between the derived actual weight and the standard weight.
12. Mixing of different type of steel/different grades of steel shall not be allowed in the same structural members as main reinforcement to satisfy clause 26.1 of IS:456.
13. Tolerances on Nominal Mass (individual sample) shall be as under:-

Sl. No.	Nominal size mm	Tolerances on the Nominal Mass, percentage
I	Upto and including 10	-8%
II	Over 10 upto & including 16	-6%
III	Over 16	-4%

GENERAL TERMS AND CONDITIONS

- 1 The order of preference in case of any discrepancy under "Conditions of Contract" given in standard CPWD contract form may be read as the following:

- i) Nomenclature of items as per schedule of quantities.
- ii) Particular specification and special condition, if any.
- iii) CPWD specifications.
- iv) Architectural Drawings.
- v) Indian standard specifications of B.I.S.
- vi) Sound Engineering Practice.

A reference made to any Indian Standard specification in these documents, shall imply to the latest version of that standard including such revision/amendments as issued by the Bureau of Indian standard upto last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian standard applicable to the work at site.

- 2 Except for the items, for which particular specifications are given or where it is specifically mentioned otherwise in the description of items in the schedule of quantities the work shall generally be carried out in accordance with the "CPWD specifications 2009 Vol. 1 and Vol. 2 (with up to date correction slips). (Hereinafter to be referred to as CPWD specifications) and instructions of Engineer-in-Charge. Wherever CPWD specifications are silent the latest IS codes/specification shall be followed.
- 3 Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same. Extra payment for centering/shuttering, if required to be done for heights greater than 3.5 m shall however be admissible at the rates arrived at in accordance with clause 12 of the agreement, if not already specified.
- 4 The proposed building is a prestigious project and quality of work is paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipments to execute the work. Many items like stone masonry & stone cladding works, stone flooring, structural glazing, PVDF coating aluminium composite panel and other specialised flooring work, Wood work will specially require engagement of skilled workers having experience particularly in execution of such items.
- 5 a) The contractor (s) shall inspect the site of work before tendering and acquaint himself with the site conditions and no claim on this account shall be entertained by the department.
- b) The contractor (s) shall get himself acquainted with nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction.

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- 6 The contractor (s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters of site. However, no claim on the alleged inadequacy or incorrectness of the soil data shall be entertained.
- 7 The tenderer shall see the approaches to the site. In case any approach from main road is required by the contractor, the same shall be made good, improved and maintained by the contractor at his own cost. No payment shall be made on this account.
- 8 The contractor (s) shall give to the Municipality, Police and other authorities all necessary notices etc. that may be required by law and obtain all requisite Licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain light and other illumination on for cautioning the public at night.
- 9 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work. The contractor shall be responsible for all damages and accidents due to negligence on his part.
- 10 Contractor shall provide permanent bench marks and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings
- 11 The contractor shall make his own arrangement for obtaining electric connection(s) if required and make necessary payments directly to the department concerned.
- 12 Other agencies doing works related with this project may also simultaneously execute their works and the contractor shall afford necessary facilities for the same. 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 may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.
- 13 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 restrictions/instructions and nothing extra shall be payable on account of the same.
- 14 The contractor shall fully comply with all legal orders and directions of the Public or local authorities or municipality and adhere to their rules and regulations and pay all fees and charges for which he may be liable in this regard. Nothing extra shall be paid/reimbursed for the same.
- 15 The building work shall be carried out in the manner complying in all respects with the requirements of the relevant by-laws and regulations of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-charge and nothing extra shall be paid on this account.

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- 16 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.
- 17 If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.
- 18 It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.
- 19 The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.
- 20 The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where, however phased delivery of work is contemplated these provisions shall apply separately to each phase.
- 21 The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingles, sand etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.

The same shall be deemed to be included in the rates tendered by the contractor and nothing extra will be paid for the same.
- 22 If the work is carried out in more than one shift or during night no claim on these accounts shall be entertained.
- 23 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.
- 24 The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.
- 25 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.

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- 26 Any cement slurry added over base surface for continuation of concreting for better bond is deemed to have been built in the items and nothing extra shall be payable for extra cement considered in consumption on this account.
- 27 The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth or building materials etc. shall be stacked/collected in areas where other buildings, roads, services, compound walls etc. are to be constructed.
- Any trenching and digging for laying sewer lines/water lines/cables etc. shall be commenced by the contractor only when all men, machinery's and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time.
- 28 The contractor shall submit for the approval of Engineer-in-Charge names of specialized agencies of repute along with their technical capacity proposed to be engaged by him, who must have executed satisfactorily works of value as specified in mandatory conditions.
- i) The works shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available thereof is complete and unambiguous. The discrepancy, if any shall be brought to the notice of the Engineer-in-Charge before execution of the work. The contractor alone shall be responsible for any loss or damage executing by the commencement of work on the basis of any erroneous and or incomplete information.
 - ii) Other agencies will also simultaneously execute and install the works of electrification, air conditioning, lifts, fire-fighting etc. for this work and the contractor shall provide necessary facilities for the same. The contractor shall leave such recesses, holes openings etc. as may be required for the electric, air-conditioning and other related works (for which inserts, sleeves, brackets, conduits base pinion, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work & brick work, if required and nothing extra shall be payable on this account.
 - iii) The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
 - iv) All Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-Charge.
- 29 Samples of all materials and fittings to be used in the work in respect of brand manufacturer and quality shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS mark for the particular material. Any material/fitting whose sample has not been approved in advance and any other unapproved material brought by the contractor shall be immediately removed as soon as directed.

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Unless otherwise specified in the schedule of quantities the rates for all items shall be considered as inclusive of pumping/baling out water, if necessary, for which no extra payment shall be made. Those conditions shall be considered to include water from any source such as inflow of flood, surface and sub-soil water etc. and shall apply to the execution in any season.

- 30 On completion of work, the contractor shall submit at his own cost four prints of "as built" drawings to the Engineer-in-Charge within 30 days of completion of work. These drawings shall have the following information:
- a) Route of all piping and their diameters including soil waste pipes & vertical stacks.
 - b) Ground and invert levels of all drainage pipes together with locations of all manholes and connections upto outfall.
 - c) Route of all water supply lines with diameters, location of control valves, access panels etc.
- 31 The panting on walls shall be carried out by using rollers only & nothing extra shall be paid.
- 32 No extra payment will be made for operation/activity mentioned at Serial no.1 to 31 above, unless specified otherwise.

PARTICULAR SPECIFICATION & SPECIAL CONDITION OF WORK

1. EARTH WORK

The work shall be done in accordance with CPWD specifications and up to date correction slips issued in this regard.

Any trenching and digging for laying sewer lines/water lines/cables etc. shall be commenced by the contractor only when all men, machinery's and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time.

2. RCC WORK

- 2.1 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorised variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in clause 42) the cost of quantity of cement so less used shall be recovered from the contractor at the rate as specified in schedule 'F'. Decision of the Engineer-in-Charge in regard to the quantity of cement which should have been actually used as per the schedule and recovery at the rate specified shall be final and binding on the contractor.
- 2.2 For non-scheduled items, the decision of the Superintending Engineer (Civil) regarding theoretical quantity of the cement which should have been actually used shall be final and binding on the contractor.
- 2.3 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.
- 2.4 In case the contractor brings surplus quantity of cement the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-Charge.
- 2.5 Cement register for the cement shall be maintained at site.

Cement bags shall be stored in separate godowns to be constructed by the contractor at his own cost as per sketch (which is only indicative and actual size will depend on the site requirements) given in CPWD specifications with weather proof roofs and walls. Each godown shall be provided with a single shutter door with two locks. The key of one lock shall remain with Engineer-in-charge or his authorized representative and that of the other lock with the authorized agent of the contractor at the site of work so that the cement is issued from the godown according to the daily requirements with the knowledge of both parties and proper account for the same is maintained in the standard proforma.

PROFORMA FOR THE CEMENT REGISTER

PARTICULARS OF RECEIPT

Date of receipt	Quantity received	Progressive total	Date of issue	Quantity issued	Items of work for which issued
1	2	3	4	5	6

PARTICULARS OF ISSUE

Qty. returned at the end of the day	Total issued	Progressive total	Daily balance in hand	Contractor's initial	JE's initial	Remarks (AE/EE's periodical check)
7	8	9	10	11	12	13

3. SANITARY INSTALLATIONS, WATER SUPPLY AND DRAINAGE

- 3.1 The work of water supply and sanitary installations shall be got executed by the agency as approved by Engineer-in-Charge.
 - (i) The entire plumbing drawing and sanitary installation drawing/ details shall be submitted by the contractor and got approved by the Engineer-in-Charge before the execution.
 - (ii) The entire responsibility for the quality of work will however rest with the building contractor only.
- 3.2 The work of water supply, internal sanitary installations and drainage etc. shall be carried out as per the bylaws of the Municipal Corporation or any other local body and the contractor shall produce necessary completion certificates from such authority after completion of work.
- 3.3 All water tanks, taps, sanitary, water supply and drainage pipes fittings and accessories etc. shall conform to the bylaws and specifications of the Municipal Body/Corporation where CPWD specifications are not available.
- 3.4 The contractor shall engage licensed plumbers for the work and the materials (fixtures/fittings) tested by the local Municipal Body/Corporation wherever required at his own cost. Nothing extra shall be paid/reimbursed for the same.
- 3.5 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.
- 3.6 The work in general shall be carried out as per CPWD specifications. Rate includes all materials, labour and all the operations mentioned in the respective items unless and otherwise specifically mentioned.
- 3.7 The contractor shall give a satisfactory performance test of the entire installation (s) before the work is finally accepted and nothing extra shall be payable to the contractor on this account.
- 3.8 The contractor shall be responsible for all the protection of sanitary, water supply fittings and fixtures against pilferage and breakage during the period of installation until the completion / handing over of the work.
- 3.9 The contractor shall submit completion plans for water supply internal sanitary installations and building drainage work within thirty days of the date of completion. These plans are to be submitted on drawings prepared preferably through computers (1 original copy + 3 photocopies) on suitable scales to show the general arrangement and desired details.

4. WATER PROOFING TREATMENT

The contractor shall associate himself with the specialized firm, to be approved by the Engineer-in-charge in writing, for water proofing treatment for basement/lower ground floor, underground tank and on roofs. Guarantee in the prescribed proforma attached with tender document shall be given by the specialized firm, for a period of 10 years from the date after the maintenance period prescribed in the contract, which shall be counter signed by the contractor as token of overall responsibility. In addition 10% (ten percent) of the cost of water proofing items shall be retained as guarantee to watch the performance of the work done. However half of this retained amount will be released after five years, if the performance of the work done is found satisfactory. If however any defect is noticed during the guarantee period, it shall be rectified by the contractor within seven days of intimation. In case it is not attended to, the same will be got done by another agency at the risk and cost of the contractor. This guarantee deposit can however be released in full if a bank guarantee of equivalent amount for 10 years is produced and deposited with the department by the contractor.

SPECIAL CONDITIONS

- 1 The work has to be carried out in a very important office cum residential building complex. During the VVIP movement the work may be stopped at any time for which no claim for labour wastage etc. shall be entertained and nothing extra shall be paid.
- 2 The agency shall take every precaution during the work against any mishappening. In case of any mishappening the agency shall be solely responsible.
- 3 The work is emergent, important & time bound nature & has to be completed within stipulated time period.
- 4 The contractor shall issue identity card & badges to his workers and ensure that the workers wear it all the time while working.
- 5 All the serviceable materials obtained from dismantling will be property of the departments and will be deposited to client department or enquiry office stores as directed by the Engineer-in-charge for which no extra payment shall be made.
- 6 Nothing extra shall be paid to the contractor for excess consumption of material in case of material arranged by him & recovery shall be made if it is issued by the department.
- 7 No claim for idle establishment and labour, machinery & equipments, tools & plants and the like, for any reason whatsoever shall be admissible during the execution of the work as well as after its completion.
- 8 Necessary First Aid Kit must be available at site.
- 9 No extra payment will be given for hacking wherever required at the time of POP etc.
- 10 No extra payment will be made for shifting & re-setting of furniture if required for execution of any work.
- 11 The contractor shall not store/dump construction material or debris on metalled road.
- 12 The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/area of working using CGI sheets or plastic and/or other similar material to ensure that no construction material dust fly outside the working area. Nothing Shall be paid extra.
- 13 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.
- 14 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.
- 15 The contractor shall ensure compulsory use of jet in grinding and stone cutting.
- 16 The contractor shall ensure that the DG sets comply emission norms notified by MoEF.
- 17 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.
- 18 **In addition 10% (ten percent) of the total executed cost of item no. 1 & 2 of schedule of quantities of civil work shall be retained as guarantee to watch the performance of the work done for five years. However half of this retained amount will be released after 2.5 years, if the performance of the work done is found satisfactory after report received from concerned Assistant Engineer – in - charge. If however any defect is noticed during the guarantee period, it shall be rectified by the contractor within seven days of intimation. In case it is not attended to, the same will be got done by another agency at the risk and cost of the contractor. This guarantee deposit can however be released in full if a bank guarantee of equivalent amount for 5 years is produced and deposited with the department by the contractor.**
- 19 The work may involve working in odd hours. No extra payment shall be made on account of the same.

LIST OF PREFERRED MAKES OF MATERIALS

Sl No.	Material	Revised list of Preferred Make
1.	(i) Ordinary Portland Cement/Portland Pozzolona Cement.	ACC, Ultratech, Ambuja Cement, J.K.Cement, Shree Cement.
	(ii) White Cement	Birla White, J.K. White
2.	Reinforcement Steel	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd. (RINL), JSW Steel Ltd., Jindal Steel & Power Ltd.
3.	Water Proofing Compounds, Admixtures Plasticizer, Super Plasticizer, Curing Compounds	Fosroc, Pidilite Industries, CICO, Sika, BASF.
4.	Integral Water proofing Compound with cement (For Plaster & Mortar)	Fosroc, Conplast 421, Dr.Fixit : LW+, Sika Sikacim.
5.	Grouts, Tile Adhesive	Latecrete, BASF
6.	Structural Steel	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd (RINL), JSW Steel Ltd., Jindal Steel & Power Ltd.
7.	Polycarbonate Sheet	GE Plastic, LEXAN, MG Polyplast
8.	Profile Steel Sheet	TATA, Jindal Sabrang, JSW Steel.
9.	Particle Board	Action TESA, Merino.
10.	Laminates	Action TESA, Greenlam, Century Ply, Merino.
11.	Flush door shutters	Duro, Century, Durian, Green Ply.
12.	Fire Rated Doors	Signum Fire Protection, Navair, Promat, Ecotone, Radiant
13.	False Ceiling System	Armstrong, Hunter Douglas, USG Boral, Saint Gobain.
14.	Plywood/Veneer	Green Ply, Century, Merino, Durian.
15.	Melamine Polish	Asian Paints : Melamine Gold, Wudfin of Pidilite, Timpertone of ICI Dulux.
16.	Floor Spring & Door Closure	Godrej, Dorma, Dorset, Kich
17.	(a) Aluminium Section	Hindalco, Jindal, Indian Aluminum co.
	(b) Anodised Aluminium Hardware (Heavy Duty)	KIN LONG, Aluapha, Classic, Ebco
18.	Clear/ Float/Frosted/Toughen Glass/Refractive Glass	Saint Gobain, AIS, Modiguard.
19.	Stainless Steel Railing, Accessories etc.	JINDAL, Dorma, Ozone, Godrej.
20.	S.S. Fittings for Door & Window	Dorma, Kich, Dooreset, Godrej, Ozone.
21.	Silicon based water repellent/ Weather Sealant	G.E. Plastics, Dow Corning, Wacker, BASF, Pidilite (Dr. Fixit/Roof).
22.	Poly-Sulphide Sealant	Fosroc, Pidilite (Dr. Fixit/Roof), Sika, BASF.
23.	Mosaic Tiles/Chequered Tiles	Ultra Tiles, NITCO, Kajaria
24.	Glazed Ceramic Tiles	Kajaria, Johnson, Somany.
25.	Vitrified Tiles (Antiskid/Matt/Glazed)	Kajaria, Johnson, Somany.
26.	Paver block & Kerb stone	BIS Mark in UP manufacturer.
27.	Dash/ Anchoring Fasteners	HILTI, Fischer, Bosch.
28.	Cement based wall Putty	Birla wall care, JK White
29.	Oil bound washable Distemper/Dry Distemper	Asian Paints (Professional Acrylic Distemper) Nerolac : Beauty Acrylic Distemper Dulux ICI : Maxilite , British Paints.
30.	1 st Quality Acrylic Distemper(washable/Ready mix/Low VOC)	Asian Paints (Professional Acrylic Distemper) equivalent paints of Nerolac or ICI Dulux.
31.	Acrylic Emulsion Paint	Asian Paints (Royale Luxury Emulsion), Nerolac : Impression, ICI Dulux : Velvet Touch.
32.	Plastic Emulsion Paint	Asian Paints (Apolite Heavy Duty Premium Emulsion Paint), Nerolac : Impression, ICI Dulux : 3 in 1.

33.	Textured Exterior Paint	Asian Paints, Nerolac, Ultratech Paints.
34.	Premium Acrylic Smooth Exterior paint with silicon additive	Asian Paints : Apex Ultima Nerolac : XL Total ICI-Dulux : Weather Shield max
35.	Synthetic Enamel Paint	Asian Apcolite Premium gloss enamel, Nerolac : Synthetic Hi gloss ICI-Dulux : Gloss Synthetic Enamel, British Paint.
36.	Cement Primer	Nerolac, Berger(BP White), Asian (Decoprime WT) & ICI (White Primer).
37.	Steel Primer(Red Oxide Zinc Chromate Primer)	Asian Paints, Nerolac, ICI.
38.	Wood Primer	Asian Paints (Wood Primer – White / Pink), ICI, Nerolac.
39.	Epoxy Paint	Asian, Nerolac, ICI, Kansai Akzo Nobel.
40.	Fire Paint	Asian Paints, Akzo Nobel Coatings India Ltd., PROMAT, Jotun.
41.	G.I./ M.S. Pipe	Tata, Jindal(Hisar), APL-Appollo.
42.	SWR Pipes and fittings	Finolex, Appollo, Ashirwad.
43.	DI Pipes & fittings	Jindal, TATA DUCTURA.
44.	UPVC pipe and Fittings	Astral, Supreme, Prince, Ashirwad, .
45.	Centrifugally Cast(spun) Iron Pipes & Fittings	NECO, BIC, SKF.
46.	Hubless Centrifugally Cast (spun) Iron Pipes & Fittings	RPMF, SKF, NECO
47.	C.I. Manhole covers, Frames & GI Gratings	NECO, BIC, SKF.
48.	SFRC Manhole covers & Gratings	KK, JAIN, PARGATI
49.	CP Brass Fittings (Superior Range)	Jaquar, Grohe, Roca, Kohler, Plato.
50.(a)	CP Brass Fittings (Normal Range)	Hindware, Jaquar (ESSCO Series), Parryware, CERA.
(b)	(a) Sanitary ware, Fittings & accessories (Superior Range)	Jaquar, Hindware, Kohler.
51.	Mirror Glass	Atul, Modi Guard, Golden Fish.
52.	CPVC Pipe & Fittings	Astral, Supreme, Prince, Ashirwad,
53.	Stainless Steel Sink	Jindal, Hindware, Neelkanth, Niralli, CERA.
54.	RCC Pipes (NP-2)	Jay Ambe Enterprise, SR Enterprise, ISI Make,
55.	Extruded Polystyrene Insulation Board	Dowcorning, Supreme, Texas, Analco
56.	Heat Resistant Tiles	Swastik, Thermatek, Johnson, Kajaria.
57.	Gypsum Plaster	Ferrous Crete, Gyproc Saint Gobain, UltraTech, JK White.
58.	Floor hardener	Ironite, Ferrok, Hardonate.
59.	Modular Expansion Joint	Herculus, Sanfield India Ltd. Vexcolt,MNR, Construction Specialties(CS),
60.	Glass Wool	Dow Corning, U.P. Twiga, Isover
61.	UPVC doors and window hardware	Rotto, Dorset, Kinlong, Fenesta.
62.	AAC Block Adhesive	J.K. Super, UltraTech, ArdexEndura, Ferrous Crete.
63.	Block Board	Jayna, Orion Doors(Modern Wudtech Industries).
64.	FRP Doors/Panelled & Wiremesh doors/chajja	Jayna, Fiberways, Jain Doors
65.	Aluminium Composite Panel/Aluminium High Pressure Composite Panel	Alstone International, VIRGO, EUROBOUND,ALUTUFF,VIVA, Timex, ALUTUFF, VIRGO REYNOLARCHALUTECH,ALEX
66.	Epoxy Grouting compound	Saint Gobin-Weber,Star Coatings & Membranes Private Limited, MARKCHEM.
67.	Fire Door Hardware	Becker Fire Solution, Shakti Hormann, PACIFIC
68.	Metal Glazed Fire Doors & Hardware	Shakti Hormann, PACIFIC
69.	MS Pipes, Tubes	APL APOLLO, Jindal
70..	PTMT Fittings	Raksha, Prayag, ASTRAL

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71.	Aluminium Door & Windows System	ETERNIA – HINDALCO, Jindal
72.	Polyethylene Water Storage Tanks	SPL, Sintex, Vectus
73.	Aluminium Door & Windows Fittings	GLOBAL
74.	Toilet cubicle system	Merino, HPL, Greenlam
75.	Tactile tile	Johnson, Pavit, Somany
76.	Epoxy flooring	MC Bauchemie, STP, SIKA, MYK
77.	UPVC Window	Duroplast, Aluplast, Veka, Fenesta, Prominence, Encraft.
78.	Modular Furniture, Steel Furniture and Partition	Veils India Pvt. Ltd. Brown Crust.
79.	Float glass, mirror	Sisecam Flat Glass India Pvt. Ltd., Saint Gobain.
80.	Interlocking paver block G.R.C. Wall tiles G.R.C. Screen Jali panel	Dalal tiles, NITCO.
81.	Geotextile sheet	Tech Fab India, SKAPS Industries (I) Pvt. Ltd.
82.	Re-Polymer based modules	Retas Enviro Solutions Pvt. Ltd., Furaat Earth.
83.	Anti-corrosive protective coating, Corrosion inhibitor, Sacrificial Galvanic Anode, Caplet,	Krishna Conchem Products Pvt. Ltd., Synorganic Paints Pvt. Ltd., Fosroc
84.	Bitumen & emulsion	IOCL, BPCL, HPCL

Note:-

1. In respect of other materials, any ISI marked material can be used on the work but these shall also meet the requirement for obtaining GRIHA 3 star rating. In case any material / product listed above do not meet the requirement required for obtaining GRIHA 3 star rating, alternate product as per decision and approval of tender accepting Authority shall be used. In such situation, cost adjustment (if required) shall be made after approval from tender accepting authority whose decision shall be binding and final.
2. All other material/ make to be approved by Engineer in charge conforming to Specifications and Nomenclature of item and latest IS Codes and samples to be kept in safe custody for inspection of senior officers.
All other makes approved by ADG(RL) office & valid on the date of publication of this NIT will also be considered part of this list unless specifically cut in above list or their rates are varying by more than 10% from the makes taken in list of preferred makes

**CONTRACT FOR REMOVAL OF DEFECTS AFTER COMPLETION OF WORK IN
RESPECT OF WATER PROOFING WORKS**

(BASEMENT/LOWER GROUND FLOOR/UNDER GROUND TANK/ROOF)

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

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

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak-proof for 10 (Ten) years from the date after the maintenance period prescribed in the contract.

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

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

- (a) Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of firewood and things of the same nature which might cause damage to the roof.
- (b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts.
- (c) The decision of the Engineer-in –charge with regard to cause of leakage/seepage shall be final.

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

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

IN WITNESS WHEREOF these presents have been executed by the Obliger _____ and by _____ and for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written SIGNED, SEALED AND delivered by OBLIGOR in the presence of :

1.
2.

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY _____
_____ in the presence of:

1.
2.

**AFTER COMPLETION IN RESPECT OF ALUMINIUM DOORS, WINDOWS VENTILATORS,
STRUCTURAL GLAZING & ALUMINIUM COMPOSITE PANEL WORKS**

The agreement made this _____ day of _____ Two Thousand and _____ between _____ son of _____ (hereinafter called the GURANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part.)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, leak proof and sound material, workmanship, anodizing, colouring, sealing.

AND WHEREAS THE GURANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, defective anodizing, colouring, sealing and finishing for 2 (Two) years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, defective anodizing, colouring, sealing and finishing for two years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

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

During this period of guarantee, the guarantor shall make good all defects to the satisfaction of the Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's risk and cost. The decision of the Engineer-in-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects or commits breach thereunder, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

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

SIGNED, sealed and delivered by OBLIGATOR in the presence of:

1. _____
2. _____

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY _____
_____ in the presence of :

1. _____
2. _____

**TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF WATER SUPPLY AND SANITARY INSTALLATIONS**

The agreement made this _____ day of _____ Two Thousand and _____ between _____ son of _____ (hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part.)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable workmanship, finishing and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing, manufacturing defects of materials and leakages, etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable after expiry of maintenance period prescribed in the contract for the minimum life of 02 (Two) year to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

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

During this period of guarantee, the guarantor shall make good all defects to the satisfaction of the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects commits breach thereunder, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

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

SIGNED, sealed and delivered by OBLIGATOR in the presence of:

1. _____
2. _____

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY _____
_____ in the presence of :

1. _____
2. _____

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Consent Letter of Contractor for e-MB

To

The Executive Engineer (Agra),
CPWD, Agra

Subject : Consent for online recording of measurement and making payment on the basis of online measurement submitted through CPWD ERP System.

Name of Work:

Agreement No.:

Sir,

With reference to the above cited work and agreement, I hereby submit my consent for recording of online measurement on CPWD ERP System and making payment of work done on the basis of online submission of measurements on CPWD ERP System.

Yours faithfully,

Dated:

Place:

(Signature of Contractor/authorized representative)
Name & Seal

On non-judicial stamp paper of minimum Rs. 100

**(Guarantee offered by Bank to CPWD in connection with the execution of contracts)
Form of Bank Guarantee for Earnest Money Deposit /Performance
Guarantee/Security Deposit/Mobilization Advance**

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

OR**

- Whereas the **Executive Engineer** (name of division) CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with (name and address of the contractor) (hereinafter called "the Contractor") for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date) as **Performance Guarantee/Security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.
- We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs. (Rupees only) on demand by the Government within 10 days of the demand.
 - We, (indicate the name of the Bank), do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only)
 - We, (indicate the name of the Bank), further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.
 - We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

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

Date

Witnesses:

1. Signature.....

Authorized signatory

Name and address

Name

Designation

Staff code no.

Bank seal

2. Signature

Name and address

*Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be. **(Added vide OM No. DG/CON/ 311 dated 20.10.2020)

SCHEDULE OF QUANTITY

Name of Work: Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil Work)

Item. No.	Description of items	Unit	Qty.	Rate	Amount
1	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-Charge) of total coated thickness 0.50 mm (base metal of minimum 0.45 mm thickness with total coating thickness of 0.05mm) with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, total excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	732.00	738.65	540692.00
2	Providing and fixing precoated galvanised steel sheet roofing accessories of coated thickness 0.50 mm (base metal of minimum 0.45 mm thickness with total coating thickness of 0.05 mm) with Zinc coating 120 gram per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :				
2.1	Ridges plain (500 - 600mm)	Metre	73.00	532.35	38862.00
2.2	Gutter (600 mm over all girth)	Metre	81.00	1313.70	106410.00

3	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.				
3.1	GI Metal Ceiling Lay in perforated Tegular edge global white color tiles of size 595x595 mm and 0.5 mm thick with 8 mm drop; made of GI sheet having galvanizing of 100 gms/sgm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Coefficient) of 0.5, 60 electro statically polyester powder coated of thickness microns (minimum), including factory painted after bending and perforation and backed with a black Glass fiber acoustical fleece.	Sqm	372.00	2068.75	769575.00
4	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour :				
4.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram/litre	Sqm	368.00	185.65	68319.00
5	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of:				
5.1	G.S. Sheet	Sqm	732.00	164.95	120743.00

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6	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material with in 50 meters lead as directed by Engineer- in-charge.	Sqm	715.00	56.35	40290.00
				Total	1684891.00
	Modified Estimate cost by Multiplying correction factor on DSR 2023 on account of GST issued vide e-file no. 9158977 and letter no. 15/SE(TAS)/GST/2024/02-E dated 08.08.2024 @ 0.973				1639399.00
	Add cost index @ 3% :-				49182.00
				Total	1688581.00
7	Credit of Galvanised iron profile sheets complete and stacking with in 50 m Leads.The material so received shall be the property of contractor after dismantling, duly weighed / measured before removing from the site in the presence of Engineer - in - charge or his authorised representative all complete. and nothing extra shall be paid. (Contractor's abatement will not be applicable on this rate/ item)	Kg	2150.00	-35.00	-75250.00
				Total :-	1613331.00

NOTE:- Intending bidders are advised to visit site and read special conditions of NIT and submit bid accordingly.

Executive Engineer (Agra)
CPWD, Agra

PART-C

ELECTRICAL

WORK

PROFORMA OF SCHEDULES

(For Electrical Works)

SCHEDULE 'A'

Schedule of quantities

(Electrical Work:- Attached)

SCHEDULE 'D'

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

SCHEDULE 'E'

Reference to General Conditions of contract:

General Conditions of Contract 2023 for Maintenance works for CPWD works (amended up to last date of submission of tender).

Name of work:	Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra (SH: Electrical Works)
Estimated cost of work:-	Rs.26,74,131/- (Civil Work:- Rs.16,13,331/- (+) Electrical Work:- Rs.10,60,800/-)
(i) Earnest money:-	As per NIT part A
(ii) Performance Guarantee:-	As per NIT part A.
(iii) Security deposit :-	As per NIT part A.

SCHEDULE 'F'

General Rules & Directions: - Officer inviting tender:		Executive Engineer (Agra), CPWD, Agra.
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- Clause 12
Definitions:		
2 (v)	Engineer-in-Charge for Electrical Works as per NIT Part -C	Executive Engineer (E), CPWD, Agra.
2 (viii)	Accepting Authority	Executive Engineer (Agra), CPWD, Agra
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits.	15%
2 (xi)	Standard schedule of Rates	DSR-2025+MR
2 (xii)	Department	C.P.W.D.
9 (ii)	Standard CPWD contract Form GCC 2023, CPWD Form 7/ 8 as modified & corrected upto:	As per NIT part A

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 letter of acceptance .	7 days
ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above.	3 days

Clause 2 Authority for fixing compensation under clause 2.	As per NIT part A
Clause 2A Whether Clause 2A shall be applicable	No

Clause 5 Number of days from the date of issue of letter of acceptance for reckoning date of start	As per NIT part A
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Mile stone(s) as per table given below:-

Table of Milestone (s)

Sl. No.	Description of Milestone (Physical)	Time allowed in days (From date of start)	Amount to be with-held in case of non-achievement of milestone.
As per NIT part A			

Time allowed for execution of work

As per NIT part A

Authority to decide:	
1. Extension of time	As per NIT part A
2. Rescheduling of mile stones	As per NIT part A
3. Shifting of date of start in case of delay in handing over of site.	As per NIT part A

PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site

Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
Part-A	Portion without any hindrance	As per NIT part A	As per NIT part A
Part-B	Portions with encumbrances		
Part-C	Portions dependent on work of other agencies		
Clause 5 Applicable Clause 5/ Clause 5A		As per NIT part A	

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Clause 6 : Computerised Measure Book (CMB) / Electronic Measurement Book (EMB) Mode of measurement : (Added vide OM no. DG/CON-Maintenance-2020/338 dated 13.04.2023) 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 Clause 7A Whether Clause 7A shall be applicable	EMB N/A N/A
Clause 10A List of testing equipment to be provided by the contractor at site lab.	

Clause 10 – B(ii)

Whether clause 10-B(ii) shall be applicable

No

Clause 10C -

Not Applicable

Component of labour expressed as percent of value of work

25%

Clause 10CC

Clause 10CC to be applicable in contracts with Stipulated period of completion exceeding the period Shown in next column.

Not Applicable

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

Component of material (Except materials covered under clause 10 CA)

Xm

Component of labour expressed as percent of total value of work.

Y

Component of materials expressed as percent of total value of work.

Z

Not Applicable

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Clause 11 Specifications to be followed for execution of work	CPWD's general specification of Electrical Part-I Internal 2023 and Part-II External 2023 as amended up-to date.
12.2 (c)	
Deviation limit beyond which clauses 12.2 (c) shall apply for Building work	As per NIT part A
12.4	
(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	Not applicable
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	Not applicable
Clause 16 Competent Authority for deciding reduced rates	As per NIT part A
Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site.	As per required at site

Clause 19 C..... authority to decide penalty for each default

Engineer- in-charge.

Clause 19 D.....authority to decide penalty for each default

Engineer- in-charge.

Clause 19 G authority to decide penalty for each default

Engineer- in-charge.

Clause 19 K authority to decide penalty for each default

Engineer- in-charge.

Clause 25		
(i)	Conciliator:	ADG(RL), CPWD, Lucknow
(ii)	Arbitrator appointing authority:	Superintending Engineer, CPWD, Agra
(iii)	Place of Arbitration:	Agra

Clause 32 Requirement of Technical Representative(s) and Recovery Rate.

S. No	Requirement of Technical staff		Minimum experience (Years)	Designation of technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
	Qualification	Number (of Major + Minor components)			
1	As per NIT part A				

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

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Clause 38

- (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates printed by C.P.W.D.
- (ii) Variations permissible on theoretical quantities:
 - (a) Cement
 - For works with estimated cost put to tender not more than Rs. 5 lakh. 3% plus/minus.
 - For works with estimated cost put to tender more than Rs.5 lakh. 2% plus/minus. N.A.
 - (b) Bitumen All Works N.A.
 - I Steel Reinforcement and structural steel sections for each diameter, section and category N.A.
 - (d) All other materials. Nil

1. For Composite Bids

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

1.2 The bid document will include following three components:

Part A:- CPWD-6, CPWD-7/8 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2023 as amended/modified up to date.

Part B:- General / specific conditions, specifications and schedule of quantities applicable to major component of the work.

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

1.3 The bidders must associate himself, with agencies as per NIT conditions.

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

1.5 After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two or more copies of agreement depending upon number of EE's/DDH in charge of minor components. One such signed set of agreement shall be handed over to EE/DDH in charge of minor component(s). EE of major component will operate Part A and Part B of the agreement. EE/DDH in charge of minor component(s) shall operate Part C along with Part A of the agreement.

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

1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.

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

1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of minor component.

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

- 1.10 The main contractor has to enter into MoU with agency(s) associated by him. Copy of such MoU shall be submitted to EE/ DDH in charge of each relevant component as well as to EE in-charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU/agreement with the new contractor associated by him.
 - 1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main contractor. The CMB shall be maintained independently by Engineer-in- Charge of major and minor components.
 - 1.12 A. The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components.
- 1.12B.Final bill of whole work shall be finalized and paid by the EE of major component.

Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.

ELIGIBILITY CRITERIA FOR ELECTRICAL WORKS

S/N	Minor component	Eligibility criteria
1	Electrical installation	The main executing agency has to associate with the el agency registered/enlisted in CPWD in appropriate category and he possesses valid electrical license, The main contractor is also be eligible to carry out himself/herself for electrical work without associating any agency, if he has valid electrical license.
2	Soler PV system	(a) Should have satisfactorily completed the works as mentioned below during the last Seven years ending last day of the month previous to the one in which tenders are invited. Three similar works each costing not less than Rs. 4,25,000/-*, or two similar works each costing not less than Rs. 6,37,000/-* or one similar work costing not less than Rs 8,49,000/-* Similar work shall mean works of SITC of grid connected Solar PV Power Plant complete*. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to previous day of last day of submission of tenders. (B) The agency shall be listed in updated ALMM list-II as per OM issued by the Ministry of new & renewable Energy vide letter no-283/34/2026-GRID solar

FORM -AA**CONSENT LETTER FROM ELIGIBLE ASSOCIATE AGENCY OF MINOR COMPONENT
OF WORK****(To be submitted for electrical work)****Name of work:-** **Replacement of GI Profile Sheet and False ceiling on existing training block at
PPDC Agra. (SH:- Electrical Work)**

Minor Component :- (Name of minor components)

I / We hereby give my consent to associate with M/s (Main Contractor), for
executing the minor component of work of (Mention sub work).

1. I / We will execute the work as per specifications and conditions of the agreement and as per directions of the Engineer –in-Charge for the corresponding minor work till the completion of the work.
2. I / We will be responsible for necessary action to handover the installations and for rectification of defects and repair during the defect liability/ warranty period.
3. Also, I / We will employ full time technically qualified Engineer / supervisor for the minor component of the work. I / We will attend inspection of officers of the department as and when required.

Date:

Signature (with date) of Major component Signature (with date) of Associate/ Minor Component

Contractor

Contractor

Address

Address

Witness with address

Witness with address

(From major component contractor side)

(From minor component contractor side)

FORM –BB**AFFIDAVIT OF MEMORANDUM OF UNDERSTANDING [M.O.U]**
(To be submitted for electrical component)

- 1] M/S [Name of the firm with full address]
Enlistment Status
Valid Upto:
[Henceforth called the main contractor]
And
- 2] M/S [Name of the firm with full address]
Enlistment Status
Valid Upto:
[Henceforth, called Associated Contractor]

For the execution of Electrical Work (Minor component)

Name of work:- **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH:- Electrical Work)**

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act [amended upto date] and the department [CPWD] can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows. Both the parties shall be paid consequent to the execution as per agreement to the extent this MOU permits. In case of any dispute, either of us will go for mediation/ arbitration by the **Engineer in Charge**. Any of us may appeal against the mediation to the competent authority, CPWD. His decision shall be final and binding on both of us.

We have agreed as under:

- 1] The Associated contractor will execute all electrical works in the wholesome manner as per terms and conditions of the agreement.
- 2] The Associated contractor shall be liable for disciplinary action if he failed to discharge the action[s] and other legal action as per agreement.
- 3] All the machinery and equipment's, tools and tackles required for execution of the works, as per agreement, shall be the responsibility of the Associated Contractor.
- 4] The site staff required for the electrical work shall be arranged by the Associated contractor as per terms and conditions of the agreement, failing which necessary recovery may be imposed as decided by the engineer in charge from the running account bill of contract.

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- 5] Site order book maintained for the said work shall be signed by the main contractor as well as by the Engineer of the Associated Contractor and by Associated Contractor himself.
- 6] All the correspondence regarding execution of electrical work shall be done by the department with the Associated Contractor with a copy to the main contractor. In case of non-compliance of the provisions of agreement, the main contractor, as well as the associated contractor shall be responsible. The action under clauses 2 and 3 shall be initiated and taken against the main contractor.

SIGNATURE OF MAIN CONTRACTOR
CONTRACTOR

SIGNATURE OF ASSOCIATED

Date:
Place :

Date :
Place :

Witness with address
(From major component contractor side)

Witness with address
(From minor component contractor side)

FORM-CC

WILLINGNESS CERTIFICATE

Name of work: - Extension of existing heat treatment workshop and other related work in PPDC Agra. (SH:- Electrical Work)

I hereby give my willingness to work as associated contractor for the above-mentioned work.

I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-in-Charge. Also, I will employ full time technically qualified supervisor/engineer for the works, failing which necessary recovery may be imposed as decided by the engineer in charge from the running account bill of contract. I will attend inspection of officers of the department as and when required.

Dated:

Signature of the associate Contractor

TERMS AND CONDITIONS for Electrical works

GENERAL TERMS AND CONDITIONS specific to E& M Component

1. All the works shall be carried out as per CPWD General specification for Electrical Works, Part-I (Internal)-2023; Part-II (External)-2023 amended up to date and should also comply with relevant provisions of the Indian Electricity Rules and Acts as applicable, amended up to date.
2. The contractor is advised to visit the site of work to have an idea of the execution of the work; failure to do so shall not absolve their responsibility to do the work as specified in agreement.
3. **Rates:**
 - I. The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work inclusive of all taxes including GST, duties, and levies etc. and all charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contractor, watch and ward of all materials for the work at site etc.
 - i. Prices quoted shall be firm.
4. ~~**Mobilization Advance:**~~
~~No mobilization advance shall be paid for the work, unless otherwise stipulated in tender papers for any individual works/ composite work.~~
5. **Completeness of Tender:**
All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.
6. **Works to be done by the contractor:**
Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost: -
 - i. Cutting and making good all damages caused during installation and restoring the same to their original finish.
 - ii. Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.
 - iii. Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/distribution gear items, cubicle switchboard etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.
 - iv. Testing and commissioning of completed installation.
 - v. Storage space for all equipment's, components and materials for the work
7. **Storage and Custody of Materials:**
The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the electrical installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space shall however be arranged by the department at site, if available.
The main contractor shall arrange for proper storage of the electrical fans and fittings at site and that double lock system shall be arranged for the fans and fittings after receipt at site until the time they are taken for installation. The contractor shall however be responsible for proper storage and safe custody of the same till their installation and handing over to the department.
8. **Electric Power Supply and Water Supply:**
Power and water supply will be arranged by the contractor at the site for installation and testing purpose. Contractor will take due care to ensure safety of electrical installation during execution of work.
9. **Tools for handling and Erecting:**
All tools and tackles required for handling of equipment's and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

10. Payment Terms: As per NIT**11. Co-ordination with other agencies:**

The contractor shall co-ordinate with all other agencies involved in the building work so that the building work is not hampered due to delay in his work. Recessed conduit and other works, which directly affect the progress of building work, should be given priority.

i. Care of buildings:

Care shall be taken by the contractor to avoid damage to the building during execution of his part of the work. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove, at his costs, all unwanted and waste materials arising out of his work, from the site.

12. Structural Alterations to Buildings:

- i. No structural member in the building shall be damaged/altered, without prior approval from the competent authority through the Engineer-in-charge.
- ii. Structural provisions like openings, cutouts, if any, provided by the department for the work, shall be used. Where these required modifications or fresh provisions are required to be made, such contingent works shall be carried out by the contract at his cost.
- iii. All such openings in floors provided by the department shall be closed by the contractor after installing the cables/conduits/rising mains etc. as the case may be, by any suitable means as approved by the Engineer-in-charge without any extra payment.
- iv. All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost to the original architectural finish of the buildings.

13. Addition to an installation:

Any addition, temporary or permanent, to the existing electrical installation shall not be made without a properly worked out scheme/design by a qualified Electrical Engineer to ensure that such addition does not lead to overloading, safety violation of the existing system.

14. Drawings:

- i. ~~After award of the work, the firm will be required to Preparation and submit Conduit Layout plan, wiring layout, positioning of ceiling fans, light fittings, Switch boards, power and light plugs, AC location, prepared on AutoCAD/ Shop coloured drawing of all electrical and mechanical services covered in the scope of this work before start of work by supplying of minimum 5 sets of coloured drawings on A3 paper size and after completion of work as built drawings by supplying of minimum 5 sets of coloured drawings on A3 paper size, providing PDF and Dwg file format in storage media/ pen drive complete as required for the proposed work including layout plan, conduit routes etc. Work will be carried out as per the approved drawings~~
- ii) The work shall be carried out in accordance with the drawings and the tender documents and also in accordance with modification thereto from time to time as approved by the Engineer-in-charge.
- iii) All wiring diagrams shall be deemed to be 'Drawings' within the meaning of the term as used in Clause 11 of the conditions of contract (PWD 7). They shall indicate the main switch board, the distribution boards (with circuit numbers controlled by them), the runs of various mains and sub mains and the position of all points with their controls.
- iv) All circuits shall be indicated and numbered in the wiring diagram and the points shall be given the same number as the circuit to which they are electrically connected.

15. Conformity to IE act, IE Rules, and standards:

1. All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 amended up to date (Date of call of tender unless specified otherwise). List of rules of particular importance to electrical installations under these General Specifications is given in Appendix C for reference.

16. General requirements of components:

1. **Quality of material:** All materials and equipment's supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

17. Inspection of materials and equipment's:

(a) Materials and equipment's to be used in the work shall be inspected by the departmental officers. Such inspection will be of following categories:-

- i. ——— Inspection of materials / equipment's may be witnessed at the Manufacturer's premises in accordance with relevant BIS /Agreement Inspection Procedure.
- ii. ——— To receive materials at site with Manufacturer's Test Certificate(s)
- iii. ——— To inspect materials at the authorized dealer's go downs to ensure delivery of genuine materials at site.
- iv. ——— To receive materials after physical inspection at site.
1. ——— Adequate care to ensure that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall ensure that:
 - (i) ——— Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.
 - (ii) ——— As and when the order is placed for the material, rising main, other main items etc., its copy shall be endorsed to the CPWD Engineer-in-charge.
 - (iii) ——— The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.
 - (iv) ——— Inspection at factory or at go down of the manufacturer, as required, shall be arranged by the firm for a mutually agreed date.
 - (v) ——— Delivery of material shall be taken up only with the consent of department, after clearance of the material.
 - (vi) ——— Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.

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

(d) Inspection of material shall be carried out as per CPWD Quality Assurance Policy & Checklist for E&M Services issued vide OM No. 51(4)/CE(E)/CSQ/2016/293 (Hindi) dated 31/03/2016.

18. Ratings of components:

- (a) All components in a wiring installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installations in which they are used.
- (b) All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current, which will normally flow through them, without their respective ratings being exceeded.

19. Conformity to standards:

- (a) All components shall conform to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.
- (b) Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance.

20. Interchangeability:

Similar parts of all switches, lamp holders, distribution fuse boards, Switch gears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation.

21. Workmanship:

- (a) Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.
- (b) Proper supervision/skilled workmen: The contractor shall be a licensed electrical contractor of appropriate class suitable for execution of the electrical work. He shall engage suitably skilled/licensed workmen of various categories for execution of work supervised by supervisors / Engineer of appropriate qualification and experience to ensure proper execution of work. They will carry out instruction of Engineer-in-charge and other senior officers of the Department during the progress of work.

©Use of quality materials: Only quality materials of reputed make as specified in the tender will be used in work.

(d) Fabrication in reputed workshop: Switch boards and LT panels shall be fabricated in a factory/workshop having modern facilities like quality fabrication, seven tank process, powder/epoxy paint plant, proper testing facilities, manned by qualified technical personnel. These shall be as per make / item approved.

22. Testing:

All testes prescribed in this General Specification, to be done before, during and after installation, shall be carried out, and the test results shall be submitted to the Engineer-in-charge in prescribed Performa, forming part of the Completion Certificate.

23. Commissioning on completion:

After the work is completed, it shall be ensured that the installation is tested and commissioned.

24. Completion plan and completion certificate:

(a) For all works completion certificate after completion of work as given in Appendix –E of CPWD Specification shall be submitted to the Engineer-in-charge.

(b) Completion plan drawing with all installation marking – three copies set (floor wise).

25. INTERPRETING SPECIFICATIONS

In interpreting the specifications, the following order of decreasing importance shall be followed in case of contradictions:

- (a) Schedule of quantities
- (b) Technical specifications
- (c) Drawing (If any)
- (d) General Specifications
- (e) Relevant BIS or other international code in case BIS code is not available.

26. Dismantled material: -

- i. Received from work shall be retained by the contractor and recovery shall be made from running bill as per schedule of Quantity
- ii. Not covered under above shall be returned to the department and deposited to JE(E) store.

TECHNICAL SPECIFICATIONS FOR IEI WORK

1. General

Scope of work:

The specifications given below pertain to the internal electrical installation work and CPWD Specifications are to be followed.

2.0 Point wiring:

2.1 The wires used for the point wiring and power wiring shall be of 650 / 1100 Volts grade FRLS PVC insulated multi stranded copper conductor single core cables as per IS 694.

2.2 All mounting boxes for modular plate type accessories shall be of metallic construction and of the same make as that of the modular plate type switches and accessories. Boxes shall be 60 mm deep, minimum 1.2 mm thick GI sheet, having earthing studs, neutral looping connector. All the connections / termination of wire/ cable shall be done either by using suitable thimbles or by soldering the multistranded wires. Cover plate of all the modular boxes shall be of metallic construction.

3.0 Copper and aluminium cables

3.1. This specification covers the supply, installation, testing and commissioning of 1100 V grade cables.

3.2 The design, manufacture and performance of the cables should conform to the relevant IS.

4.0 Moulded case circuit breakers

4.1 The MCCBs shall comprise single units of triple pole/four pole construction as specified, shall be rated for 415 V AC.

4.2 All live parts shall be totally enclosed and shrouded with a heat resistant moulded insulating material housing. Operating mechanism shall be quick make, quick break and trip free type.

- 4.3 The MCCB shall be provided with the following features in microprocessor release:
- Inverse-time-current tripping characteristics under sustained overload.
 - Instantaneous tripping on short circuit
- 4.4 MCCBs shall be of current limiting type.
- 4.5 The rated service breaking capacity (Ics) shall not be less than the ultimate short circuit breaking capacity ($I_{cs} = I_{cu}$)
- 4.6 Variable Thermal setting shall be provided in all MCCB s with thermal magnetic release.
- 4.7 All circuit breaker upto 250 amps rating shall be provided with thermal magnetic release and circuit breakers above 250 amps rating shall be provided with Microprocessor based release unless otherwise specified.

5.0 Additional Conditions:

5.1 Guarantee / Warrantee

The installation will be handed over to the department after necessary testing and commissioning. Warrantee for the other electrical fixtures except LED fittings shall be minimum one (1) year or more from OEM. The equipment's or components, or any part thereof, so found defective during guarantee period shall be forthwith rectified/ repaired or replaced free of cost, to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

5.2 The contractor shall submit the relevant test certificates at the time of supply of equipment/Material.

5.3 a. All the LED Bulbs/ LED Fittings shall be guaranteed for a period of 5 years and warrantee certificate shall be issued by authorised official of OEM and same shall be verifiable.

b. 50% of the Performance Guarantee shall be refunded to the contractor soon after the completion of the work and recording of the completion certificate.

c. 50% of the Performance Guarantee shall be retained as Security Deposit.

d. 50% of the Performance Guarantee retained as Security Deposit plus 2.5% Security Deposit already deducted from running bills (total 2.5+2.5=5%) shall be refunded year wise proportionately.

5.4 The material should be in new conditions and not older than 6 months.

ADDITIONAL CONDITIONS FOR E.I & FAN WORKS

1- The work shall be carried out strictly in accordance with CPWD General Specifications for Internal Electrical Works 2023 & External Work-2023 and in accordance with Indian Electricity Rules, 1956, Indian Electricity Act, 2003 as amended up to date and as per instructions of the Engineer-in-Charge including as below and nothing will be paid extra.

(a) All material shall be got approved from Engineer-in-Charge before use. One sample flat/Bay shall be made for approval of final location of switch boards/ fittings etc. and then only work shall be executed in other flats/bays.

All damages done to the building during execution of Electrical work shall be the responsibility of the contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. Any expenditure incurred by the department in this condition shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final.

(b) All hardware items such as screws, thimbles, G.I. wires etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned. All hardware materials such as nuts/bolts/screws/ washers etc. to be used in the work shall be zinc/cadmium plated iron.

(c) CONDUIT LAYOUT shall be prepared by contractor and got approved before execution of work. In case contractor does not do so before start of work, recovery @ 2(two)% of tendered amount of I.E.I. works shall be made from the bill. Minimum No. of Junctions to be kept, & if required junctions to be kept underneath the fitting locations in corridor/rooms so that junctions are not visible after fittings are fixed/in position. Drop of conduit shall be well planned w.r.t. location of fitting/D.B. and cress crossing to be avoided. All chases in walls shall be cut using electrical chisels/cutters. For this purpose, electricity shall be arranged by contractor. In case contractor fails to do chase cutting by electrical chisels/cutters and resorts to manual methods, a recovery of Rs.100/- per point shall be made from contractor's bill.

(d) Any conduit which is not to be wired by the contractor shall be provided with GI fish wire for wiring by some other agency subsequently. Nothing extra shall be paid for the same.

Termination of multi-stranded conductors shall be done using crimping type thimbles at both the ends. Nothing extra shall be paid for the same.

(e) All metal boxes to be applied primer and painted, then only should be installed else recovery @Rs.50/- per point should be made from contractor's bill. Boxes shall have socket arrangement for tightening screws, instead of simple holes in M.S. sheet. Boxes shall be again painted at the time of wiring.

(f) For Submain Wiring, Colour Code for different phases and Neutral (R.Y.B. black) to be maintained. While circuit wiring, wiring for fan point, wiring for light point shall be done with different colours for easy identification. Wiring for neutral shall be done with black colour and all connections to fans & fittings wherever visible shall be made with white PVC insulated copper wire or wherever cover sleeve may be provided. At Switch board, Switch shall be fixed in a logical manner w.r.t. fittings layout.

(g) All connections to MCB's shall be made using thimble/lugs.

All DB's i/c incoming & outgoing MCB's shall be suitably numbered with PAINT for location/circuits. DB shall be fixed in recess suitably (30 mm. approx. projected from un-plastered wall) to ease opening of door. Top of DB to match with door frame height as per site conditions.

(h) Phenolic laminated sheet shall be of white colour, and shall be filed/rounded at edges and of minimum 3mm thick.

(i) All fittings and fans should be properly earthed through the protective conductor.

Provision of earth bars in main boards, earth terminal block in DB's & earth studs in all metal boxes shall be made, connection to this stud shall be crimped.

A clamp type termination should be made in the termination of earth strips (where provided) to pipe electrodes to provide surface type contact.

(j) The earthing shall be carried out in the presence of the Engineer-in-charge or his authorized representative.

(k) The size at switch box for providing Modular Plate type Switch/Sockets shall be properly settled to take care of all necessary switches/screws/fan regulators. Blanking plate if required shall also be provided at no extra cost.

(l) For point wiring in steel conduit all modular type switches/sockets/telephone outlets/T.V. outlets shall be of only one make.

(m) Whenever supply items like fans & fittings etc. are also included in the Schedule of work, such items shall be executed only after completion of at least 75% of the wiring items.

(n) The contractor shall make his own arrangement at his own cost for electrical/ general tools and plants required for the work.

(o) All LED light fittings should have minimum 5year warranty, warranty certificate to be Submitted by agency on OEM letter head regarding this.

2- The work shall be carried out according to approved drawings/details which shall be subsequently issued to the successful tenderer for execution of work and as per instructions of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.

The work shall be carried out in engineering like manner. The bad workmanship will not be accepted and defects shall be rectified at contractor's cost to the satisfaction of the Engineer-in-Charge. The programme of electrical works is to be co-ordinated in accordance with the building work and no claim for idle labour will stipulate in the tender, electrical work shall have to be completed along with completion of civil work.

All the debris of the electrical works should be removed and the site should be cleared by the contractor immediately after the accruing of debris. Similarly, any rejected material should be immediately cleared off from the site by the contractor.

Watch and ward of the material/equipment shall be the responsibility of the contractor till handing over of installation to the department.

The contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.

3- The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department. However, if there is any delay in construction from the department side, the installation may be taken over in parts, but the decision on the same shall rest with Engineer-in-Charge which shall be a binding on the contractor.

Some of the items of work, if already executed: on that case the successful tenderer shall have to use these items for completing the work. For wiring, the existing conduit wherever required shall be used by the contractor. The recovery will be made for these items as accepted rate of similar items.

4- The secured advance as applicable shall be allowed.

5- Test certificate for the work carried out shall also be submitted, failing which recovery @0.5% of tendered amount & maximum of Rs.75000/- shall be made from final bill.

6- **Panels:** Drawing of all types of Elects. panel board shall be submitted for approval within 60 days from award of work and fabrication to be taken up only after approval of such drawing. Before painting proper surface, treatment shall be done and then powder coated. These shall be offered for inspection during fabrication.

7- Quantities indicated in Schedule of work are only tentative, contractor shall consult AE-in-Charge before procurement. Payment shall be made only for the quantities actually executed and measured.

8- **Time Period:** Contractor has to plan his activities, so that electrical work is to be carried out in close co-ordination with CIVIL work and in no case CIVIL work be delayed because of delay in electrical work and the work has to be completed accordingly.

9- The makes for items shall be as per list attached.

10- **Storage:** -Responsibility for storage space for execution of work shall be of main contractor.

11- **Power & Water Supply:** - Responsibility for supply of power & water for execution of work shall be of main contractor.

12- Material to be used in the work shall be strictly as per list of make attached. The material in required quantity to be used in the work shall be got approved along with necessary technical data sheet from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not as per specifications.

13- Contractor shall preserve the copies of invoices, test certificates, gate passes etc. to prove the genuineness of material/purchases. The responsibility of procurement, genuine material of specialized works shall rest with the contractor.

14- Contractor is advised to visit site before quoting rates for determining site conditions. No claim or argument shall be entertained in this regard at later stage.

15- Required repairing and finishing work is to be done by agency after installation of split air conditioners.

16- No inspection outside the country is permissible if required so the same will be deemed to be waived off and necessary test reports shall be submitted before the dispatch of equipment.

EQUIPMENT TECHNICAL SPECIFICATION

Solar PV Module (Electrical Features)

- 1) Solar PV module array will be made by utilizing mono Crystalline high efficiency Silicon Solar PV cells. Minimum power output guarantee offered for the SPV Module shall not be less than 25 years. Individual solar module rating will not be less than 330 Wp at Standard test conditions. Each Solar PV module offered shall meet following min. requirement.

Efficiency of cell, $E_{f,c}$ - >18%

Efficiency of module, $E_{f,m}$ - >16.5%

- 2) SPV module conversion efficiency should be equal to or greater than 18.0% (cell) under STC of irradiance of 1000w/sqm and cell operating temp of 25 degree C and air mass (AM) 1.5 spectrum. Modules must qualify to relevant IEC standards Part I and II for safety qualification testing.
- 3) Note: I-V curve of each PV module with Sl. Nos. should be submitted along with modules. Solar PV modules shall conform to IEC-61215 standards. Documentary evidence towards IEC-61215 certification shall be submitted after award of work before approval. Minimum following parameters should be provided:
 - (a) Maximum Power, P_{max}
 - (b) Minimum Power, P_{min}
 - (c) Open Circuit Voltage, V_{oc}
 - (d) Short Circuit Current, I_{sc}
 - (e) Voltage at Max Power V_{mp}
 - (f) Current at Max power I_{mp}
 - (g) Fill Factor, FF
 - (h) Efficiency of cell, $E_{f,c}$
 - (i) Efficiency of module, $E_{f,m}$
- 4) Necessary I-V curves at 25c, 45c, 60c and at NOCT are required to be furnished after award of work. Offers to provide PV module warranty of 25 years with not more than 10% degradation in performance/output over 10 years.
- 5) The rated output power of any supplied module shall not have negative tolerance.

Solar PV Module (Mechanical Features)

- 6) Solar PV Module design will conform to following Mechanical requirement

- (a) Toughened, anti-reflective, low iron content, high transmissivity front glass.
- (b) Anodized Aluminium Frame
- (c) Ethyl Vinyl Acetate (EVA) encapsulate
- (d) Silicon edge sealant around laminate
- (e) Tedlar / Polyester trilaminate back surface
- (f) ABS plastic terminal box for the module output termination with gasket to prevent water moisture.
- (g) Resistant to water, abrasion, hail impact, humidity & other environment factor for the worst situation at site.
- (h) By pass diode.
- (i) Except where specified, the front module surface shall consist of impact resistant, low-iron and high-transmission toughened glass.
- (j) The module frame, if any, shall be made of a corrosion-resistant material which shall be electrolytically compatible with the structural material used for mounting the modules.
- (k) The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP65 rated

Module mounting structure

- 7) Wherever required, suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design either I or L sections.
- 8) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Galvanizing should meet ASTM A-123 hot dipped galvanizing or equivalent which provides at least spraying thickness of 80-100 microns on steel as per IS-5905, if steel frame is used.
- 9) Structures shall be supplied complete with all members to be compatible for allowing easy installation at the ground site.
- 10) The structures shall be designed to allow easy replacement of any module & can be either designed to transfer point loads on the ground as per site conditions and design to be approved by CPWD.

- 11) Each structure shall have a provision to adjust its angle of inclination to the horizontal as per the site conditions by way of Manual operation.
- 12) Each panel frame structure be so fabricated as to be fixed on the ground. The structure should be capable of withstanding a wind load of Min. 47 meter per second as per IS - 875 after grouting & installation. The front end of the solar array must be one meter above the ground. Grouting material for SPV structure shall be as per M 15(1:2:4) concrete specification.
- 13) The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the Contractor shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of Goods.
- 14) The Contractor shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;
 - (a) Determination of true south at the site;
 - (b) Array tilt angle to the horizontal, with permitted tolerance;
 - (c) Details with drawings for fixing the modules;
 - (d) Details with drawings of fixing the junction/terminal boxes;
 - (e) Interconnection details inside the junction/terminal boxes;
 - (f) Structure installation details and drawings;
 - (g) electrical grounding (earthing);
 - (h) Inter-panel/Inter-row distances with allowed tolerances; and
 - (i) Safety precautions to be taken.
- 15) The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the ground columns properly. All nuts and bolts shall be of very good quality stainless steel. Detailed design and Drawing shall have to be submitted to CPWD for acceptance and approval before execution of work.

NOTE: The structural design of the complete system should be compatible with the structural strength and load bearing capacity of the site/ ground, design calculations and certificate to this effect shall be provided by a qualified chartered structural engineer.

- 16) The array structure shall be made of hot dip galvanized MS angles of size not less than 50mm x 50mm x 6mm size. The minimum thickness of galvanization shall be at least 70 microns. All nuts & bolts shall be made of good quality steel.
- 17) The work should be completed with supply, fitting fixing of clamps, saddles, nut & bolts etc. While quoting the rate, the bidder may mention the design & type of structure offered. All nuts & bolts shall be made of very good quality steel.
- 18) The structure shall be designed to allow easy replacement of any module and shall be in line with site requirements.
- 19) The structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly. There shall be no requirement of welding or complex machinery at site.
- 20) The array structure shall be so designed that it will occupy minimum space without sacrificing the output from SPV panels & shall withstand heavy winds.
- 21) The supplier / manufacturer shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings.
- 22) The agency shall provide an elevated structure, wherever required as per site conditions, with
G.I. pipe as per the drawing duly approved by the department. The agency shall also obtain the certification from the structural Engineer for withstanding a wind speed of 47 meter per second.

Junction Boxes

- 23) The junction boxes shall be dust, vermin and waterproof and made of FRP / Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper size. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable marking shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. The junction boxes shall have suitable arrangement for the following:

- (a) Combine groups of modules into independent charging sub- arrays that shall be wired to the controller.
- (b) Provide arrangement for disconnection for each of the groups.
- (c) Provide a test point for each sub-group for quick fault location.
- (d) To provide group array isolation.
- (e) The rating of the JB"s shall be suitable with adequate safety factor to
- (f) inter connect the Solar PV array.
- (g) Metal oxide varistors shall be provided inside the Array Junction Boxes.

Power Conditioning Unit(PCU):

- 24) The PCU is a combination of Inverter, AC Charger and data logger all housed in a single unit. Maximum power point tracker (MPPT) shall be integrated into the PCU to maximize energy drawn from the solar PV array. MPPT shall be microprocessor/micro controller based to minimize power losses and maximize energy utilization. The efficiency of MPPT shall not be less than 93%.
- 25) PCU shall include self-protective and self-diagnostic features to protect itself and the PV array from damage in the event of PCU component failure.
- 26) Power conditioning unit will comply the following requirements.
 - (a) 415V AC + 5% 50Hz, 3 Phase
 - (b) Overload capacity – 150% for 60sec.
 - (c) Output wave shape: sine wave with <3% total harmonic distortion (THD).
 - (d) Adjust the Voltage and Frequency Levels to suit the MAIN LT panel/feeder pillar BUS near the individual building.

MODES OF PCU

27) STAND BY MODE:

The control system shall continuously monitor the output of the solar power plant until pre-set value is exceeded and that value to be indicated.

BASIC SYSTEM OPERATION (FULL AUTOMODE):

- 28) The system shall automatically 'wake up' in the morning and begin to export power provided there is sufficient solar energy and the grid voltage and frequency is in range.

SLEEP MODE:

- 29) Automatic 'sleep' mode shall be provided so that unnecessary losses are minimized at night. The power conditioner must also automatically re-enter standby mode when threshold of standby mode reached.

INVERTER

- 30) The inverter output shall always follow the grid in terms of voltage and frequency. This shall be achieved by sensing the grid voltage and phase and feeding this information to the feedback loop of the inverter. This control variable then controls the output voltage and frequency of the inverter, so that inverter is always synchronized with the grid. The grid islanding shall be ensured.

The typical specification of PCU is listed below:

S. No	AC side	As per Tender design
I.	Nominal AC Power	as approved by the engineer in charge
II.	Output AC Voltage (as per manufacturer practice	415 V+/- 10%
III.	Frequency	50 Hz
IV.	Total harmonic distortion	< 3% at nominal power
V.	AC over / under voltage over voltage / under frequency protection.	Yes
VI.	Phase Shift (COS Phi)	1
	DC Side	
VII.	PV Power	Min 330 WP
VIII.	Maximum DC Voltage	800 V
IX.	MPPT Voltage range	350 V - 800 V
	Maximum DC Current *	
X.	DC voltage ripple	<3%
XI.	DC over voltage protection	Yes
	Other Parameters	
XII.	Minimum efficiency (CE)	>97%
XIII.	Ambient temperature	0-50° C
XIV.	Humidity (non-condensing)	95%
XV.	Degree of protection for enclosure	IP 54
VI.	Dimension / Weight	As per Manufacture design.
VII.	Noise level	< 65 dBA
VIII.	Cooling	Natural Air
XIX.	Input Range	420-850 V DC
XX.	Power Factor	0.99
XI.	Input / Output cable Termination	Top/ as per manufacturer

Other important Features/Protections required in the INVERTER

- 31) Automatic morning wake-up and night shutdown
- 32) PCU must have the feature to work in tandem with other similar PCUs and be able to be successively switched ON and OFF automatically based on solar radiation variations during the day.
- 33) Mains (Grid) over-under voltage and frequency protection

Fool proof protection against ISLANDING.

- 34) Included authentic tracking of the solar array ,s maximum power operation voltage (MPPT).
- 35) Array ground fault detection.
- 36) LCD and piezoelectric keypad operator interface Menu driven Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
- 37) MOV type surge arresters on AC and DC terminals for over voltage protection from lightning-induced surges
- 38) INVERTER should be rated to operate at 0–55 deg. Centigrade unless provision for air conditioning is included in INVERTER
- 39) All parameters should be accessible through an industry standard communication link.

Protection against lightning

- 40) Surge voltage induced at output due to external source Set point pre-selection for VAR control Remote control via telephone modem or mini web server Integrated protection in the DC and three phase system Insulation monitoring of the PV array Ground fault detector – which is essential for large PV generators in view of appreciable discharge current with respect to ground.
- 41) Over voltage protection against atmospheric lightning discharge to the PV array is required.
- 42) The power conditioner must be entirely self-managing and stable in operation. A self-diagnostic system check should occur on startup. Functions should include test of key parameters on startup.

DC distribution board/Array Junction Box

- 43) DC distribution board shall be provided in between solar array and PCU. The junction boxes shall be made of FRP / Thermo Plastic with impact resistant transparent cover, waterproof, dust free, vermin with IP65 protection. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable Glands of appropriate sizes for both incoming and outgoing cables. Suitable

markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. Array junction box shall have suitable reverse blocking diodes of minimum DC blocking voltage of 800 V with suitable arrangement for its connecting. The array box shall also have suitable surge protection.

- 44) The junction boxes shall have suitable arrangement for the following: Combine groups of modules into independent charging sub-arrays that shall be wired to the controller. Provide arrangement for disconnection for each of the groups.
- 45) Provide a test point for each sub-group for quick fault location. To provide group array isolation. The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.

By pass Diode

- 46) Fuses of suitable rating for Overloading protection of array section.

Surge protection system

- 47) The DIN channel mountable pluggable surge protection shall be installed in a network configuration, consisting of a single block MOV (Metal Oxide Varistor) based surge arrester having nominal surge handling capacity of 15 KA 8/20 μ s & maximum surge handling capacity of 30 KA 8/20 μ s to provide protection between (L+, L-, earth). All surge arresters in these network configurations shall be of same manufacturer. The Protection unit shall be based on Single block High-Capacity Metal Oxide Varistors (MOV), capable of handling 15 KA 8/20 μ s surges and shall be able to give an indication in the event module failure and shall be pluggable to facilitate the on-site replacement without disturbing the lines. One extra set of replacement protective device shall be furnished to the job site. Protection shall be manufactured to withstand a maximum continuous operating voltage of not less than 115% of normal RMS system voltage

AC Distribution Board (ACDB)

- 48) AC DB shall be provided in between PCU and loads.

APPROVAL & CLEARANCE

- 49) All associated activities required for necessary clearances / permissions / approvals / licenses from concerned Electrical authorities so their govt / strategy / Local bodies are in the scope of contractor.

EARTHING AND PROTECTION

50) The array structure of the PV plant at roof top shall be grounded properly using adequate number of earthing kits. All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant. Earthing shall be in line with IE rules. The earthing & grounding shall also meet the requirement of PV module/cell manufacturer. Detailed specifications have been provided in the Earthing section.

Cable and accessories

51) All the cables shall be supplied conforming to IS 694 & shall be of 650 V/ 1.1 kV grade as per requirement. Only FRLS PVC copper cables shall be used. The size of the cables between array interconnections, array to junction boxes, junction boxes to DCDB, DCDB to PCU and PCU to main grid (DISCOM) etc. shall be so selected to keep the voltage drop and losses to the minimum and all cables are included in the scope of work. For DC connections, the cable shall be of XLPO type Solar cables.

52) Bidders are required to mention each size of cables used and should consider their resistance / impedance in the design optimization. Such calculation should be submitted along with the bid. The contractor shall supply all cables, installation accessories, which are required to install and successfully commission the power plant.

Space for Solar Array and Control room

53) The bidder shall give the details of array layout before execution for approval.

54) Bidders are advised to visit the site and conduct a survey for deciding the most suitable layout from the installation & maintenance point of view.

Type tests

55) Type test reports of all major equipment (Solar modules & PCU) shall be submitted to the Engineer in Charge. The type test report shall be within 5 years from bid opening date, in absence of which fresh type test shall be done without any extra cost.

Installation and commissioning

56) Detailed project execution program shall be submitted along with the offer. The contractor will be responsible for arranging all tools & plants for installation and commissioning the complete system.

- 57) The contractor shall also submit the erection, testing & commissioning procedure for approval to the owner. These procedures will form integral part of the acceptance report for successful erection and commissioning the system. These reports will be prepared and signed by contractor's representative & representative of Client/CPWD.

Packing, shipping and marking

- 58) The bidder shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment, packaging and shipping costs shall be borne by the supplier.

Insurance

- 59) The bidder shall provide insurance coverage ex-factory until commissioning and acceptance for replacement of repair of any part of the consignment due to damage or loss.

Inspection

- 60) All major equipment like solar PV modules shall be inspected by the Engineer- In- Charge or his representative before their dispatch. For other items, the contractor shall obtain the prior approval before dispatch.
- 61) The contractor shall obtain approval for all equipment drawings & data sheets from the Engineer- In- Charge before commencement of the manufacturing / procuring / outsourcing.

Training & after sales service

- 62) Training and after sales service is an important component of supply and is included the scope of work. An explanation of preventative maintenance schedule, plan of operation, scope and implementation of the after sales service shall be imparted to the Operating personnel of the Client/ CPWD.

Documentation

- 63) Three sets of installation manual / user manual shall be supplied along with each power plant. The manual shall include complete system details such as array layout, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals. The contractor shall supply three sets of soft copies (in CD form) of all documents including drawings and user manual and three sets in hard copy.

Standard to be followed:

- I. PV Modules IEC 61215/ IEC61730
- II. Power Conditioners IEC 61683/ IEC60068-2
- III. Charge Controller/MPPT Units: IEC 62093/ IEC 60068-2 Cables IEC 60189/ IS 694/ IS7098

**1. SPECIFICATIONS FOR PV PANEL
SUPPORT/MODULE MOUNTING STRUCTURE**

Sl. No	Description	Specification Requirement
1	Material	Hot dip galvanized steel with min. 70 micron galvanizing Or as per manufacturer Standard Capable of with stand wind pressure as stipulated.
2	Thickness of member	Suitable wind Speed of 47 meter per second. STAAD analysis to be submitted.
3	Over all dimensions	As per manufacturer standard
4	Wind rating	47 meter per second
5	Tilt angle and adjustment	Tilt angle shall be calculated to provide the maximum annua energy output to take maximum insulation. This shall be decided based on the location of array installation.
6	Pitch of structure	Max. 7 Mtr or as per manufacturer standard
7	Hardware & fastener	SS 304
8	Foundation	The foundation of the array mounting structure / elevated structure shall be provided with 1:2:4 CC design as certified by the Structural consultant and approved by the department. The minimum clearance between roof slab and panel shall be 600 mm

2. PLANT METERING / DATA LOGGING

PV array energy production: Digital Meters to log the actual value of AC/ DC Voltage, Current One-way LT energy meter (Export metering) Class 0.2S ABT Compliant shall be incorporated in the system on the main AC Grid supply complete with electrical switchgear in the main plant.

3. DANGER NOTICE BOARDS

Danger notice boards should be provided as and where necessary as per IE Act / IE rules as amended up to date.

SCHEDULE - A

TECHNICAL PARTICULARS

*(TO BE SUBMITTED AT THE TIME OF APPROVAL OF SOLAR PV EQUIPMENT/
MATERIAL)*

Name of work: **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC
Agra. (SH:- Electrical Work)***

Name of Contractor:

Agreement Number:-

Date of put up to competent authority:

Expected delivery period after getting approval: -

(A) Solar PV Module

S. No.	Details of Particulars	To be filled by the executing agency
2.	Rated power range output at STC	
3.	No. of solar cells in each solar PV module	
4.	Voc/Isc	
5.	MPP Voltage (Vmpp) V	
6.	MPP current (imp) A	
7.	Normal operating cell temperature	
8.	Operating Temperature range	
9.	Module dimensions (LxWxH) Appx.	
10.	PV Module type	
11.	Min. efficiency of solar cell	
12.	Solar module frame material	
13.	Weather resistant junction	
14.	Front Glass	
15.	Glass iron content	
16.	glass transmissivity	
17.	Frame	
18.	Encapsulation	
19.	Trilaminate back surface	
20.	By-pass diode	
21.	Standard	

(Signature of the Contractor)

TECHNICAL PARTICULARS

(TO BE SUBMITTED AT THE TIME OF APPROVAL OF SOLAR PV EQUIPMENT/
MATERIAL)

Name of work: **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC
Agra. (SH:- Electrical Work)***

Name of Contractor:

Agreement Number:-

Date of put up to competent authority:

Expected delivery period after getting approval:-

B- Solar Inverter

S. No.	Details of Particulars	To be filled by the executing agency
1	Type	
2	Max. DC Array Input Voltage	
3	DC voltage tolerance	
4	Type of solar charge controller	
5	Switching Device	
6	Continuous inverter output rating	
7	Output wave form	
8	total harmonic distortion	
9	Nominal AC output voltage and frequency	
10	Output frequency	
11	Grid frequency tolerance	
12	Grid frequency synchronization range	
13	No-Load losses	
14	Power factor	
15	PCU efficiency	
16	Noise level	
17	Certifications	
18	Idle current	
19	Regulation	
20	Over load features	
21	Cooling	
22	Operating Temperature	
23	Relative Humidity	
24	LED/LCD display	
25	Data Monitor and display controls	
26	Protections	
27	Enclosure Protection Safety	
28	Warranty	

(Signature of the Contractor)

TECHNICAL PARTICULARS

(TO BE SUBMITTED AT THE TIME OF APPROVAL OF SOLAR PV EQUIPMENT/
MATERIAL)

Name of work: **Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC
Agra. (SH:- Electrical Work)***

Name of Contractor:

Agreement Number:-

Date of put up to competent authority:

Expected delivery period after getting approval:-

(C) Array Junction Box (DCDB)

S. No.	Details of Particulars	To be filled by the executing agency
1	No. of module in series	
2	No. of module in parallel	
3	Switch gears	
4	Connectors	
5	Wiring	
6	Enclosure Protection	
7	Enclosure	
8	Size	
9	Capacity of each SPV panel and nos.	

(Signature of the Contractor)

(D) PANEL SUPPORT/MODULE MOUNTING STRUCTURE

S. No.	Details of Particulars	To be filled by the executing agency
1	Material	
2	Thickness of member	
3	Over all dimensions	
4	Wind rating	
5	Tilt angle and adjustment	
6	Peach of structure	
7	Hard wears & fastener	
8	Foundation	

(Signature of the Contractor)

LIST OF PREFERRED MAKES

1. Unless otherwise specified, the brand/make of the material as specified in the item nomenclature, in the particular specifications and in the list of preferred makes attached in the tender, shall be used in the work.
2. In case of non-availability of the brand specified in the contract the contractor shall be allowed to use alternate equivalent brand of the material subject to submission of documentary evidence of non - availability of the specified brand.
3. Materials shall be used at site only after approval of the sample by the engineer-in-charge.
4. The Contractor shall submit following for sample approval: -
 - i) At least two physical sample of items from preferred make list.
 - ii) Wherever physical sample submission is not possible for proposed items, the contractor shall submit technical data sheets of minimum two makes from the preferred make list.

S. No	Description of Item	Preferred Make/ Model
1.	FRLS PVC INSULATED COPPER WIRES I/C CONTROL CABLES, TV/ TELEPHONE CABLE/ ARMOURED POWER CABLE	Havells /Finolex/RR kabel /Polycab/ KEI/ Grandlay/ AKG/BATRA Henley/HPL/Grandlay
2.	XLPE INSULATED PVC SHEATHED ALUMINIUM/ COPPER ARMOURED POWER CABLE	Havells /Finolex/ RR kabel /Polycab/ KEI/ Grandlay/ AKG /BATRA Henley/HPL/Grandlay
3.	Modular Switches/ Sockets/ T.V. outlet / Telephone Outlet / fan regulator/ bell push/ cover plate	LEGRAND (MYRIUS), SCHNEIDER (OPALE), MK (CITRIC), PANASONIC (EUROPA), L&T (ENGLAZE), ABB: Tvisha, Honeywell
4.	Steel conduit/ PVC conduit WITH ISI marked accessories	AKG/ VIMCON/ RMCON/ Steel Kraft
5.	Base plate to mount the switch socket etc. on modular box	Same as make of switch with metallic base
6.	Modular box	Same as make of Modular switch/socket
7.	Piano type Switches/ Sockets/ T.V./Telephone Outlet / fan regulator	ISI marked compatible with existing installation or as decided by the engineer in charge
8.	All type LED fitting	Lighting Technologies/Philips/ Havells/ / Trilux /jaquar/Wipro/Twinkle
9.	MCBs/ MCB DB, /loose wire box/ DP Enclosure	Schneider electric / Legrand / L&T / Siemens – , Honeywell/Hager /ABB/HPL
10	Geyser	Havells/Crompton/Bajaj/Recold
11	MCCB/	Schneider electric / Legrand / L&T / Siemens – , Honeywell/Hager /ABB/HPL

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S. No	Description of Item	Preferred Make/ Model
12	Ceiling Fan/Exhaust Fan/Fresh Air Fan/wall fan/other fan	Usha / Crompton / Havells/ Atomberg/ Orient
13	Octagonal GI Pole	Havells//Trilux/Halonix/Wipro/Crompton/ Twinkle/Bajaj
14	Electrical Panel	ADLEC control system/RP Control/Precision /Neptune/ Sterling Wilson/Tricolite electrical industries
15	Pole connection box/SMC box	Hensel/spelsberg/Neptune-bals/sintex
16	DWC HDPE pipe	JP polyplast/Berlia electricals/Tirupati/Supreme industries/Finolex industries/APL Apolo tubes
17	Accessories/Connecters	MC/ Tyco/ Solarlok/ havells
18	Digital Meters	Conzerv / L&T / AE / Schneider/ Siemens
19	LT Jointing Kit / Termination	Raychem / M – Seal / 3M
20	Double compression Cable Glands with earthing links	COMET/ DOWELLS / JAINSONS
21	UTP Data Cable	Systimax/ Molex/ Penduit
22	GI pipes	SAIL / Jindal-Hissar/ TATA
23	Phenolic laminated sheet	Hylam/ Greenlam
24	Manufactures of Solar PV Cells and Modules	Approved As per prevailing OM / List of MNRE Approved by Engineer In charge as per Tender Specifications
25	String Inverter / PCU	Kaco/ Delta/ ABB/ Emerson/ Techser / Havells
26	Combiner Boxes DC Junction Board and Sub Junction Box	Hensel / Eltso / VNT / Techser / OBO/ OEM of SPV Modules
27	Energy Meter / Net Meter / Bidirectional Meter	As Approved Makes of Local utility department (Torrent)
28	ANY OTHER MATERIAL	With prior approval of Engineer-in-charge.

NOTE:- Intending bidders are advised to visit site and read conditions of NIT and submit bid accordingly.

Schedule of work					
Name of Work:- Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH:- Electrical Work).					
S. No.	Description of Items	Qty	Unit	Rates	Amount
1	Dismantling of existing solar power plant installed over roof, including safe removal of solar panels, wiring, and associated components and storing them at suitable place as per site conditions and direction of Engineer-in-Charge etc complete as required.	80	Kwp	1346	1,07,680.00
2	Installation Testing, commissioning, and putting into operation of the solar power plant after reinstallation, including checking of all electrical connections, continuity and insulation resistance testing of cables, earthing verification, inverter configuration, synchronization with grid (if applicable), trial run, performance testing, and ensuring proper functioning of complete system. The work includes submission of test reports and handing over the system in fully operational condition as per the direction of Engineer-in-Charge etc complete as required.(Cost of GI/Aluminium structure for fixing of Solar panels not included)	80	Kwp	2443	1,95,440.00
3	SITC of GI structure in the form of C channel,angle of suitable size for installation of solar panels system of 80 Kwp capacity including all accessories etc complete as required.	2475	Kg	120	2,97,000.00

4	Supplying Installation, Testing and Commissioning of High Energy Efficiency Solar Photovoltaic Module of capacity 330 Wp or above, manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730- Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 23% at STC with temperature coefficient of Pmax better than -0.30% per 0C. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. Solar Modules shall be designed to operate in relative humidity upto 100% with temperature between -10 0C and +85 0C. Further, each PV module used in any solar power project must have Radio frequency identification tag with information such as name of manufacturer, month and year of manufacturing, country of origin (separately for Solar cell and module), I-V curve, Unique Serial No and Model No of the module, Wattage, Im, Vm and FF, name of test lab issuing IEC certificate etc as required	8	Kwp	40769	3,26,152.00
5	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.				
5.1	Group C	16	Pts	1064	17,024.00
6	Rewiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in Existing surface/ recessed steel/PVC conduit, and earthing the point with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
6.1	Group C	24	Pts	716	17,184.00

7	Supplying, installation, Testing & Commissioning of Panel light 2x2 ft., of following body material and construction as per IS : 10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 0C to 40 0C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10% , P. F.≥0.95, IP20, CRI >80, UGR (Unified Glare Rating) < 19, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with, 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. 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 ≥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)				
7.1	36 watt	40	Each	2508	1,00,320.00
	Total				10,60,800.00

Central Public Work Department					
NIT NO. 27/EE/AGRA/2026-27					
Name of Work: Replacement of GI Profile Sheet and False ceiling on existing training block at PPDC Agra. (SH: Civil and Electrical Works).					
Estimated Cost put to tender (Rs.)			Rs.26,74,131/-		
Performa for quoting the rates					
Name of Contractor:-					
S. No.	Name of Component	Estimated cost	Percentage above or below the estimated cost	%age in figures	Total Cost
1.	Civil Work	Rs. 16,13,331.00			
2.	Electrical Work	Rs. 10,60,800.00			
	Total Cost	Rs. 26,74,131.00			

1. Only one of the options is to be filled. More than one option shall be rejected.
2. Rate filled in any form shall be considered only in %age.
3. Rate filled at any other place in the document shall not be considered.