



भारतसरकार
GOVERNMENT OF INDIA
केंद्रीयलोकनिर्माणविभाग
CENTRAL PUBLIC WORKS DEPARTMENT
कार्यालयकार्यपालकअभियंता, असमविमाननमंडल
OFFICE OF THE EXECUTIVE ENGINEER,
ASSAM AVIATION DIVISION,
गुवाहाटी – ७८१०१५
GUWAHATI – 781015



e-NIT
ई-निविदाआमंत्रणसूचना
e-NIT No. : 10/NIT/CE/GHY/2026-27

Name of work : “Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”

Estimated Cost : Rs.8,05,05,206.00
Civil Component : Rs.5,92,52,840.00
Electrical Component : Rs.2,12,52,366.00
Duration : 18 (Eighteen) Months.

Chief Estimator (E)	Assistant Engineer (E)	Assistant Engineer (C)	Executive Engineer (P)
O/o the CE, Guwahati	O/o the CE, Guwahati	O/o the CE, Guwahati	O/o the CE, Guwahati
CPWD, Guwahati – 35	CPWD, Guwahati – 35	CPWD, Guwahati – 35	CPWD, Guwahati – 35

Issued by

CHIEF ENGINEER, GUWAHATI
CENTRAL PUBLIC WORKS DEPARTMENT
GARCHUK, GUWAHATI – 781035

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

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NIT NO. :-10/NIT/CE/GHY/2026-27

Name of Work:- “Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”

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Certified that the Percentage bid document contains pages contains **1 to 173pages**, in chronological order

This N.I.T. is approved for **Rs.8,05,05,206.00 (Rupees Eight Crores Five Lakhs Five Thousands Two Hundred & Six) only.**

.....
This tender is uploded on CPWD website [CPWD eTendering \(https://etender.cpwd.gov.in\)](https://etender.cpwd.gov.in) **NEW**

.....
Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

PART - A

CPWD-6 FOR e-TENDERING

1. ~~Item rate/percentage rate bids are invited by Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015 on behalf of President of India from approved and eligible contractors of CPWD (B&R) and those of appropriate list of M.E.S., BSNL, Railway and..... State P.W.D. (B&R) or State Govt.'s Department (strike out as the case may be) dealing with building and roads, if there is no State PWD (B&R) for the Work of "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."~~

The enlistment of the contractors should be valid on the last date of submission of bids.

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

- 1.1 The work is estimated to cost **Rs.8,05,05,206.00 (Civil Rs.5,92,52,840.00 + Electrical Rs.2,12,52,366.00)**. This estimate, however, is given merely as a rough guide.

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

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

- 1.2.1 ~~Conditions for Non-CPWD registered contractors only, if bids are also open to non-CPWD Contractors.~~

~~For works estimated cost upto tendering limit of class I Buildings & Roads (erstwhile Composite/ Building/ infrastructure) category Contractor (However, for Horticulture category, it may be modified as per bidding limit of CPWD class I contractors of Horticulture category).~~

- (i) ~~Three similar works each of value not less than Rs..... or two similar works each of value not less than Rs..... or one similar work of value not less than Rs..... (all figures rounded to nearest convenient figure) during the last 7 years ending last day of the month previous to the one in which tenders are invited.~~

- (ii) ~~For EPC tender under Mode I/II only (Applicable for CPWD enlisted contractors of appropriate class also).~~

~~One completed work costing not less than Rs. executed with the structural system technology as proposed by bidder in the letter of transmittal during the last 7 years ending last day of the month previous to the one in which tenders are invited. This work can be part of eligible work at 1.2.1 (i) above or as a separate work.~~

Note: ~~For works costing above tendering limit of class II Buildings & Roads (erstwhile Composite/ Building/ infrastructure) category contractors but upto tendering limit of Class-I~~

~~Buildings & Roads (erstwhile Composite/ Building/ infrastructure) category Contractor (However, for Horticulture category, it may be modified as per bidding limit of CPWD class II and CPWD Class I contractors respectively of Horticulture Category) when bids are open to non-CPWD contractors also, then class II contractors of CPWD registered shall also be eligible if they satisfy the eligibility criteria specified in 1.2.1 above.~~

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

~~For works estimated to cost above the tendering limit of class I (Super) Buildings & Roads (erstwhile Composite/ Building/ infrastructure) category Contractor (However for Horticulture category, it may be modified as per bidding limit of CPWD class I contractors of Horticulture Category).~~

- ~~(i) Three similar works each of value not less than Rs..... or two similar works each of value not less than Rs..... or one similar work of value not less than Rs..... (all figures rounded to nearest convenient figure) during the last 7 years ending last day of the month previous to the one in which tenders are invited.~~
- ~~(ii) For EPC tender under Mode I/II/III and for all construction works (Applicable for CPWD enlisted and non-CPWD contractors).~~

~~One completed work costing not less than Rs executed with the structural system technology as proposed by bidder in letter of transmittal during the last 7 years ending last day of the month previous to the one in which tenders are invited. This work can be part of eligible work at 1.2.2 (i) above or as a separate work.~~

~~Or~~

~~If the bidder does not have adequate experience of opted technology then the bidder can associate with contractor having requisite experience of executing work in structural system with the opted technology. Bidder has to submit MoU in the prescribed format (Anexure 68 of SOP) with such associate contractor, along with his tender, for structural system in opted technology only. The associated contractor must satisfy the eligibility criteria of having successfully completed one work of opted technology having the cost of structural system not less than 20% of the estimated cost put to tender during the last seven years ending last day of month previous to the one in which tender is invited.~~

~~In case separate cost of structural system of a particular technology is not available in the experience certificate of associated contractor, it will be taken as 30% of completed cost of project/work.~~

~~Associated contractor should not have been debarred from any Ministry or any govt. organization in the last five years.~~

~~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 bid.~~

~~To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under:-~~

~~I/We undertake and confirm that eligible similar works(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 bidding 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. (Scanned copy to be uploaded at the time of submission of bid).~~

- ~~1.2.3 When bids are invited from non CPWD contractors and CPWD class II contractors as per provisions of clause 1.2.1 above, it will be mandatory for non CPWD contractors and CPWD class II contractors to upload the work experience certificate(s) and the affidavit as per the provisions of clause 1.2.2.~~

~~But for such bids, Class I contractors of CPWD are eligible to submit the bids without submission of work experience certificate and affidavit. Therefore, CPWD class I contractors shall upload two separate letters for experience certificate and affidavit that these documents are not required to be submitted by them. Uploading of these two letters is mandatory otherwise system will not clear mandatory fields.~~

2. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD 7/ 8 (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **18 (Eighteen) 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.
Or
The site for the work shall be made available in parts as specified below:-
.....
- (ii) The architectural and structural drawing for the work is available.
Or
The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.
5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times or withdraw it before last date and time of submission of bid as notified. No post-tender modification is allowed by the tenderers except through negotiations, if required. In case, any tenderer does so, the tender will be rejected and the tenderer will be debarred for future tendering in CPWD for two years by the concerned enlisting authority (in case of CPWD enlisted contractor) and by the concerned CE/SE (in case of non-enlisted contractor).

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted, then the bid submitted earlier shall become invalid.
9. Earnest Money amounting to **Rs.16,10,104.00** in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee including e- Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks(**Drawn in favour of Executive Engineer, Assam Aviation Works Division, CPWD, Guwahati-15, payable at Guwahati**)shall be scanned and uploaded on the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT.

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 including e- Bank Guarantee of any Commercial bank having validity for a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e-tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder 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, who has deposited EMD 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 31/10/2026 .

10. The bid submitted shall become invalid and e-Tender processing fee (if applicable) shall not be refunded if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
 - (iii) 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.

- (iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount or ECPT (whichever is higher) as mentioned in schedule E, **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 of 5% of tendered amount, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.(vide DG, CPWD OM No. DG/CON/Construction 2023/20 dt. 27.02.2026).** The contractor shall submit an irrevocable Performance Guarantee as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work within the period specified in Schedule F.
12. **The description of the work is as follows:-**
“Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.” Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
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 enlisted contractor in CPWD shall not be allowed to participate in the tender for work(s) in the CPWD Zone/circle /Division/Sub-Division responsible for award and/or execution of contract(s) in which his near relative is posted as an officer in any capacity between the grades of the Chief Engineer and Junior Engineer (both inclusive) or Divisional Accountant. 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 Housing and Urban Affairs. 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 bids for the work shall remain open for acceptance for a period of **30 (thirty) days** from the date of opening of bids in case of single bid system ~~and 75 (seventy five) days from the date of opening of technical bids in case bids are invited in 2 or 3 bid system.~~
~~Further-~~
 - i) If any tenderer withdraws his tender within 7 days after last date and time (24 hours basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - ii) If any tenderer withdraws his tender after expiry of 7 days after last date and time (24 hours basis) 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.
 - iii) Withdrawal of the tender, by the tenderer, shall only be made through e-tender portal. Any other method i.e. through letter / e-mail etc. shall not be considered.
 - iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work and also the Government shall, without prejudice to any other right or remedy, be at liberty to suspend the agency for one year and shall not be eligible to bid for CPWD tenders from date of issue of suspension order.
19. This notice inviting Bid shall form a part of the contract document. The successful bidder/ contractor, on acceptance of his bid by the Accepting Authority shall within 10 days from the stipulated date of start of the work, sign the contract consisting of:-

- (a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
- (b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.

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-7/8 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 last date of 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 (competent authority under clause 2 and clause 5 shall be same authority as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.

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

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

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 and Part B of the agreement. EE/DDH in charge of minor component(s) shall operate Part- C alongwith Part A 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 agencies for specialized component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-Charge of relevant component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-Charge of relevant component(s).

- 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 relevant specialized component(s).

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

- 20.1.10 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.
- 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. ~~Integrity Pact: The contractor shall download the Integrity Pact, which is a part of tender documents, affix his signature in the presence of a witness, and upload the same while submitting online bids for all works of estimated cost put to tender equal or more than the threshold value given in Schedule F. In the event of his failure to sign and upload the Integrity Pact along with other bid documents, his bid shall be rejected.~~

22. 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. 9598363862, e-mail id : eeaawdcpwd@gmail.com, Division : Assam Aviation Division, Guwahati**) or ERP 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.

To be filled in by NIT approving authority.

23. ~~Price Preference to SC/ST individual contractor for item rate/percentage rate tender:~~
~~Price preference in quoted item rate/percentage rate tender shall be applicable to the individual enlisted/non-enlisted SC/ST contractor as under:-~~
 (i) ~~For work(s) upto and equal to an estimated cost of Rs. 2.70 lakh a price preference upto 5% (with reference to the lowest valid tender) may be allowed~~

~~in favor of individual SC/ST enlisted/non-enlisted contractor. No earnest money is required in such case(s).~~

- ~~(ii) For work(s) beyond an estimated cost of Rs. 2.70 lakh and upto and equal to estimated cost of Rs. 6.20 lakh, the price preference upto 5% (with reference to the lowest valid tender) may be allowed in favour of individual enlisted SC/ST contractor. However, earnest money at a reduced rate of ½% may be accepted in such cases.~~

~~The price preference upto 5% (with reference to the lowest valid price bid) may be allowed in favour of individual SC/ST contractor only. The above concession shall be allowed only after verification of the individual contractor's claim of belonging to SC/ST community.~~

24. The agency has to follow COVID guidelines as issued by the State/ Central Govt. from time to time to contain the spread of COVID-19 outbreak.

JURISDICTION OF COURTS

- 1) 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.

- 2) 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.

RECEIPT OF DEPOSITION OF ORIGINAL EMD

(Receipt No. Date)

Name of work: "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

1. NIT No. :- 10/NIT/CE/GHY/2026-27
2. Estimated Cost:-Rs.8,05,05,206.00
3. Amount of Earnest Money Deposit :- Rs.16,10,104.00
4. Last date of submission of bid :- 31.10.2026

(**To be filled by Executive Engineer, Assam Aviation Works Division, CPWD, Guwahati-15, payable at Guwahati at the time of issue of NIT and uploaded along with NIT)

1. Name of Contractor :-
2. Form of EMD :-
3. Amount of Earnest Money deposit :-
4. Date of submission of EMD :-

**Signature, Name and Designation of EMD
Receiving officer (EE/AAO)
Along with office stamp**

(# To be filled by EMD receiving EE)

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

The **Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015** on behalf of President of India invites online ~~Item rate/percentage rate bids from approved and eligible contractors of CPWD and those of appropriate list of M.E.S., BSNL, Railway and~~ **State P.W.D. (B&R) or State Govt.'s Department** dealing with building and roads, if there is no State PWD (B&R), (strike out as the case may be) for the following work(s)

"Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

S. No	NIT No.	Name of work & Location	Estimated cost put to bid (Rs.)	Earnest Money	Stipulated Period of Completion of work (in months)	Last date of online submission of bid, copy of receipt of deposition of original EMD and other documents as specified in the bid document.	Date & time of opening of bid
1	2	3	4	5	6	7	8
1.	10/NIT/CE/GHY/2026-27	"Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."	Rs. 8,05,05,206.00 (Civil Rs.5,92,52,840.00) Electrical Rs.2,12,52,366.00)	Rs.16,10,104.00 In favor of EE, Assam aviation Works Division, CPWD, Guwahati-15, payable at Guwahati payable at Guwahati	18 (Eighteen) Months	Up to 03.00 PM on 31.10.2026	Date 31.10.2026 at 03:30 P.M.

- 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, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
- But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or Banker's Cheque or Fixed Deposit Receipts or/ and Bank Guarantee including e-Bank Guarantee (for balance amount Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

as prescribed) from any of the Commercial Bank towards EMD in favour of Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/ AE), CPWD and other documents as specified.

5. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered / update their profile beforehand. The necessary training materials including the videos with step to step process are available on download section of <https://etender.cpwd.gov.in>.
6. The intending bidder must have valid Class-III digital signature certificate with encryption key (combo type) to perform any operations / transactions on the e-tendering portal / website and the bidder should download and install the eMSigner on their system as per instructions available on download section of <https://etender.cpwd.gov.in>.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
8. Contractor can upload documents in the form of JPG format and PDF format.
9. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in yellow colour and the moment rate is entered, it turns sky blue.

In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).

However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

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

- I. Account Payee Demand Draft/ Banker's Cheque / FDR/ Bank Guarantee (for balance amount as prescribed) of any Commercial Banker Insurance Surety Bonds against EMD.
- II. Copy of receipt for deposition of original EMD to division office of any EE, CPWD.
- III. Enlistment order of the Contractor.
- ~~IV. Certificates of Work Experience (if required from non CPWD and CPWD class II contractors).~~
- ~~V. Affidavit as per clause 1.2.3 of CPWD 6 (if required from non CPWD and CPWD class II contractors).~~
- ~~VI. Two letters from CPWD class I contractors as specified under clause 1.2.3 of CPWD 6 (if applicable).~~
- VII. **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 under taking 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".

~~VIII. Integrity Pact signed by the bidder in the presence of a witness for works equal to or above the threshold value given in Schedule F.~~

IX. Details of Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects in below as per **Form "F"**.

X. Copy of PAN card.

XI. **Copy of Electrical Contractor License.**

If the bidder has not obtained Electrical Contractor License **as applicable**, then he shall scan and upload following undertaking along with bid documents.

"If work is awarded to me, I/we shall obtain Electrical Contractor License, or if I/we do not possess in my/our name a valid electrical license as required, I/we shall associate an agency having such a license required for execution of work 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 concerned competent authority in this regard".

XII. The agency must upload the ERP training Certificate regarding successful completion of ERP training from ERP portal.

XIII. Undertaking for Association as per **Annexure – A**.

CPWD – 7

GOVERNMENT OF INDIA CENTRAL PUBLIC WORKS DEPARTMENT Percentage rate tender&contract for works

(A) Tender for the work of:-

"Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

- (i) To be uploaded by **15:00 hours on 31.10.2026** in the office of **Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.**
- (ii) To be opened in presence of tenderers who may be present at **15:30 hours on 31.10.2026** in the office of **Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.**

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.

I/We agree to keep the tender open for 30 days from the due date of its opening in case of single bid system and not to make any modification in its terms and conditions.

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

A copy of earnest money deposit receipt of prescribed amount deposited in the form of 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 Performance Guarantee/Earnest Money.

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

Dated

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

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

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

(a)

(b)

(c)

For & on behalf of the President of India.

Signatures

Dated:

Designation

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 (i/c e-bank guarantee) for Earnest Money Deposit /performance Guarantee/Security Deposit/Mobilization Advance

1. 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 (i/c e-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 (i/c e-bank guarantee) for Rs. (Rupees only) valid upto (date)..... as**Performance Guarantee/security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

2. We, ... (indicate the name of the bank)..... (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs.,...,..... (Rupees only) on demand by the Government within 10 days of the demand.
3. We, ... (indicate the name of the Bank),do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only).
4. We, ... (indicate the name of the Bank), further undertake to pay the Government any money so demanded 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 (i/c e-bank guarantee) being absolute and unequivocal. The payment so made by us under thisBank guarantee (i/c e-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.

5. We, ... (indicate the name of the Bank)....., further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. We, ... (indicate the name of the Bank)....., further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, ...(indicate the name of the Bank)....., undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank guarantee (i/c e-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

2. Name and Address

Name

Designation

Staff code no.

Bank seal

1. 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 (i/c e-bank guarantee) will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be.

Form-F

**UNDERTAKING ON STRUCTURAL STABILITY AND SOUNDNESS OF ALREADY
COMPLETED BUILDINGS AND INFRASTRUCTURE PROJECTS**

**AFFIDAVIT TO BE FURNISHED ON A 'NON JUDICIAL' STAMP
PAPER OF RS. 200/-**

Name of Work: "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

NIT No.:10/NIT/CE/GHY/2026-27

I/we undertake and confirm that any building / infrastructure constructed by our firm /partnership firm/ company has not suffered any failure, making it unfit for intended use, either due to structural design and defects or due to use of sub-standard materials or execution of sub-standard work, poor workmanship or any other reason during the last 25 (twenty five) years.

I/we, further, undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall be free to terminate the bid/agreement and to forfeit the entire amount of earnest money deposit, performance guarantee and security deposits.

I/we, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD.

The decision of Engineer-in-Charge or any higher authority shall be final and binding.

Signature of notary
with seal

Signature of bidder or an authorized person
of the firm with stamp

Note: Affidavit to be furnished on a 'Non-judicial' stamp paper of Rs. 200/- (scanned copy of the notarized affidavit to be uploaded at the time of submission of bid).

**UNDERTAKING FOR ASSOCIATION
(AFFIDAVIT TO BE FURNISHED ON A ‘NON JUDICIAL’ STAMP PAPER OF RS. 200/-)**

AFFIDAVIT

Name of Work: "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

NIT No.:10/NIT/CE/GHY/2026-27

I / we hereby undertake that I/We shall submit the documents of Associated specialized Agencies/ Manufacturer / Authorized service agency / service provider as per eligibility criteria mentioned in the special condition of NIT for association of Specialized Agencies within 10 days from the date of issue of letter of acceptance. I/ we am/ are also aware that Nonrefundable penalty @ Rs. 5000/- shall be imposed on each day of delay for each specialized subhead / Electrical work in case of submission of required details beyond specified period. Delayed submission with penalty shall be admissible up to next 10 days, beyond I/ we shall make ourselves liable for action under relevant clause of GCC.

Signature of the bidder

Stamp

Address:

Date :

Place :

PERFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities (As per PWD-3)	:	From Page No. 104-117
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SCHEDULE 'D'

Extra schedule for specific requirements / documents for the work, if any	:	General Conditions, Additional Specifications
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SCHEDULE 'E'

Reference to General Condition of contract	:	General Conditions of Contract 2023(Maintenance work)CPWD – 7 with upto date corrections slip issued till last date of submission of bid.
Name of work	:	"Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."
Estimated cost of work	:	Rs.8,05,05,206.00 Civil: Rs.5,92,52,840.00 Electrical: Rs.2,12,52,366.00
1) Earnest money	:	Rs.16,10,104.00
2) Performance Guarantee	:	(a) PG: 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is heigher). (b) APG: Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT) the Performnce 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. (c) Performance Guarantee shall remain valid for a minimum period of six months beyond the date of completion of all contractual obligations as per GCC. The Additional Performance Guarantee (APG) shall be in the prescribed format of Performance Guarantee and has to be submitted within the time frame prescribed for submission of Performance Guarantee. The other terms and conditions of release etc. of APG shall be same as that of PG.
3) Security Deposit	:	2.5 % of tendered value.

SCHEDULE 'F'**GENERAL RULES & DIRECTIONS:**

Officer Inviting Tender	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.
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 under clause 12 of Schedule 'F'

Definitions:

2(vi)	Engineer-in-Charge	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.
2(viii)	Accepting Authority	:	Chief Engineer Guwahati, CPWD, Guwahati- 781035
2(x)	Percentage on cost of materials and labour to cover all overheads and profits.	:	15%
	Standard Schedule of Rates	:	Based on DSR-2023 (Upto date correction slip) & Market Rate
2(xi)	Department	:	Central Public Works Department
9(ii)	Standard CPWD contract Form GCC 2023(Maintenance work), C.P.W.D Form 7/8 as modified and corrected up to last date of submission of bid.	:	Form 7

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 letter of acceptance.	:	10(Ten) Days
(ii)	Maximum allowable extension with late fee @ 0.1% Per day of Performance Guarantee amount beyond the period provided in (i) above	:	5(Five)Days with late fee @ 0.1% Per day of PG amount + APG amount

Clause 2

Authority for fixing compensation under clause 2	:	Chief Engineer, Guwahati CPWD, Guwahati- 781035.
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Clause 2A

Applicable Clause 2 / Clause 2A	:	Yes, Clause 2
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Clause 5

Number of days from the date of issue of letter of acceptance of work for reckoning date of start	:	10 Days
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Mile stone(s) as per table given below:-

Mile Stone Break up			
Sl. No.	Description of Milestone (Physical)	Time Allowed (from date of start)	Amount to be withheld in case of non-achievement of milestone (% of tender amount of civil portion)
1.	Completion of 15%	4Months`	0.75%
2.	Completion of 30%	8Months	0.75%
3.	Completion of 50%	12 Months	1%
4	Completion of 75%	16 Months	1.25%
5.	Handing over the site100%	18 Months	1.25%

Time allowed for execution of work.	:	18 (Eighteen) months.
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Authority to decide:

(i)	Authority to convey the decision of shifting of milestone and Extension of time	:	Executive Engineer, Assam AviationDivision, CPWD, Guwahati – 781015.
(ii)	Authority to decide rescheduling of milestone and extension of time	:	Chief Engineer, Guwahati, CPWD, Guwahati - 781035
(iii)	Shifting of date of start in case of delay in handing over of site.	:	Chief Engineer, Guwahati, CPWD, Guwahati - 781035

Proforma of schedule 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	Full	As per CPWD 6 (Sl. No. 3)
Part B	Portion with encumbrances	Nil	NA
Part C	Portions dependent on work of other agencies	NA	NA

Clause 6

Mode of Measurement: Computersised Measurement Book (CMB) / Electronic Measurement Book (EMB)	:	EMB
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Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

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 for interim payment.	:	Rs. 44.72 akh [Except Final Bill] However, the Engineer-in-Charge at his discretion may release monthly payment even at a lesser amount subjected to availability of funds from client and LoC. But Contractor should not claim it as a matter of right and no interest payment as per clause 7 is permitted unless the work executed is beyond gross value of work done as stipulated above and the bill is received in the division office, complete in all respects with all required attachments & Annexures /Statements
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Clause 7A

Whether Clause 7A shall be applicable	:	Yes Applicable
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Clause 8

Competent Authorities to inspect and issue part / final completion certificate	:	As per CPWD Works Manual – 2026 with latest amendment issued time to time
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Clause 8A

Authority to decide compensation on account If contractor fails to submit completion plans	:	Chief Engineer, Guwahati CPWD,Guwahati-35.
Recovery rate for not submission of completion plans by the contractor	:	0.1% of tendered value of all Components subject to ceiling of Rs.1,00,000/- (Rupees One Lakh only).

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

Equipment's for conducting necessary tests (as per CPWD Specifications 2019 Volume-I&II) shall be provided and installed at site campus in the well-furnished site laboratory by the contractor at his own cost. The following laboratory equipment should be in general or as and when required be setup at site laboratory:-

Sl. No.	Equipment	Numbers
1	Balances	
	(i) 7 kg to 10 kg capacity, semi-self-indicative type-accuracy 10 gm	1 No.
2	Sieves : as per IS 460-1962	
	(i) IS sieves -200mm/300mm internal dia (brass frame) consisting of 12.5 mm, 10 mm, 4.75 mm, 2.36 mm, 1.18	1 set

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

	mm,600 microns, ,300 microns,150 mm with lid and pan	
3	Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly	1 No.
4	Dial gauges, 25mm travel-0.1 mm/division least count	1 No.
5	Graduated measuring cylinders 200 ml capacity	1 No.
6	Steel tapes-3 m	1 No.
7	Vernier calipers	1 No.
8	Micrometer screw 25mm gauge	1 No.
9	A good quality plumb bob	1 No.
10	Spirit level, minimum 30cms long with 3 bubbles for horizontal vertical	1 No.
11	Wire gauge (circular type) disc	1 No.
12	Foot rule	1 No.
13	Long nylon thread	1 No.
14	Magnifying glass	1 No.
15	Screw driver 30 cms long	1 No.
16	Ball pin hammer,100 gms	1 No.
17	Plastic bags for taking samples	3 Nos.
18	Depth Gauge	1 No.
19	Straight edge	2 Nos.
20	Compression testing machine (CTM)	1 No.
21	Cube Mould (150x150x150mm)	12 Nos.
22	Slump Cone	1 No.
23	Laboratory oven	1 No.
24	Water testing Kit	1 No.
25	Any other equipment for site tests as outlined in BIS codes and as per test specified in CPWD specifications 2019 directed by Engineer-in-charge.	As per requirement

Clause 10-B (ii)

Whether clause 10-B (ii) shall be applicable	:	Not Applicable
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Clause 10 C

:

Not Applicable

Component of labour expressed as percentage of value of work	:	NA
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Clause 10 CC

:

Applicable**A. For Construction Period :**

S. No.	Relevant component of Material / Labour for price escalation	Percentage of total value of work
1	Cement component	1%
2	Labour component	25%
3	Civil component of other Construction Materials	52%
4	E&M (Electrical and Mechanical) component of Construction Materials	20%
5	POL (Diesel) component	0%

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

6	Reinforcement steel bars / TMT bars / structural steels (including strands and cables) component	2%
7	Bitumen component	0%
	Total	100%

Clause 11

Specifications to be followed for execution of work	:	CPWD specifications 2019 Volume I and II, with modifications / corrections issued time to time.
Building information model (BIM) is applicable and BIM professional to be deployed by contractor	:	No

Clause 12.2 (c)

Deviation limit beyond which clause 12.2 (c) shall apply for building work.	:	100%
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Clause 12.4

(i) Deviation limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth works subhead in DSR and related items).	:	100%
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items.	:	100%

Clause 16

Competent Authority for deciding reduced rates	:	Chief Engineer, Guwahati CPWD, Guwahati-35.
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Clause 18

1.	Machinery & equipment required for completion of the work as per decision of Engineer-in-charge.	As per requirement
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Note: The T&P are to be deployed as and when required or as directed by Engineer-in Charge.

Clause 19 C	Authority to decide penalty for each default	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.
Clause 19 D	Authority to decide penalty for each default	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.
Clause 19 G	Authority to decide penalty for each default	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.

Clause 19 K	Authority to decide penalty for each default	:	Executive Engineer, Assam Aviation Division, CPWD, Guwahati – 781015.
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Clause 25

Conciliator	Additional Director General, Guwahati, CPWD
Arbitrator Appointing Authority	Chief Engineer, Guwahati
Place of Arbitration	Guwahati only.

Clause 32**Requirement of Technical Representative (s) & recovery Rate**

Sl. No	Minimum Qualification of Technical representative	Number	Minimum Experience (years)	Designation (Principal Technical / Technical	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(i)	
					Figures	Words
1.	Graduate Engineer	1	5 (and having experience of one similar nature of work)	Project Manager	Rs. 25,000/- per month	Rs. Twenty Five Thousand only per month
2	Graduate Engineer or Diploma Engineer	1 + 1	2 or 5 respectively	Project Planning /quality/billing Engineer	Rs. 15,000/- per month per person	Rs. Fifteen Thousand only per month per person

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

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

Clause 38

- (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of **Delhi Schedule of Rates 2023**, corrected up to date printed by CPWD.
- (ii) Variations permissible on theoretical quantities.

(a)	Cement		
	For works with estimated cost put to tender not more than Rs. 25 lakh.	:	3% plus / minus
	For works with estimated cost put to tender more than Rs. 25 lakh.	:	2% plus / minus
(b)	Bitumen All Works 2.5% plus & only	:	2.5% only and nil on minus side
(c)	Steel reinforcement and structural steel sections for each diameter, section and category.	:	2% plus / minus
(d)	All other materials.		Nil

PART - B

PART I — BRIEF PARTICULARS OF THE WORK

1. Salient Details of the Work

Name of Work	“Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”
Estimated Cost Put to Tender	Rs.8,05,05,206.00
Earnest Money Deposit (EMD)	Rs.16,10,104.00
Time Allowed for Completion	18 (Eighteen) Months.
Location of Work	Income Tax Residential Complex at Beltola, Guwahati (Assam).”

2. Scope and Nature of Work

- 2.1 The present tender is for the work named above in its entirety, including all civil, structural, electrical and mechanical (E&M) components described in this document and the Schedule of Quantities. Details of E&M works are given separately in other part of the tender document.
- 2.2 The cost of labour, materials, tools, plant and machinery required for execution of the whole project is deemed to be within the scope of this work, and the Contractor's quoted rates shall be inclusive of the same.
- 2.3 Miscellaneous and allied works forming part of the scope, to be executed in accordance with CPWD Specifications and NBC 2016 (in addition to matters specified elsewhere in this document), include:
- All civil structure work including foundation work, masonry work, finishing work, flooring, roofing, false ceiling, door and window work along with fittings, railings, waterproofing work, and internal plumbing, sanitary and drainage works.
 - External water supply and sewerage, storm water drainage, rain water harvesting including trough trenches, recharge pits, disposal of excess overflow, etc.; plumbing and sanitary underground services.
 - Electrical internal and external service connection.
 - Sub-station.
 - Fire-fighting system.
 - Fire alarm system.
 - Grid-interactive roof-top solar photovoltaic power generation system.
 - Lift.
 - DG Set.
 - UPS.
 - CCTV/EPABX/LAN.
 - Underground water tank with pump house.

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- Site development including levelling, roads, footpaths, walkways, etc., as per the final approved layout plan i/c boundary wall.
- External service connections for electricity, water supply, sewerage system and other services.
- Barricading if required of all areas as per NGT guidelines, and dismantling of its foundation, barricading and removal after completion of work.
- Development of site: levelling, internal roads and paths, filtered water supply, road marking, street lighting, sign boards, water treatment plant, external electrical service connection, solar lighting, solar water heating system, and internal/external signages.

2.4 **Shifting/Removal of Services and Statutory Approvals:** The Contractor shall take all necessary measures to remove any live or dead service lines running through the plot area, without extra cost, and shall obtain the completion/occupation certificate, fire-department NOC and other statutory approvals related to the building for handing over the assets. The Engineer-in-Charge and the client shall extend necessary support for these approvals; the Contractor shall be bound to abide by all clauses of statutory and other approvals, and the work shall be declared complete only after all such approvals have been obtained.

3. Site Conditions and Contractor's Acknowledgment

- 3.1 The Contractor shall be deemed to have satisfied himself, before tendering, as to the nature and location of the work, general and local conditions (including restrictions on movement of traffic/vehicles), handling, availability and storage of materials, availability of labour, weather conditions, and general ground/sub-soil conditions. Rates shall be quoted accordingly; nothing extra shall be payable on any of these accounts, and the Engineer-in-Charge shall bear no responsibility for any lack of such knowledge on the part of the Contractor.
- 3.2 Information and site data shown in the drawings and tender documents are furnished in good faith, for general information and guidance only. The Engineer-in-Charge shall not be held responsible for the accuracy of such information or for any interpretations or conclusions drawn from it by the Contractor, and all consequences shall be borne by the Contractor. No claim shall be entertained on the ground that the information furnished was insufficient, different, or at variance with actual site conditions.

4. Governing Specifications and Contract Documents

- 4.1 CPWD Specifications 2019 (Vol. I & II, corrected up to the last date of submission of the bid), relevant BIS/IS Codes, and the National Building Code 2016 shall be followed in general, except where otherwise specifically mentioned in this document. Where specifications are not available in the tender document for a particular item, the manufacturer's specification shall be followed.
- 4.2 The work shall be executed under, and shall be governed by, the General Conditions of Contract (GCC) 2023 for CPWD Construction Works, as corrected up to the last date of submission of the bid.
- 4.3 Order of precedence in case of discrepancy between documents (read with Condition 8.1 of the standard CPWD contract form):

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- (i) Nomenclature of items as per the Schedule of Quantities.
 - (ii) Particular specifications and special conditions, if any.
 - (iii) CPWD Specifications.
 - (iv) Architectural Drawings.
 - (v) Indian Standard Specifications of the BIS.
 - (vi) Sound Engineering Practice.
- 4.4 Wherever reference is made to any IS/BIS or international standard (ASTM/BS/EN) in the contract documents, such reference shall be deemed to include all amendments and revisions issued up to the date of receipt of tenders.
- 4.5 The work shall be executed and measured in metric dimensions as per the Schedule of Quantities and drawings; F.P.S. units, wherever indicated, are for guidance only.
- 5. Defect Liability and Structural Responsibility**
- 5.1 Defects and deficiencies found during the Defect Liability Period of 12 months shall be made good by the Contractor at his own cost, as per Clause 17 of GCC 2023.
- 5.2 The Contractor shall be responsible for the safety, quality and soundness of the buildings, including structural elements, beyond the maintenance period, and shall rectify all defects in structural elements or any other part of the building/structure/road at his own cost for 5 (Five) years from the date of completion recorded in the completion certificate as per clause 24 of GCC 2023. Such rectification shall be carried out within the time specified in the Engineer-in-Charge's instructions/notice (Not exceeding 45 days) and as per methodology approved by him.
- 6. Statutory Approvals, Service Connections and Handover**
- 6.1 The Contractor shall, at no extra cost, remove or shift any live or dead service lines running through the plot area, and shall obtain the completion/occupation certificate, fire-department NOC, and other statutory approvals for handing over the assets. The Department and the client shall extend necessary support for these approvals, but the work shall be declared complete only after all such statutory approvals have been obtained.
- 6.2 The Contractor shall obtain all service connections (water supply, sewerage, drainage, electric supply, LAN/WAN, telephone lines, gas pipeline, etc.) from the main lines of the respective authorities/service providers (e.g., GJB/GMC/MTNL/IGGL). Such connection and coordination shall be an integral part of the scope of work, and the cost is deemed included in the quoted rates.
- 6.3 The Contractor shall submit shop drawings for plumbing, drainage, sewerage, MS grills, SS railings, uPVC windows/Aluminium windows, door frames and shutters, structural steel, aluminium/glazing work, modular kitchens and wardrobes, and detailed layout/3-D drawings for all civil and electrical services, supported by design, for approval of the Engineer-in-Charge.

- 6.4 On completion, the Contractor shall hand over the assets together with as-built drawings, an as-built BIM Model if applicable, services route plans, maintenance manuals, and all applicable warranties/guarantees.
- 6.5 Testing, commissioning of all services, fittings, fixtures and equipment, and handing over the same to the client is included in the scope of work.
- 6.6 Completeness of Work: (a) All civil and E&M installations shall be completed in all respects and put into operation, even where certain details have not been specifically mentioned in the contract documents. (b) All civil and E&M works shall be declared complete by the Engineer-in-Charge only after a trial run of one month, or on the date of handing over of the whole work under the agreement, whichever is later.

7. Building Information Modelling (BIM)

- ~~7.1 The Contractor shall develop a 3D BIM model for the entire complex, before taking up execution, from advanced detailed drawings on Revit/architectural CAD software. Coordinated construction drawings for architecture, structure, HVAC, fire safety, electrical, plumbing, sanitary and external services shall be issued from the BIM model, with clash detection and resolution carried out prior to issue of good for construction drawings.~~
- ~~7.2 A detailed BIM Execution Plan (BEP) shall be submitted by the Contractor upon award of contract.~~
- ~~7.3 The Contractor shall engage a specialized BIM Consultant, approved by the Engineer in-Charge, to develop the BIM model to Level of Development (LOD) 350, for use through construction and O&M phases; the overall design (structural, architectural, mechanical, electrical, plumbing and supporting infrastructure) shall be developed by the Contractor's specialized agency to the same LOD.~~
- ~~7.4 All clashes/conflicts between civil, architectural, MEPF and HVAC services shall be identified through BIM coordination and submitted to the Engineer in-Charge for review, well in advance of execution. The BIM model shall be kept current with all revisions and approved changes; complete as-built drawings along with the final updated BIM Model (LOD 350) shall be submitted at handover. Rates quoted are inclusive of all BIM obligations; nothing extra shall be paid on this account.~~

8. Royalty on Minor Minerals

- 8.1 Deduction of Royalty: Royalty and ancillary charges on all minor minerals (sand, stone, earth, clay, boulders, aggregates, etc.) used in the work shall be recovered from the Contractor's Running Account and Final Bills at the rates prescribed under the Assam Minor Mineral Concession Rules, 2013, as amended by the 2021 Amendment Rules (Gazette Notification No. PEM.130/2021/40 dated 07.10.2021) and as further revised from time to time, after adjusting royalty already paid by the Contractor.
- 8.2 Basis of Recovery: Recovery shall be in proportion to the prescribed percentage of the total project cost, excluding taxes such as GST and Income Tax, as notified under the said Rules.
- 8.3 Mode of Deposit: Amounts recovered shall be deposited by the Department into the appropriate Government Head of Account or Bank Account notified by the Government of Assam.

- 8.4 Responsibility of Contractor: It shall be the Contractor's responsibility to ensure all minor minerals are sourced from authorised quarries/mines with valid permits, and that royalty has been paid where minerals are procured through suppliers; in the event of non-payment, the Department shall recover the amount from the Contractor's bills. No final payment shall be released until compliance is established or recovery effected. Royalty on any surplus earth shall similarly be borne by the Contractor at prevailing rates.

9. Labour Accommodation

Space within the site premises shall be made available for labour hutments, in compliance with CPWD GCC, the Contract Labour (Regulation & Abolition) Act, and applicable local laws. If site space is insufficient, the Contractor shall, at his own cost, arrange labour accommodation outside the site. All expenses for land rent, construction, maintenance, water supply, electricity, sanitation, safety, statutory compliance, watch-and-ward and dismantling of such camps shall be borne entirely by the Contractor; the tendered rates are deemed inclusive of all such arrangements, and no extra payment or claim shall be admissible on this account.

PART II — ADDITIONAL CONDITIONS OF CONTRACT

1. Rates: General Basis and Inclusions

- 1.1 Unless otherwise provided in the Schedule of Quantities, quoted rates are all-inclusive and shall apply to all heights, lifts, leads and depths of the building, and to work in/under water or foul conditions. Nothing extra shall be payable on this account. Payment for centring/shuttering required for floor-to-floor heights greater than 3.5 m shall be admissible only at rates arrived at under Clause 12 of the agreement, if not already specified.
- 1.2 Rates are deemed inclusive of: site clearance, setting-out, profile and layout on ground, reference benchmarks, signage, spot levels, total-station survey, all safety and protective devices, mandatory helmets/safety shoes and other gadgets, continuous worker training, barriers, preparatory works, hygienic worker housing per approved drawings, working during monsoon or odd hours/beyond normal hours, working at all depths/heights/leads/lifts/levels/locations, and any other unforeseen but essential incidental work. No extension of time shall be granted on these accounts.
- 1.3 Rates are firm and inclusive of all taxes and levies. No foreign exchange shall be made available by the Department for import of equipment, plant, machinery or materials; no claim on account of exchange-rate variation shall be entertained.
- 1.4 All ancillary and incidental facilities for execution — labour camp, stores, fabrication yard, Contractor's and CPWD site offices, watch-and-ward, temporary ramps, water-storage tanks, temporary electricity/telephone/water installation and running charges, liaison for NOCs and completion certificates, protection works, site testing facilities/laboratory, and any other activity necessary for execution as directed by the Engineer-in-Charge — are deemed included in the quoted rates; nothing extra is payable. Before starting work, the Contractor shall submit a site/construction-yard layout to the Engineer-in-Charge.
- 1.5 Material shall be brought to site only as per the programme finalised with the Engineer-in-Charge; pre-delivery of material not required for immediate consumption shall neither be accepted nor paid for. No claim for idle establishment, labour, machinery, equipment or tools/plant, for any reason, shall be admissible during or after execution of the work.
- 1.6 The Contractor may be required to work in two or more shifts, including night shifts, to complete the work on time; no claim shall be entertained on this account, notwithstanding any extra amounts the Contractor may have to pay labour or staff under applicable statutory regulations.

2. Site Inspection, Survey and Setting-Out

- 2.1 The Contractor shall inspect and examine the site and its surroundings and satisfy himself as to the nature of the site, means of access, local regulatory constraints, ground/sub-soil conditions, and any other circumstance affecting the tender. Drawings may be inspected, before submission of the tender, at the Office of the Executive Engineer, Guwahati Division, CPWD, Guwahati-781021. The Department bears no responsibility for the Contractor's lack of such knowledge or its consequences.

- 2.2 The Contractor shall, at his own cost, carry out survey of the work area, set out the layout, and fix the alignment of the building as per the architectural and structural drawings, in consultation with the Engineer-in-Charge. Any discrepancy between drawings and actual site layout shall be brought to the Engineer-in-Charge's notice; correct setting-out remains the Contractor's responsibility, and nothing extra is payable. No claim shall be entertained later on the plea that departmental information was insufficient or at variance with site conditions.
- 2.3 Structural and architectural drawings shall at all times be properly co-related before executing any work; discrepancies shall be resolved in writing by the Engineer-in-Charge before the Contractor proceeds.

3. Temporary Water, Electricity and Telephone Connections

- 3.1 The Contractor shall, at his own cost, arrange temporary telephone, water and electricity connections required at site, obtaining necessary permissions directly from the concerned authorities (under intimation to the Department). All initial costs, running charges and security deposits shall be borne by him, and he shall be solely liable for any penalty for violation of applicable rules/bye-laws.
- 3.2 The Contractor shall be responsible for maintenance and watch-and-ward of the installation and meters, and for any pilferage, theft, damage or penalty, and shall indemnify the Department against any resulting claim. Security deposit shall be released only after No-Dues Certificates are obtained from the relevant local authorities.
- 3.3 The Department shall not be responsible for any delay in obtaining electric, water or telephone connections, or for failure to obtain them at all; no claim of delay shall be entertained. The Contractor shall make contingency/standby arrangements for water and electric supply so that the work does not suffer.

4. Coordination with Other Agencies and Contractors

- 4.1 Other agencies engaged on this project (e.g., sub-station/DG sets, air-conditioning, lifts) will execute their works simultaneously; the Contractor shall afford necessary facilities, leave required holes, recesses, openings, trenches, etc., and fix inserts/sleeves/conduits/clamps at the time of casting, at no extra cost (except where inserts etc. are supplied free of cost by the Department, as specifically stated).
- 4.2 The Contractor shall not interfere with or hinder the progress of work by other contractors or the Engineer-in-Charge, and shall coordinate placement/removal of materials, work sequencing and site activities accordingly. He shall cooperate with sub-contractors and other agencies (allowing use of scaffolding, toilets, sheds; providing control lines/benchmarks; providing electricity, water, hoist and crane facilities at mutually agreed rates), and shall resolve disputes with other contractors amicably without involving the Engineer-in-Charge as arbitrator. The Contractor is responsible for damage caused by hindrance attributable to him, and shall indemnify the Department against claims arising from such disputes.
- 4.3 Restrictions on working hours or movement of labour/materials, as may be imposed by the client department, local body or security staff, shall be strictly followed by the Contractor, including issue of identity cards to authorised persons; nothing extra shall be payable on this account.

5. Compliance with Local Laws and By-Laws

- 5.1 Building work shall comply in all respects with the relevant local-body by-laws under whose jurisdiction the work is executed, or as directed by the Engineer-in-Charge, at no extra cost.
- 5.2 Water tanks, taps, sanitary fittings, water-supply and drainage pipes and accessories shall conform to the Municipal Body/Corporation's bye-laws and specifications where CPWD specifications are not available; the Contractor shall engage licensed plumbers and get fixtures/fittings tested by the Municipal Authorities where required, at his own cost.
- 5.3 The Contractor shall comply with all legal orders and directions of the local/public authority or municipality, abide by their rules and regulations, and pay all applicable fees and charges.

6. Performance Testing, Sample Units and Workmanship

- 6.1 The Contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted; nothing extra is payable for the test.
- 6.2 The Contractor shall work according to the programme approved by the Engineer-in-Charge, and shall submit a computer-software-based programme of work within 7 days of award, updated fortnightly. A monthly progress report shall be submitted in computerised form, containing (at minimum): project information and scope; a bar-chart construction schedule for the next three quarters showing milestones and progress; a progress chart of planned vs. achieved work with reasons for deviation; plant-and-machinery and man-power statements; a financial statement (RA payments, advances, recoveries, withheld amounts); a statement of extra/substituted items, bank guarantees and insurance policies; colour progress photographs; QA/QC test results for the month; and videography of major stages/events from start to completion. Failure in submission of MPR (Monthly Progress Report) will attract a fine of Rs.5000.00 (Rupees Five Thousand)only per month.
- 6.3 The Contractor shall construct a sample unit, complete in all respects, within the time specified by the Engineer-in-Charge, to be got approved before mass construction; no extra claim beyond agreement rates shall be entertained on this account.
- 6.4 Work shall be carried out in a professional manner, with the finished product serving its intended purpose with specified strength, durability and aesthetics, in a well-thought-out sequence so that later activities do not adversely affect earlier work. Nothing extra shall be payable to protect work already done.
- 6.5 The Contractor is entirely and exclusively responsible for the horizontal, vertical and other alignments, levels and correctness of every part of the work, and shall rectify any errors or imperfections at his own cost, to the entire satisfaction of the Engineer-in-Charge.

7. Materials — General Handling, Storage and Approval

- 7.1 Samples of all materials and fittings (brand, manufacturer, quality) shall be got approved from the Engineer-in-Charge well in advance of execution, and preserved until completion. Only BIS-marked articles shall be used, unless no manufacturer holds a BIS mark for the material concerned; unapproved material shall be removed as soon as directed.

- 7.2 The Contractor shall procure all materials in advance to allow sufficient time for testing and clearance before use.
- 7.3 The Contractor shall take instructions from the Engineer-in-Charge regarding stacking of materials; no excavated earth or building material shall be stacked on areas earmarked for other buildings, roads, services or compound walls. Double handling, if required, shall be at the Contractor's own cost.
- 7.4 The Contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by the Department or procured by him, and shall construct suitable godowns/yards at site to protect materials from sun, rain, fire and theft, employing necessary watch-and-ward at his own cost. He remains fully responsible for safe custody even under a double-lock system. All materials shall be got checked by the Engineer-in-Charge or his representative on receipt at site before use.
- 7.5 Any cement slurry added over a base surface, or for continuation of concreting/protecting reinforcement, is deemed included in the relevant item; nothing extra shall be payable, nor shall extra cement be considered in the cement-consumption account, on this account.
- 7.6 Drilling of holes for fasteners/screws and chase-cutting in walls shall be done by mechanical means only (hammer-drill/chase-cutting machine); nothing extra shall be paid.
- 7.7 Cutting of centrifugal cast (spun) iron pipes shall be done by electric machine.
- 7.8 Reinforcement provided in brick-masonry manholes as per standard design is included in the manhole item and shall not be separately measured for payment as reinforcement.
- 7.9 Brand and trade name of paint shall be got approved in writing before application of sample shades; after approval, bulk procurement shall be made, and original purchase vouchers/delivery challans for the full quantity produced to the Engineer-in-Charge before commencing painting.
- 7.10 The Contractor shall submit the Material Test Certificate (MTC) from the respective manufacturer for all materials supplied at site, along with delivery.

8. Testing of Materials and Works

- 8.1 The Contractor shall arrange all tests required under CPWD specifications through a laboratory approved by the Engineer-in-Charge, and shall bear all charges connected therewith, including testing fees and the cost of samples and their carriage. He shall establish a site laboratory at his own cost, equipped as per specification/direction of the Engineer-in-Charge; this does not absolve him from getting tests done at independent approved laboratories where required.
- 8.2 Even BIS-marked materials may be subjected to quality testing at the Engineer-in-Charge's discretion; the Contractor shall furnish manufacturer/laboratory test certificates on request.
- 8.3 Substandard material or work found not conforming to specification shall be rejected and removed from site within 48 hours (or within the time specified elsewhere for the particular material), failing which the Engineer-in-Charge shall have it removed at the Contractor's risk and cost, without further notice.

- 8.4 In concrete and RCC work, the Contractor shall arrange compression-strength testing at his own cost, rendering all assistance for preparation, safe custody, curing and carriage of cubes to the approved laboratory. Time for testing and for preparation of design mixes, and for initial/routine load testing of piles and testing of welds, is included within the time allowed for execution under Clause 5 of Schedule 'F'.
- 8.5 Outside/Independent Testing Facilities shall be Government, semi-Government or private-sector laboratories; laboratories of Government institutes, PSUs, IITs, NITs, Government Engineering Colleges and Government-funded research centres are treated as Government labs, while private labs require approval of the SDG/ADG of the region.

9. Third-Party Quality Assurance (TPQA)

- 9.1 The Department may engage a Third-Party Quality Assurance agency (e.g. IIT Guwahati, an NIT, Government Engineering College, EIL, RITES, or as approved by the Chief Engineer) to independently inspect construction work, test materials and check quality procedures, similar to Clause 16 of the agreement.
- 9.2 The Contractor shall fully cooperate with the TPQA team — facilitating sampling, transportation and examination, including documentation — at no extra time or cost to the Department, and shall carry out any rectification arising from adverse TPQA findings at no extra time or cost. At least 10% of samples, including cement concrete cubes, shall be taken jointly by the Contractor and TPQA/Engineer-in-Charge or his representative.
- 9.3 The Contractor shall provide suitable office space and furniture for TPQA use, and shall bear all expenditure for sample testing (packaging, sealing, transportation, loading/unloading and testing charges), at no extra cost.

10. Registers, Records and Quality Assurance Documentation

- 10.1 The Contractor shall maintain all registers of tests carried out at site or in outside laboratories (issued to him by the Engineer-in-Charge in the same manner as to CPWD field staff), including: Materials-at-Site (MAS) account register, Cement register, Master test register, Cube test register, Paint register, Inspection register, and Drawing register. The Contractor is responsible for the safe custody of all such registers.
- 10.2 Samples of materials, including cement-concrete cubes, shall be taken jointly by the Contractor and the Junior Engineer (JE), with at least 50% taken in the presence of the Assistant Engineer (AE); if no JE is posted, the AE shall take samples jointly with the Contractor. Cost of sample materials is borne by the Contractor.
- 10.3 Field-laboratory tests shall be carried out by the Contractor's engineering staff, with all tests 100% witnessed by the JE, 50% witnessed by the AE, and at least 10% witnessed by the Executive Engineer (EE). Register entries shall be made by the Contractor's designated staff and reviewed regularly by the JE/AE/EE.
- 10.4 A pile pour card in the standard proforma shall be maintained; no pile shall be cast without this card being filled.
- 10.5 The Contractor shall submit a copy of all test registers and the Materials-at-Site Register along with each alternate Running Account Bill and the Final Bill; each MAS entry shall be 100% checked by the JE (or AE, if no JE), the MAS register checked at least twice a week by the JE and once a week by the AE, and the Cement Register reviewed by the EE at least once a month.

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- 10.6 The full nomenclature of items shall be adopted in preparing the abstract of the final bill, in the measurement book, and in the bill form for the final bill.

11. Specialized Items of Work

- 11.1 List of Specialized Items: water proofing treatment for toilets, terraces, mumty, balconies and underground/overhead water tanks; expansion/seismic joint systems; anti-termite chemical treatment; soil investigation and survey; special foundations including all types of piles; synthetic play-area surfaces; BIM services; water treatment plant; and any further items specified in Annexure-6 (pages 154-156) of the SOP of the CPWD Works Manual 2026, as amended.
- 11.2 Such items shall be executed only through associated agencies specialized in the relevant field. The Contractor shall indicate the name(s) of his associated specialized agencies, satisfying SOP No. 4/7 (page 30) of the CPWD Works Manual, within one month of award of work, for approval of the competent authority.
- 11.3 Eligibility Criteria for Specialized Agencies: the associated agency must have, in the preceding seven years (ending the day previous to the last day of bid submission), completed (a) three similar works each valued at not less than 40% of the estimated cost of the relevant component, OR (b) two similar works each valued at not less than 60%, OR (c) one similar work valued at not less than 80% of that component's estimated cost, supported by a completion certificate from an officer not below the rank of Executive Engineer. Indicative components and reference values include Water Proofing Treatment (approx. Rs. 7.49 lakhs); costs are for eligibility-calculation purposes only.
- 11.4 The Contractor shall submit documentary evidence of the specialized agency's experience (work order/contract with BOQ, TDS certificates/Form 26AS, completion certificates, etc.) to the satisfaction of the Engineer-in-Charge. Where the Engineer-in-Charge is satisfied that agencies meeting the above credentials are not available, multiple agencies may be approved, or the criteria relaxed with the approval of the NIT-approving authority; such decision shall be final and binding on the Contractor.
- 11.5 The main Contractor shall execute an MoU with each associated specialized agency and submit a copy to the EE/DDH in charge of the relevant component and to the EE in charge of the major component. Prior approval of the Engineer-in-Charge is required before changing any specialized agency during the contract; the replacement agency must satisfy the same eligibility criteria. If the main Contractor himself has satisfactorily completed similar work of the required magnitude, he may be permitted to execute the specialized work directly, subject to certifying that no other specialized agency executed such prior work on his behalf.
- 11.6 The main Contractor shall be solely and fully responsible for resolving any dispute or litigation with a specialized agency, without any time or cost overrun to the Department; no claim of hindrance, and no extension of time, shall be entertained on account of such disputes or on account of selection/rejection of specialized agencies.
- 11.7 The following items shall be executed only through the manufacturer of the item, or through their authorised applicators/installers/experienced professionals: stone cladding; structural glazing; plumbing; aluminium/uPVC work; stone/GRC/aluminium jali or powder-coated aluminium strip work; swimming pool; signage; irrigation; mechanised spray plaster; false ceiling; factory-made kitchen cabinets, wardrobes and vanities;

acoustic treatment; fire-resistant doors; stainless-steel work/modular stainless-steel railing; and painting.

12. Additional Security Deposits and Performance Guarantees

- 12.1 Waterproofing and Anti-Termite Treatment:** The Contractor shall furnish a performance guarantee (in the prescribed proforma at Annexure-B for waterproofing, and in the Engineer-in-Charge's prescribed proforma for anti-termite treatment) for a guarantee period of five years (extendable to ten years where specifically stated for a component) from the date of completion. In addition to the normal security deposit, 10% of the cost of these items shall be retained as security for performance. Defects noticed during the guarantee period shall be rectified by the Contractor within seven days of notice; failing which the Department shall get the work done through another agency at the Contractor's risk and cost. The guaranteeing firm shall inspect the treatment annually during the guarantee period and certify accordingly. The 10% security deposit may be replaced by an equivalent bank guarantee, valid for the guarantee period.
- 12.2 Aluminium Works / uPVC Windows:** A five-year guarantee against unsound material, workmanship and defective anodising/powder-coating shall be furnished in the prescribed proforma, countersigned by the Contractor. 10% of the cost of these items shall be retained as security deposit, releasable five years after completion if performance is satisfactory (or earlier against an equivalent bank guarantee); defects during the guarantee period shall be rectified within seven days, failing which rectification shall be carried out by another agency at the Contractor's risk and cost.
- 12.3 Water Supply and Sanitary Installations:** A ten-year guarantee shall be furnished in the prescribed proforma; 10% of the cost of these items shall be retained as security deposit, releasable after ten years if performance is satisfactory (or earlier against an equivalent bank guarantee), with the same seven-day rectification obligation as above.
- 12.4** A five-year guarantee bond (in the prescribed proforma) shall additionally be furnished for: uPVC windows/doors/ventilators, fire-resistant doors, polycarbonate sheet, expansion joints, and sanitary fittings.
- 12.5** The Contractor shall submit authenticated copies of itemised bills for mines materials and other major items along with each Running Bill, and for any other materials demanded by the Engineer-in-Charge.

13. Permissions, Clearances and Approvals

- 13.1** Earth-cutting permission and forest-clearance permission, where required for execution of the work, shall be obtained from the local administration; this is the Contractor's responsibility.
- 13.2** The Contractor shall provide and fix factory-manufactured aluminium windows conforming to CPWD specification, after inspection of the factory by the Engineer-in-Charge, at no extra cost.
- 13.3** The Contractor shall submit a fire safety certificate after completion of the project, and obtain local body/GMC approval where applicable; nothing extra shall be paid except fees payable to the Government Department/local body.
- 13.4** The Contractor shall submit final as-built drawings for all civil work.

14. Taxes and Statutory Deductions

The bidder shall abide by the rules and regulations under GST and under the Mines & Minerals Department, Government of Assam, as amended from time to time; deductions shall be made from the gross value of work done in all bills as per the provisions of the respective Acts. Nothing extra shall be paid on account of such deductions.

15. Conduct, Discipline and Identity of Workers

15.1 The Contractor shall be responsible for the behaviour and conduct of his workers; no worker with a doubtful integrity or bad record shall be engaged.

15.2 Identity cards shall be issued to workmen after proper police verification, based on a list submitted by the Contractor; the cost of photographs shall be borne by the Contractor, and identity cards shall be carried at all times while working at site.

16. Contingencies, Coordination and Presumed Risks

It is presumed that the Contractor has satisfied himself as to all possible contingencies, incidental charges, wastages, bottlenecks and acts of coordination likely to be required between different agencies during execution; nothing extra shall be payable on this account.

17. Protection of Work, Monsoon and Hindrances

17.1 The Contractor shall make all necessary arrangements, at no extra cost, for protecting work already executed and work in progress from rain, fog or extreme weather, including temporary shelters, during the monsoon; no claim for hindrance shall be entertained on this account.

17.2 Hindrances such as rain or festival bandhs shall not be considered grounds for extension of time; the Contractor is expected to study local rainfall patterns and festival calendars and deploy resources (including two shifts, where necessary) to compensate for consequent loss of time.

18. Cleanliness, Stacking and Waste at Site

18.1 The Contractor shall not stack building material, malba, muck or rubbish on land or roads belonging to the local development authority or to others. Such material shall be removed periodically to approved dumping grounds, with all necessary permissions obtained by the Contractor at his own cost; nothing extra shall be payable. Violation shall render the Contractor liable to pay stacking charges/penalties levied by the local body, recoverable from any sums due to him, including the Security Deposit and performance guarantee.

18.2 The site shall be kept clean at all times to avoid nuisance to occupants of adjacent premises. Water-logging and accumulation of wastewater/slush shall be prevented; discharge into the public drainage system requires prior permission and payment of applicable charges by the Contractor. The Contractor shall fumigate the site periodically to control mosquitoes, provide lighting and temporary ventilation in basements, and install submersible pumps with automatic on/off control in basement sumps.

18.3 The Contractor shall not wash transit-mixer drums at site, and shall prevent spread of leachate/cement slurry, keeping the site neat and clean at his own cost.

19. Inspection of Work

- 19.1 In addition to relevant contractual provisions, the work shall be open to inspection by Senior Officers of CPWD, SE (W cum TLQA) o/o ADG office, Guwahati and representatives of the client. The Contractor shall be present, or have a duly accredited responsible representative present, to receive instructions upon reasonable notice of any such inspection visit.
- 19.2 The consultant and TPQA agency appointed by CPWD shall inspect works, including workshops and fabrication factories, to ensure execution in accordance with the design, drawings and specifications; observations shall be communicated through CPWD engineering staff, and compliance reported to CPWD.
- 19.3 Senior Officers of CPWD and dignitaries from the client authority may inspect ongoing work at any time, with or without prior intimation. The Contractor shall therefore maintain at site, at all times:
 - i) A display board showing work details,
 - ii) Weekly progress against targets, reasons for shortfall, and manpower/wage status;
 - iii) A clean entrance and surrounding area;
 - iv) Layout/key plans and building drawings (plans, elevations, sections);
 - v) Up-to-date bar chart/CPM/PERT displays;
 - vi) Details of quantities executed, balances, deviations and possible extra/substituted items;
 - vii) plastic/cloth-mounted sets of building drawings; and
 - viii) a set of helmets and safety shoes for the exclusive use of visiting officers/dignitaries.

20. Structural Safety of Formwork and Temporary Works

- 20.1 Where the height of concrete casting exceeds 3.5 m, or where higher loading occurs during casting, or for spans exceeding 5 m or special structures (domes, vaults, steel structures), centring/scaffolding/staging shall be designed by a qualified and experienced person/agency, proof-checked by a similarly experienced person/agency, and approved by the Engineer-in-Charge, with reference to Clause 7 of IS: 14687.
- 20.2 A method statement for erection/dismantling of centring/scaffolding/staging, for the concreting sequence, and for anchoring of steel structures, shall be prepared by the Contractor and approved by the Engineer-in-Charge before work commences, with reference to Clause 9 of IS: 14687.
- 20.3 A formwork watcher shall be engaged during erection, concreting and dismantling to detect any movement or instability.
- 20.4 A detailed field-safety inspection programme for such structures at different stages shall be prepared and strictly followed.
- 20.5 The prime responsibility for the safety of the false work — for both concrete and structural steelwork — rests with the Contractor. Safety nets, fall-arresting systems and other safety gear for workers on these structures shall be strictly provided.

21. **Prevention of Nuisance and Pollution**

The Contractor shall take all necessary precautions to prevent nuisance or inconvenience to owners, tenants, occupants of adjacent properties and the public, and shall avoid damage to adjacent property or services, making good at his own cost any damage caused, to the entire satisfaction of the Engineer-in-Charge. Methodology and equipment shall be selected to minimise environmental pollution, construction time and inconvenience to road users, occupants and the public, and to prevent pollution of streams and waterways. All waste and superfluous material shall be carted away by the Contractor to the Engineer-in-Charge's satisfaction.

22. **Personal Safety and Hygiene for Labour**

The Contractor shall provide, at his own cost:

- i) Protective footwear and gloves for workers on cement/lime-mortar/concrete mixing and pipe/sewer-line openings;
- ii) Welders' protective eye-shields;
- iii) Safety helmets and harnesses/belts;
- iv) Adequate sanitation, drinking water and first-aid facilities;
- v) Masks and gloves as required;
- vi) Clean temporary hutments for resident workers, where permitted;
- vii) Ensure workers wear helmets and shoes at all times.
- viii) Overhead lifting of heavy material shall be avoided in favour of barrow wheels/hand-lift boxes;
- ix) Tobacco and cigarette smoking shall be prohibited on site;
- x) Machinery shall be properly guarded;
- xi) Hoists, lifts and lifting tackle shall be maintained in good condition, with safety nets to arrest falling material;
- xii) Durable, reusable formwork systems shall be used and properly maintained; walking surfaces and boards at height shall be soundly constructed with safety rails/belts;
- xiii) Fire-prevention measures, extinguishers and sand buckets shall be provided;
- xiv) Sufficient lighting shall be provided for night work;
- xv) The Contractor shall comply with the safety procedures and norms of NBC 2016, and with any COVID-19 SOPs issued by the Government of Assam/India from time to time.

23. **Safety Measures, Tools and Plant at the Construction Site**

- 23.1 The work site shall be properly barricaded (minimum 3.0 m height, using CGI sheeting, before commencement of work, at the Contractor's cost) with adequate, visible signage (e.g. 'Work in Progress'). Construction malba shall be regularly removed on a daily basis. Proper MS-pipe scaffolding with work platforms and easy-access ladders shall be provided, and a first-aid kit maintained at site. The Contractor bears full responsibility, and all consequent expense, for any accident occurring due to lack of safety measures, with no extra payment or Department liability arising therefrom.

- 23.2 The Contractor shall deploy necessary tools and plant, in required numbers, at his own cost and risk, to ensure smooth and timely execution at every stage. The decision of the Engineer-in-Charge shall be final as to which item of tools and plant is used at a particular time, and the Contractor shall strictly adhere to it. The following description and quantum are indicative (not mandatory) minimum guidance; the Contractor shall submit his own list of proposed tools and plant, calibrated to project milestones, along with the programme and progress chart:

S. No.	Tools & Plant	Quantum
I.	Batch mix Plant as per IS:4925	As per requirement
II.	Steel Centering and shuttering	As per requirement
III.	Excavator cum Loader	As per requirement
IV.	Concrete mixer with hopper	As per requirement
V.	Plate Vibrator	As per requirement
VI.	Needle Vibrator	As per requirement
VII.	Bar Bending Machine	As per requirement
VIII.	Bar Cutting Machine	As per requirement
IX.	Compressor 5 cmm	As per requirement
X.	Earth compactor 2 T	As per requirement
XI.	Floor grinding machine	As per requirement
XII.	Welding machine	As per requirement
XIII.	DG Set (63 KVA) (one suitable for batching plant)	As per requirement
XIV.	Grinder, Drilling machine, etc.	As per requirement
XV.	Water Pump	As per requirement
XVI.	Chase cutter	As per requirement
XVII.	Concrete Pump	As per requirement
XVIII.	Crane suitable for height up to 30 m	As per requirement
XIX.	Transit Mixer (Miller)	As per requirement

- 23.3 To achieve the programmed progress, the Contractor must bring the required shuttering material for cement concrete and RCC work to site within 30 days from the date of start of work. All other equipment shall be brought, installed and commissioned at site at least one week before its actual planned use; workshop facilities for fabrication, addition, alteration and other allied works shall be arranged by the Contractor at his own cost.

- 23.4 Where the requirement at any stage exceeds the finalised programme, additional machinery/equipment shall be arranged by the Contractor at his own cost, including equipment for arranging concrete from RMC-producing plants; nothing extra whatsoever shall be paid on this account. All equipment, tools/plant and machinery shall be kept in good condition at all times.

24. Site Laboratory and Office Infrastructure

- 24.1 A site laboratory with the minimum equipment specified in CPWD specifications/this tender shall be established, made functional and maintained within three months of the commencement date, at no extra cost to the Department.
- 24.2 ~~Within 30 days of commencement, and until completion (including any extended period), the Contractor shall provide a semi-permanent site office of not less than 50-sqm carpet area, comprising a conference room (with table and chairs), an executive chair, a drawing board, an office room for CPWD officials (table, executive chair, almirah, visitor chairs), two all-in-one desktop/laptop computers (i7, 16GB RAM, 1TB SSD) with printer, a common toilet, and a pantry — all rooms equipped with AC, fans, vitrified tile flooring and false ceiling. A layout plan of the site office shall be submitted for approval within 10 days of commencement. Nothing extra is payable; failure to provide the office infrastructure attracts a non-refundable penalty of Rs. 1,00,000 per month. The Contractor shall also provide helmets, gloves and leather shoes for all field staff of the Department for the duration of construction.~~

25. Environment Protection — Construction Phase and Worker Facilities

The Contractor shall strictly adhere to the following conditions as part of his contractual obligations:

25.1 Construction Waste and Worker Facilities

- The Contractor shall collect all construction waste generated on site, and shall consider segregating waste based on utility, examining means of sending it to manufacturing units that use it as raw material, or to other sites requiring it (typical debris: broken bricks, steel bars, broken tiles, spilled concrete and mortar).
- The Contractor shall provide potable water and other amenities for all workers as per the contract.
- The Contractor shall provide the minimum level of sanitation and safety facilities described in the CPWD GCC — clean drinking water, latrines and urinals as per applicable provisions, at not less than 1 toilet per 30 employees per shift, provided from the start of building operations, with sewer connection made as soon as practicable. Every toilet shall shelter the occupant from view and weather, shall be maintained sanitary, with adequate disinfectant and natural/artificial illumination provided.
- The Contractor shall ensure air pollution due to dust/generators is minimised, preventing adverse effects on workers and the public, through proper screening, covering of stockpiles, covering brick and dusty-material loads, wheel-washing facility, gravel pits and water spraying, together with: clearing vegetation only from areas where work will start right away; vegetating/mulching areas not used by vehicles; applying gravel/landscaping rock where mulching/paving is impractical; upgrading unpaved site roads (surface strength, particle size/shape/mineral type, and surface gravel to limit fine

particles below 0.075mm to 10-20%); water-spraying (fine mist, not wasteful) to control dust, especially on dusty materials before transfer/loading/unloading, demolition areas, unpaved haul roads and excavation/earth-moving areas; limiting on-site vehicle speed to 10 km/hr; covering all material storage against wind-blown dust; promptly cleaning up spills of dirt/dusty material and concrete slurry/liquid waste before it infiltrates soil or runs off; providing hoardings not less than 3 m high along the site boundary next to a road/public area, at his cost; providing dust screens/sheeting/netting to scaffolding along the building perimeter, at his cost; covering stockpiles of dusty material with impervious sheeting, at his cost; and covering dusty vehicle loads with impervious sheeting before they leave site, at his cost.

25.2 Recycling, Leachate and Site Staging

- The Contractor shall provide an easily accessible, dedicated area for separation, collection and storage of recyclable materials (at minimum: paper, corrugated cardboard, glass, plastics and metals), coordinated with anticipated collection services, and may employ cardboard balers, can crushers, recycling chutes and workstation collection bins to enhance the programme.
- The Contractor shall ensure that no construction leachate (e.g., cement slurry) is allowed to percolate into the ground, through reduction of wasteful curing, collection, basic filtering and reuse, and shall collect drainage run-off from construction areas and material storage sites, diverting flow away from polluted areas using temporary drainage channels/perimeter dyke-swale to the treatment device or municipal sewer line.
- Staging (dividing the construction area into two or more zones to minimise exposed soil at any given time) shall be adopted to separate undisturbed land from land disturbed by construction activity and material storage.

25.3 Worker Safety Compliance under NBC 2005 Part 7

The Contractor shall comply with the safety procedures, norms and guidelines outlined in Part 7 'Constructional Practices and Safety', 2005, National Building Code of India. A copy of all pertinent regulations and notices concerning accidents, injury and first-aid shall be prominently exhibited at the work site. A person qualified in first-aid shall be available at site to render and direct first-aid, with a telephone provided and hospital numbers displayed; complete reports of all accidents and action taken shall be forwarded to the competent authorities. The Contractor shall ensure, at his cost: (a) guarding of all parts of dangerous machinery; (b) precautionary signs for working on machinery; (c) hoists, lifts, lifting machines, chains, ropes and other lifting tackle maintained in good condition; (d) durable, reusable formwork systems, properly maintained; (e) walking surfaces/boards at height of sound construction, with safety rails/belts; (f) protective equipment (helmets, etc.); (g) fire-prevention measures, extinguishers and sand buckets in fire-prone and other areas; and (h) sufficient, suitable lighting for night work.

25.4 Material Storage, Waste and Spill Management

Storage of material shall follow NBC 2005 Part 7, Section 2 (Storage, Stacking and Handling), to the Engineer-in-Charge's satisfaction, minimising wastage and preventing misuse, damage, inconvenience or accident; watch-and-ward of the Contractor's materials is his own responsibility, with a proper layout plan for stacking/storage considering access and vehicle manoeuvrability at different construction stages. The Contractor shall provide adequate garbage bins around the site and workers' facilities, keep the site litter-free, and provide separate, Hindi/English-labelled bins for plastic, glass, metal, biological and paper waste. A Spill Prevention and Control Plan shall be submitted before construction begins, stating measures to stop the source of a spill, contain it, dispose of contaminated material/hazardous waste (pesticides, paints, cleaners, petroleum products), and designating trained personnel for spill prevention/control.

25.5 Recycled Content, Regional Materials and Indoor Air Quality

Where directed, the Contractor shall collect and submit material certificates for materials with high recycled (post-industrial and post-consumer) content — e.g., RMC mix with fly-ash, recycled-content glass, calcium-silicate boards. Where possible, materials/vendors shall be selected from within an 800 km radius of the site. The Contractor shall adopt an Indoor Air Quality (IAQ) management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways, sequencing installation to avoid contaminating absorptive materials (insulation, carpeting, ceiling tile, gypsum wallboard) and protecting stored/installed absorptive materials from moisture damage. Prior to handover, all internal spaces shall be flushed out — doors and windows opened for 14 days — to vent toxic fumes from paints, varnishes and polishes. The Contractor shall minimise indoor air contaminants that are odorous, irritating or harmful to installers and occupants, and shall ensure paints, coatings and primers used do not exceed the applicable VOC content limits specified in the Schedule of Quantities, where such items are included.

25.6 Water Use, Debris Removal and O&M Documentation

The Contractor shall spray curing water on concrete structures without allowing free flow of water; concrete structures shall be kept covered with thick cloth/gunny bags with water sprayed on them, and water-pounding done on all sunken slabs using cement-sand mortar. All rubbish and debris generated by the works shall be removed, keeping the site clean and tidy throughout the contract period; serviceable and non-serviceable (malba) material shall be segregated and stored separately, with malba collected in well-formed heaps at safe locations. Materials likely to cause dust nuisance or environmental pollution shall be removed at the earliest and suitably covered until removed; glass and steel shall be dumped/buried separately to prevent injury. Debris removal shall be carried out during daylight, with artificial lighting provided where visibility is poor. The Contractor shall provide O&M manuals wherever applicable, and shall make himself conversant with the Site Waste Management Programme Manual, actively contributing to it by estimating the nature and volume of waste generated by the relevant process/installation.

25.7 Materials, Fixtures and Equipment — Sustainability Requirements

- The Contractor shall produce, wherever feasible, a certificate regarding the distance of the source of the relevant material.
- Unless otherwise stated, cement used for reinforced concrete, precast members, mortar, plaster and building blocks shall be PPC meeting IS 1489 (Part I) fly-ash-content requirements; the Contractor shall obtain the manufacturer's certificate of fly-ash content for each consignment batch.
- The Contractor shall comply with MoEF Notification S.O.763(E) dated 14th September 1999 on greater fly-ash utilisation; where the work falls within a 50 km radius of a Thermal Power Plant, 100% fly-ash-based bricks/blocks shall be used in construction.
- All paints, polishes, adhesives and sealants (internal and external, on any surface) shall be Low-VOC products, with the Engineer-in-Charge's prior approval obtained before application.
- All plumbing and sanitary fixtures shall meet the minimum LPM (litres per minute) and LPF (litres per flush) prescribed by the Engineer-in-Charge; the Contractor shall employ 100% zero-ODP insulation, HCFC/CFC-free HVAC and refrigeration equipment, and halon-free fire-suppression/extinguishing systems.
- The Contractor shall ensure water and electricity are not wasted during construction, correcting any wastage brought to his attention by the Engineer-in-Charge, and shall install meters/measuring devices to record monthly consumption of water, electricity and diesel for the entire project tenure.
- The Contractor shall use treated recycled water of appropriate quality for construction, if available.
- No construction debris shall be taken away from site without the Engineer-in-Charge's prior approval; once approved, the Contractor shall ensure safe disposal only at approved dumping sites, including recycling of unused chemical/hazardous waste (oil, paint, batteries, asbestos) where applicable.
- To ensure energy efficiency, all pumps, motors and engines used during or installed after construction shall be subject to the Engineer-in-Charge's approval and direction; all lighting installed around the site and at labour quarters during construction shall be CFL bulbs of appropriate illumination, unless specifically prescribed otherwise.

Failure to adhere to any of the above environmental conditions, without the Engineer-in-Charge's approval, shall be deemed a violation of contract, rendering the Contractor liable to penalty as per the terms of the agreement.

25. Variation in Consumption of Materials

Variation in consumption of materials shall be governed as per CPWD Specifications 2019, Vol. I & II (with correction slips up to date) and the applicable clauses of the contract. Specific clauses governing variation in consumption of pig lead, cement and reinforcement steel are as set out in Part III of this document (Cement and Reinforcement Steel conditions).

27. Materials-at-Site (MAS) Register — Proforma

The MAS Register shall record, at the time of supply/issue of plant and other materials: (i) details of bills/challans in respect of supply; (ii) details of transportation, including vehicle/lorry registration number; and (iii) the specific location where materials/plant are displayed, delivered or issued. The register (headed with Section/Sub-Division, Name of Work, Name of Article/Item, Estimated Requirement and Issue Rate) shall be maintained in the following proforma:

Sl. No.	Date of Receipt / Challan-Bill Details / Location / Vehicle No.	Received from / Issued to	Qty. Received	Date of Issue	Location Displayed/ Delivered/Issued	Qty. Issued	Balance Qty.	Signature (Contractor's Rep.)	Signature (EIC/AE/EE Rep.)	Remarks
1.										

28. Cooperation with Sub-Contractors and Other Agencies

The work shall be planned to ensure proper coordination between disciplines (sanitary and water supply, drainage, rainwater harvesting, electrical, fire-fighting, IT/communications, and any other services); noise shall be kept to a minimum to avoid disturbance to occupants of adjoining buildings. No claim shall be entertained on account of site constraints, non-availability of skilled/semi-skilled/unskilled labour, or non-availability of machinery spares; tenderers are advised to visit site and quote accordingly.

SPECIAL CONDITIONS

The work shall be executed as per given below. Following time period shall be followed:-

Description	Type of Qtrs.	Time required (in days)	Deduction (non-refundable) in case of failure to meet the timeline)
		Civil & Electrical	Civil & Electrical
From the date of hand over of that particular quarter.	(a) Type II to IV	45 days	Rs. 500/- (Rs. Five hundred only) per quarter for each day of delay

PART III — PARTICULAR SPECIFICATIONS OF THE WORK

1. General

- 1.1 The work shall generally be carried out in accordance with CPWD Specifications 2019, Vol. I & II (corrected up to the last date of submission of the bid), read together with the order of precedence set out in Part I, Clause 4.3 above.
- 1.2 All construction lines and layout shall be established by coordinate marking using Total Station survey, duly supported by DGPS or LiDAR technology.
- 1.3 All sanitary fixtures provided in similar areas shall be of identical make, brand and series. Only star-headed stainless-steel screws shall be used, unless otherwise specified.
- 1.4 The Contractor shall provide a wheel-washing area at the construction site at no extra cost, and shall not store or dump construction material/debris on metalled roads. Any storage area beyond the metalled road requires prior approval of the Engineer-in-Charge and must not obstruct traffic flow or endanger pedestrians.
- 1.5 **Dust and Air-Quality Control on Roads:** the Contractor shall raise wind-breakers (CGI sheet/plastic or similar) on all sides of the plot to prevent dust escaping the site; ensure vehicles carrying construction material are covered and cleaned before leaving; provide masks to workers engaged in loading/unloading/carriage of dusty material; provide medical help/investigation/treatment relating to dust-emission exposure; ensure C&D waste is transported only to designated C&D waste sites with due records; compulsorily use wet-jet methods for grinding and stone-cutting; comply with MoEF guidelines, 2010 (as amended); inspect for black-smoke-generating machinery and use cleaner fuel; ensure DG sets comply with the latest MoEF emission norms; use vehicles with a valid Pollution Under Control certificate and restrict on-site vehicle speed to 20 km/hr (using speed bumps or traffic diversion where needed); and cover construction material with tarpaulin.
- 1.6 No borewell shall be executed at site without prior Electrical Resistivity Imaging (ERI)/Vertical Electrical Sounding (VES) testing and approval of the results by the Engineer-in-Charge; nothing extra is payable on this account.
- 1.7 If required during construction to cut one or more trees, the Contractor shall obtain necessary permission from the concerned Government department; reasonable expenditure incurred in obtaining such permission may be reimbursed against submission of vouchers/bills.
- 1.8 Entry to the campus may be restricted to particular gates, and the Contractor shall follow all campus security rules at no extra cost. As the work area lies close to occupied office/residential buildings, extra precaution shall be taken during excavation and other operations.

2. Earth Work

- 2.1 Earth work shall be carried out in accordance with CPWD Specifications 2019 Vol. I & II and NBC 2016, with up-to-date correction slips.

- 2.2 Excavation shall be to the width of the footing/retaining-wall/development-work/MEP requirement, including necessary margins for construction operations, as per drawing or as directed. Where soil nature, trench depth or season does not permit vertical sides, the Contractor shall, at his own expense, provide shoring, strutting and planking, or cut slopes/steps to a safe angle, with due regard to safety; nothing extra shall be paid for such steps/slopes.
- 2.3 The Contractor shall, at his own cost, make all necessary arrangements — including pumping, dredging and bailing out water from any source (rain, floods, sewer/water-main leakage, or high sub-soil water table) — to keep the area of work sufficiently dry, using a system approved by the Engineer-in-Charge; rates for all items are deemed inclusive of such dewatering, and nothing extra is payable.
- 2.4 The sub-soil water table indicated in the soil investigation report is indicative only and may vary. The Contractor shall carry out detailed soil investigation for design purposes, make his own assessment of the likely sub-soil water level at the time of execution, and provide adequate pumping/dewatering and appropriate foundation anchoring, as required by structural design and applicable IS Codes. The sub-soil water table shall be maintained at least 50 cm below the PCC level during laying of PCC, waterproofing, and raft foundation/backfilling, and the water table shall not be allowed to rise above the base-of-raft level until the structure attains sufficient height to counter uplift pressure. The sequence of construction shall be approved by the Engineer-in-Charge, and the Contractor shall take all safety precautions (e.g., sheet-pile works) — checked by an IIT/NIT at the Contractor's cost — to avoid caving-in of adjoining slopes.
- 2.5 All necessary arrangements for slope stabilisation and temporary retaining structures (diaphragm wall, cofferdam, anchor pile, shoring/shuttering) required during excavation shall be made by the Contractor at his own cost. Major excavation shall be carried out by mechanical excavator, at no extra payment.
- 2.6 Surplus earth from excavation shall be used for compensatory plantation at a separate location, as elsewhere specified; the remaining earth shall become the Contractor's property and shall be removed from site within the scope of the agreement, only on instructions from the Engineer-in-Charge, and dumped at a designated place, with all necessary permissions from local/traffic/police authorities obtained by the Contractor at his own cost. Royalty on such surplus earth shall be borne by the Contractor at prevailing rates.
- 2.7 Dewatering falls within the scope of the contract. The Contractor shall design, install, maintain and operate the entire dewatering system (wells, trenches, pumps, etc.) through qualified and experienced personnel, in a manner that prevents seepage, boils, loss of fines, corrosion and softening of the strata, and maintains the stability of the excavation. Any damage caused by inadequacy or failure of the dewatering system shall be made good by the Contractor at his own cost.

3. Cement

- 3.1 The Contractor shall procure OPC 43-Grade cement (IS 8112:1989) or PPC (IS 1489 Part I) from reputed manufacturers on the preferred-make list, supplied in 50 kg bags bearing the manufacturer's name and ISI mark. PPC shall be used in RCC structures per Directorate General of Works Circular No. CDO/SE(RR)/Fly Ash (Main)/102 dt. 09.04.2009, and shall be treated at par with OPC for Design Mix Concrete, subject to the manufacturer's certified fly-ash percentage; no further admixing of fly ash is permitted where PPC is used.
- 3.2 Cement shall be brought to site in bulk supply of approximately 50 tonnes, or as decided by the Engineer-in-Charge. For each grade/type, cement shall be stored in two separate weatherproof, RCC godowns (one for tested, one for fresh/under-test cement) constructed by the Contractor at his own cost, each of capacity not less than 100 tonnes, with a single door and two locks (one key with the Department, one with the Contractor).
- 3.3 Cement shall be tested by/on behalf of the Engineer-in-Charge before use; the Contractor shall supply the test cement free of charge, including transportation, and shall bear all cost of testing, packing and sampling. Rejected cement shall be removed from site within a week of written order; if the Contractor fails to do so within three days of notice for damaged cement, the Engineer-in-Charge shall have it removed at the Contractor's cost.
- 3.4 Actual issue and consumption of cement shall be regulated and accounted for separately by type, as per Clause 10 of the contract, with theoretical consumption worked out under Clause 38; where actual consumption is less than theoretical consumption (including permissible variation), recovery/rejection shall apply as per the relevant Schedule provisions. Cement remaining unused shall not be removed from site without the Engineer-in-Charge's written permission.
- 3.5 A cement consumption register, in the format at Annexure-30 of the SOP for CPWD Works Manual 2024, shall be maintained at site, machine-numbered and initialled by the EE; the godown and register shall be checked by the AE/EE weekly or fortnightly (at Headquarters) or on each site visit (for works outside Headquarters).

4. Reinforcement Steel

- 4.1 The Contractor shall procure ISI-marked Corrosion-Resistant Steel (CRS)/TMT reinforcement bars conforming to IS 1786-2008, of Fe 500D grade or higher, from primary producers (SAIL, Tata Steel, RINL, Jindal Steel & Power, JSW Steel), in accordance with O.M. CSQ/SE(TAS)/Steel/2024/262-H dated 14.08.2024 (and amendments), using 'Bar Set-I' bars as classified therein (complying with IS 1786 plus additional chemical-composition, TM-ring, marking and ISO 9001/14001 requirements). Nothing extra shall be paid on this account.
- 4.2 The Contractor shall obtain and furnish to the Engineer-in-Charge the manufacturer's certificate (process of manufacture, chemical composition, mechanical test results, cast number) and original vouchers/test certificates for every consignment supplied to site.
- 4.3 Each consignment shall be tested for chemical composition and physical properties (including bend/re-bend test) at a NABL-accredited or Government laboratory; steel not conforming to specification shall be rejected and removed from site within a week of written order, at the Contractor's cost. Specimens shall be selected at random, at least one

sample from each size for every 25 tonnes or part thereof, subject to the following minimum frequency for tensile/bend tests, in line with IS 1786:

Size of Bar	Number of Tests
Up to and including 10 mm	One test each for tensile and bend test for each 25 tonnes or part thereof, for each size
Above 10 mm up to and including 16 mm	One test each for tensile and bend test for each 35 tonnes or part thereof, for each size
Above 16 mm	One test each for tensile and bend test for each 45 tonnes or part thereof, for each size

4.3A Tolerance on Nominal Mass: the tolerance on nominal mass of individual samples of reinforcement bars shall not deviate from the theoretical mass by more than the percentage given below, and the tolerance for the batch as a whole shall be tighter than for individual coils/samples:

Diameter (mm)	Tolerance on Nominal Mass — Individual Sample	Tolerance on Nominal Mass — Batch
Up to 10 mm	± 8%	± 5%
Above 10 mm up to 16 mm	± 6%	± 4%
Above 16 mm	± 4%	± 2%

- 4.4 The Contractor shall supply, free of charge, the steel required for testing (including transportation); the cost of tests shall be borne by the Contractor. Steel shall be stored on a brick/timber platform (30-40 cm height) to prevent distortion and corrosion, with bars of different sizes/lengths stored separately; steel remaining unused shall not be removed from site without written permission of the Engineer-in-Charge.
- 4.5 Actual issue and consumption of steel shall be regulated and accounted for as per Clause 10/38 of the contract; where consumption is less than the theoretical requirement (including permissible variation) to an extent affecting structural adequacy, the work shall be summarily rejected, otherwise recovery shall apply at the prescribed rate. No adjustment is made for excess consumption. Different grades of bars shall not be mixed within the same structural member, and changeover between grades shall occur only at defined levels/elements.
- 4.6 The Contractor shall provide approved cover blocks/spacer bars/chairs of the required shape and size (factory-made round/rectangular type) to ensure accurate positioning and correct concrete cover, and shall use couplers for splicing reinforcement bars where required.
- 4.7 A Bar Bending Schedule (BBS), prepared as per structural drawings and conforming to IS 2502, shall be submitted (two copies, including revisions) to the Engineer-in-Charge

for approval before execution; the BBS shall preferably be software-prepared, with a competent person deputed at site.

- 4.8 A Materials-at-Site (MAS) Register, recording bills/challans, transportation details and specific location of receipt/issue, shall be maintained in the prescribed proforma.

5. Structural Steel (Tee, Angle, Channel, Structural Tubes, Plates and R.S. Joist)

The Contractor shall procure structural steel from primary producers on the preferred-make list; in their absence, structural steel with a valid BIS licence conforming to IS 2062-2006 may be used, with the NIT-approving authority's permission. Samples shall be tested by/on behalf of the Engineer-in-Charge; non-conforming steel shall be rejected and removed within a week at the Contractor's cost. Steel shall be stored to prevent distortion/corrosion, at no extra cost, and the cost of testing shall be borne by the Contractor. Where actual weight differs from standard weight, only the standard weight (if actual exceeds it) or the actual weight within permissible variation (if actual is less) shall be paid.

6. Reinforced Cement Concrete (RCC) Work

- 6.1 RCC work shall be executed as Design Mix Concrete, unless otherwise specified; nominal-mix RCC shall follow CPWD Specifications. Minimum M30 grade concrete shall be used in all structural elements (except pile work). Mix design shall be carried out by the Contractor, at his own cost, through IIT Guwahati, NIT Silchar, or another institute approved by the Engineer-in-charge, based on target mean strength $F_{ck} + 1.65S$ (S = standard deviation for 'Good' quality control, as per grade). Revised mix design is required on any change of source or characteristic properties of ingredients; each brand of cement used shall have its own approved design mix.

- 6.2 The Contractor shall submit the mix-design report for approval within the time given from the date of the letter of acceptance, and shall bear all costs of mix designing and testing, including laboratory charges, sample packaging, sealing and transportation. The Contractor shall install a mini laboratory at site for accelerated testing of design-mix concrete as per IS 9013; the Department reserves the right to independently sample and test production concrete.

- 6.3 Admixtures, where used, shall conform to IS 9103, with chloride content within IS 456-2000 limits. Concrete shall be handled from mixing to final placement by methods preventing segregation, loss of ingredients or contamination; where conveyed by chute, the chute shall be metal or metal-lined, restricted to 3 m unless approved otherwise; where pumped, the conduit shall be properly primed, and pumping not interrupted; concrete shall not be dropped from a height exceeding 1.5 m. Concreting shall be done only in the presence of, and after approval by, the Engineer-in-Charge's representative, and shall be carried out continuously between approved construction joints, minimised and set at right angles to the member's general direction.

6.4 Conditions for Ready-Mix Concrete (RMC)

- The Contractor may use concrete from RMC plants, with the prior approval of the Engineer-in-Charge, instead of preparing it at the central batching plant at site, without extra cost, to expedite progress. Nothing extra shall be payable for procuring RMC from an external plant.

- Within 15 days of award of work, the Contractor shall submit a list of at least three reputed RMC plant companies, with details of the transit mixers and pumps to be deployed, owner/company name, location, capacity, technical establishment, past experience, and the text of the proposed MoU between the Contractor (purchaser) and the RMC plant (supplier). The Engineer-in-Charge shall approve in writing (subject to the MoU being drawn), and the Contractor shall execute the MoU with the approved RMC plant and submit it within a week of approval. No RMC purchase is permitted before completion of these formalities. Notwithstanding such approval, the Contractor remains fully responsible for the quality of concrete, including input control, transportation and placement.
- The Engineer-in-Charge reserves the right to inspect at any stage and reject concrete not meeting quality requirements. The Contractor shall draw the MoU/agreement with the RMC owner/company carefully, incorporating all terms, conditions and specifications of this tender document, including: (i) the Engineer-in-Charge's right to control ingredients, water and admixtures purchased/stored/used, including testing and declaring materials fit or unfit; (ii) calibration checks of the RMC plant; (iii) weight/quantity checks on ingredients, water and admixtures added per batch; (iv) mixing time; and (v) testing of fresh concrete, including continuous workability control and corrective action. The Engineer-in-Charge may periodically depute an authorised representative to the RMC plant; the Contractor shall ensure all necessary manpower and facilities are made available to him there.
- The RMC plant shall use a fully automatic batching plant of capacity not less than 30 cum/hr, with computerised control and print-out of all ingredient proportions.
- All relevant RMC records shall be made available to the Engineer-in-Charge or his representative, who may specify additional quality-control guidelines binding on the Contractor and the RMC plant.
- 43-grade OPC/PPC, as per the schedule of contract (conforming to relevant IS Codes) and of a brand/make/source approved by the Engineer-in-Charge, shall only be used for production of the concrete.
- RMC-produced concrete shall be accepted by the Engineer-in-Charge at site only after all mix requirements in the tender documents are satisfied.
- The item of design-mix cement concrete is inclusive of all ingredients (including admixtures, where required), labour, machinery and T&P required for the specified strength and workability; the quoted rate is net, and nothing extra is payable for changes in the quantities of concrete ingredients (cement, aggregates, admixtures) as per the approved mix design.
- RMC shall be transported to site in a transit mixer conforming to IS 5892, and supplied as per the pre-agreed schedule approved by the Engineer-in-Charge.
- All other concreting operations not specified here (mixing, slump, transportation, placing, compaction, curing) shall follow IS 456-2000, as amended.
- For design-mix RCC other than those specified above, the Contractor shall use design-mix concrete from a central batching/mixing plant at his own cost, or, with the Engineer-

in-Charge's written approval, from an RMC producer; nothing extra shall be payable on this account.

- RMC quantity shall be arranged strictly as required at site, per the pre-agreed schedule; nothing extra shall be payable on this account.
- The item of design-mix cement concrete (whether site-produced or RMC-sourced) is inclusive of all ingredients, labour, machinery and transportation (excluding reinforcement and shuttering, which are separately measured and paid); the rate is net, with no extra payment for changes in ingredient quantities as per the approved mix design, except for extra cement quantity payable under the Schedule of Quantities.

6.5 Fly Ash and Fly-Ash-Blended Cement: concrete mix design and manufacture shall follow IS 456-2000 Clauses 9 and 10, with a qualified concrete technologist available during manufacture. Fly ash used shall conform to IS 3812; water/binder ratio shall be kept as low as practicable to control early carbonation, with chloride-free admixtures conforming to IS 9103 used to achieve workability where necessary. In aggressive chloride/sulphate environments, fly-ash-admixed or PPC-based concrete is recommended (fly-ash content limited to 18% by weight under excessive magnesium-sulphate exposure). Wet curing shall be for a minimum of 10 days (14 days in hot/arid regions). Fly-Ash Admixed Cement Concrete (FACC) requires a computerised blending facility (or equivalent RMC-plant facility); maximum 35% OPC substitution by mass is permitted under IS 1489 (Part I); dry fly-ash shall be stored in weatherproof bins/silos with dust-control filters.

7. Formwork for Exposed Concrete Surfaces

7.1 Centering and Shuttering

- The Contractor must have steel centering and shuttering (with pipes and props) not less than 4,000 sqm for wider use in RCC work.
- Centering/scaffolding/shuttering for casting of RCC roof slabs shall be properly designed by a qualified and experienced agency having past experience of design of heavy centering, and shall be proof-checked as per Clause 7 of IS: 14687 by a similarly experienced person/agency (such as an IIT/NIT), for issue to the Contractor by the Department for execution. Provisions of Clause 9 of IS: 14687 shall be referred for erection safety precautions and other site operations pertaining to false work (centering); D.G. O.M. F. No. 45/SE(TAS)/New Product/2019-20/262-H dated 19.06.2019 may also be referred.
- Where the drawings specifically call for original fair-face concrete finish without rendering/plastering, formwork shall use plywood on steel plates of approved quality.
- Forms shall be constructed to produce a uniform, consistent texture and pattern; horizontals shall be constructed of lumber (not panelled), with joints staggered.
- To achieve a finish free of board marks, formwork shall be faced with plywood (or equivalent) in large sheets, arranged in an approved pattern; joints shall coincide, where possible, with architectural features, sills, window heads, or changes in surface direction, and shall be vertical or horizontal unless directed otherwise, fitted so no blemish or mark is imparted to the finished surface.

- Forms for exposed surfaces shall use grade strips at horizontal construction joints (unless groove strips are specified), tightened against the concrete to avoid spreading/abrupt irregularities/mortar loss; supplementary form ties shall be used as necessary.
- For fair-faced concrete, the position of through-bolts shall be restricted as indicated on the drawings.

- Plywood/steel plates used for exposed surfaces shall be got approved by the Engineer-in-Charge on each use; no form doubtful of producing the desired texture shall be reused.
- Cement of only approved shade shall be used, preferably from a single lot, to achieve textural integrity.

7.2 Class of Surface Finish

For Beams and Slabs: the finish shall be uniform, dense and smooth, with no grout, no grain pattern, no crazing and no major blemishes. Abrupt irregularities not exceeding 3 mm, and gradual irregularities less than 5 mm in a 2 m length, only shall be permitted.

For Columns/Walls/Fins: the finish shall be uniform and smooth, levelled with a screed board, power-floated and steel-trowelled under firm pressure; brush marks shall be less than 3 mm, with gradual irregularities less than 10 mm in a 2 m length.

7.3 Tolerance in Finished Concrete

Formwork shall produce finished concrete true to shape, lines, level, plumb and dimensions shown in the drawings, subject to the following tolerances (unless otherwise specified):

Item	Tolerance
Variation from plumb, up to 3 m height	± 6 mm
Variation from plumb of conspicuous liner, up to 6 m height	± 6 mm
Variation in size of wall openings	(+) 15 mm, (–) 6 mm
Variation in parapet wall thickness (up to 30 cm thickness)	± 6 mm

Slab, Beam and Girder Forms — variation from level or specified grid for beam soffit before removal of shores: in any 3 m, ± 6 mm; in any 6 m, ± 10 mm.

All the above tolerances apply to concrete dimensions only, not to positioning of vertical steel or dowels, and are for local aberration in the finished surface — not a tolerance for the setting/alignment of the entire structure/formwork. Any error within these limits, or otherwise noticed after part/full stripping of forms, shall be corrected in subsequent work to restore the structure's true line, level and alignment.

Ultrasonic Pulse Velocity (UPV) testing for RCC shall be carried out as a routine test to assess the homogeneity and uniformity of concrete, as per Technical Circular No. 18 issued vide CE(CSQ) Letter No. G-2/SE(QA)/CSQ/69 dated 12.02.2013; the fulfilling criteria and other conditions shall be as detailed in that circular.

8. AAC Block Masonry

AAC blocks shall be procured from approved manufacturers, conforming to IS 2185 Part 3 (1981), Grade I (density 551-650 kg/cum), stored on a level dry surface. Joint thickness shall not exceed 10 mm and shall be uniform; wall height built in a day shall not exceed 1.2 m (6 courses); joints shall be recessed, not flush-pointed. A PVC slip membrane (minimum 400 microns) shall be laid before the first course on the plinth beam, per the manufacturer's recommendation. Blocks shall be moistened, not soaked, before laying, with vertical joints staggered by a minimum 100 mm overlap. Two 8 mm-dia bed-joint reinforcement bars shall be placed after every third course (per item nomenclature) for lateral stability. Lintels shall rest on full blocks at either end; sill-course reinforcement at window openings shall extend at least 600 mm beyond the jamb on either side. At RCC-column interfaces, an 'L'-shaped 50x4 mm MS anchor (300 mm long, 100 mm fixed to column with two SS screws/PVC sleeves, 200 mm embedded in masonry) shall be provided at every fourth course, approved by the Engineer-in-Charge. Curing shall be by water spraying only (no flooding). Chases for electrical conduits shall be cut with an electrically operated saw (depth limited to 1/3rd of wall thickness for vertical chases, 1/6th for horizontal), and packed with 1:4 cement mortar after conduit installation. Blocks shall be cut with a carpenter's saw, not hammered. GI wire mesh shall be fixed at all column-wall and beam-wall junctions before plastering.

9. Masonry Work (Brick)

Common burnt-clay bricks of grade 7.5, laid in CM 1:6, shall be used up to plinth level; for the superstructure, AAC block masonry and common burnt-clay brick masonry shall be as per the Schedule of Quantities item. Masonry work shall follow CPWD Specifications 2019 Vol. I & II (with corrections up to bid submission); in case of any conflict between drawing detailing and this specification, this specification shall prevail.

10. Kota Stone

Every slab shall be cut to the required size, fine-chisel-dressed and table/machine-rubbed before paving, with straight, square edges free of chipping and a true, plane surface. Thickness shall be 20/25/30/40 mm as specified, with a tolerance of ± 2 mm; length/breadth tolerance shall be ± 5 mm (hand-cut) or ± 2 mm (machine-cut). No cement slurry (with or without pigment) shall be applied before polishing. Edge moulding shall be provided free of cost wherever required.

11. Wood Work

Timber samples shall be deposited with the Executive Engineer before commencement, supported by cash vouchers and kiln-seasoning/chemical-pressure-treatment certificates. Factory-made shutters shall be sourced from Chief-Engineer-approved factories

conforming to IS 2202 (Part I) 1977; manufacture shall commence only after the Engineer-in-Charge's written approval of the proposed factory, with stage-wise inspection arranged by the Contractor. Shutters failing specified tests shall not be measured or paid, and shall be removed from site within 7 days of written instruction. Original purchase vouchers and delivery challans shall be produced for verification and record.

12. Marble / Granite Stone Slab Work and Tile Work

- 12.1 Where 18 mm marble is unavailable, 16 mm marble may be permitted with a 22 mm base cement-mortar bed (in place of 20 mm), at no extra payment, subject to deduction for the reduced slab thickness. Flooring pattern shall follow the architectural drawings, at no extra payment. Tile/marble/granite sizes in dado/skirting shall be as per architectural drawings.
- 12.2 For granite in counters, window sills, kitchen platforms and similar locations, the rate includes mirror-polishing of exposed edges; for granite up to 2 m for treads, risers, kitchen counters and window sills, a single stone shall be used, at no extra payment. The colour/shade of granite shall be decided by the Engineer-in-Charge; no epoxy or colour-coated granite is permitted.
- 12.3 Vitrified/ceramic tile work shall be executed per the flooring layouts and indicative specifications, conforming to relevant BIS codes and tested at approved laboratories; the Contractor shall obtain prior approval of make, size, shade and colour, with joint patterns as per architectural drawings. Vitrified floor tiles (600x600/800x800/600x1200 mm or other sizes, water absorption < 0.06%, conforming to IS 15622) shall be of approved brand and manufacturer, laid per the approved design and pattern.

13. Water Supply and Sanitary Installation

SCI/CI/PVC and GI pipes, wherever necessary, shall be fixed to RCC columns/beams with rawl plugs or approved fasteners, with protective sleeves where pipes pass through walls/concrete, at no extra payment. The Contractor shall be responsible for protecting sanitary and water-supply fittings and fixtures against pilferage and breakage during installation and until handover of the building.

14. Waterproofing Treatment

The Contractor shall associate himself with a specialized firm, approved in writing by the Engineer-in-Charge, for chemical-based waterproofing treatment on roofs etc., per manufacturer specification. A ten-year Guarantee Bond (releasable in full against an equivalent bank guarantee for ten years) shall be furnished; 10% of the cost of these items shall be retained as guarantee money, in addition to the normal security deposit. Defects during the guarantee period shall be rectified within seven days; failing which the Engineer-in-Charge shall have the work done by another agency at the Contractor's risk and cost. Before execution, the Contractor shall submit and get approved: the name of the specialised firm, trade names of the products to be used, a list of prior works where the treatment was used, and the quantity of chlorides/sulphides in the product.

15. Anti-Termite Chemical Treatment

Anti-termite treatment shall be provided against subterranean termites originating both within the plinth and from the surrounding area, executed as per CPWD Specifications. Post-constructional treatment shall use Chlorpyrifos/Lindane E.C. 20% (1% concentration), applied as specified for soil under existing floors, along external walls (with and without apron), through drilled and plugged holes/channels, as detailed in the relevant Schedule item.

16. Stainless Steel Railing / Handrails

All stainless-steel pipes and plates shall conform to AISI 304 (18/8 composition, carbon $\leq 0.03\%$). Fixing shall use approved stainless-steel expansion bolts and argon-welding, with surfaces cleaned by K2 passivation (nitric + fluoric acid treatment) to eliminate corrosion risk and weld burn marks, and coated with an Inox-type solution to prevent fingerprints and atmospheric-dust settlement. Finished parts shall be measured and paid on a weight basis, correct to the gram; the rate includes all materials, machinery, labour, cartage, lifts and applicable taxes, with any incidental additional requirement deemed included. Installation drawings require the Engineer-in-Charge's approval before work commences.

17. Aluminium Work (Doors, Windows, Ventilators, Cladding, Louvers)

- 17.1 The work shall be carried out through an approved specialist contractor, furnishing all materials, labour, accessories, tools and plant. The agency proposed for aluminium work shall be approved by the Engineer-in-Charge before commencement, with performance certificates submitted within 30 days of the acceptance letter for prior approval of the Chief Engineer.
- 17.2 The Contractor shall prepare and submit complete manufacturing/installation and shop drawings (full-size sections, metal thickness, anchoring details, hardware, connections) for approval before any manufacturing begins, and shall submit fabricated, assembled samples for approval, at his own cost.
- 17.3 Sections shall be extruded by an approved manufacturer conforming to IS designation 63400-WP with chemical composition/technical properties per IS 733 and IS 1282. Fabrication shall use mechanical joints designed for a minimum wind load of 150 kg/sqm (or as designed), with concealed, bi-metallic-action-free accessories.
- 17.4 Anodising shall conform to IS 7088/IS 1868 (minimum average thickness 15 microns, measured per IS 6012), properly sealed per IS 1868/IS 6057, with polythene-tape protection during transport, storage and installation (removed on installation); sample testing costs are borne by the Contractor.
- 17.5 Aluminium sections shall be protected with self-adhesive, non-staining PVC tape; fabricated material shall be carefully transported, examined on receipt, and any damaged pieces expeditiously replaced. Composite units shall be pre-assembled, checked for line/level/plumb, and serial-numbered before final fixing. Contact between aluminium and masonry/dissimilar metals shall be insulated with approved lacquer paint or plastic tape to prevent electro-chemical corrosion. Peripheral gaps up to 10 mm shall be sealed with a backer rod and weather-silicon sealant of an approved make, both inside and outside, to render the installation watertight.

- 17.6 Installation shall use expansion machine bolts/anchor fasteners of approved size, with holes drilled by electric drill; EPDM neoprene gaskets of approved profile/size shall be provided at all locations for air/weather tightness, with samples submitted for approval before procurement.
- 17.7 Hinges, floor springs, stays, handles, tower bolts, locks and other fittings shall be of Engineer-in-Charge-approved quality and manufacture; floor springs shall carry a company-backed 10-year functional guarantee.
- 17.8 Testing of aluminium sections shall be conducted per relevant IS Codes, with samples selected at random by the Engineer-in-Charge; the cost of samples, carriage and testing shall be borne by the Contractor. Payment shall be by actual weight, restricted to the permissible-variation weight where sectional weight exceeds the permissible limit; fixing angles, cleats, fittings and fixtures (handles, hinges, etc.) are excluded from the payable weight.
- 17.9 The aluminium work shall carry a five-year guarantee against unsound material, workmanship and defective anodising/powder-coating, in the prescribed proforma, countersigned by the Contractor; 10% of the cost of these items shall be retained as security deposit, releasable after five years (or earlier against an equivalent bank guarantee) if performance is satisfactory, with the same seven-day rectification obligation as elsewhere specified.

18. Expansion / Seismic Joints

- 18.1 Extruded aluminium modular-type expansion-joint systems shall be provided at all floor-to-floor, wall-to-wall, roof-to-roof, ceiling-to-ceiling and terrace joints, of appropriate width, conforming to ASTM B221-02 and the relevant CPWD DSR item, providing multi-directional seismic movement capacity without stressing the joint components. The system shall use a universal aluminium base member with a self-centering arrangement (circular sphere ends within the extrusion cavity) permitting movement in all directions, including vertical displacement, with a vinyl-EPDM moisture barrier (conforming to ASTM 6063) and a one-part polysulphide/silicone sealant per manufacturer specification.
- 18.2 Installation shall follow the approved drawing: joints cleaned and free of loose aggregate, edges in proper line, continuous frames on each side supporting the EPDM gasket and centre plate, fixed with stainless-steel counter-sunk screws drilled into the base concrete with a bonding agent. The Contractor shall submit specifications and a method statement in advance; execution shall proceed only after the Engineer-in-Charge's approval.
- 18.3 The Contractor shall furnish a ten-year Guarantee Bond (in the prescribed CPWD proforma), co-signed by the specialised agency and the Contractor, guaranteeing performance of the entire expansion-joint treatment. Defects during the guarantee period shall be rectified within 7 days of notice, failing which rectification shall proceed through another agency at the Contractor's risk and cost.

19. False Ceiling Work

False ceiling work shall be carried out per the approved false-ceiling layouts and schedule attached to the tender document. The Contractor shall submit a minimum of

three samples of each proposed item for approval before execution. All false-ceiling work shall be executed through a specialised sub-contractor/vendor, engaged only after the Engineer-in-Charge approves the agency's work-experience credentials as per the general conditions of tender.

20. Road Work

All roads shall be cement-concrete roads, as per drawings and in accordance with CPWD and MORTH specifications.

21. Minimum Quality Assurance (QA) Plan

- 20.1 The Contractor shall submit a Quality Assurance Plan for approval, covering: the number and frequency of required tests (per Clause 11 of Schedule 'F' and applicable BIS codes); the machinery/tools and plant to be deployed, with the timeline for bringing each item to site; a site field laboratory with all required testing equipment; execution per the specifications in Clause 11 of Schedule 'F' (or, where unavailable, the relevant BIS code/manufacturers specification); and a shuttering schedule showing quantities to be brought to site.
- 20.2 The register-maintenance, sampling-witness and MAS-register obligations set out in Part II, Clause 10 above shall apply equally under this QA Plan. It shall be deemed that work so measured, checked and paid is of the required quality, standard and workmanship, meeting both the specified ingredients/functions and sound engineering practice. The precise QA Plan may vary from work to work depending on its nature and volume.

21. Mix design :

- A. The contractor shall carry out design mixes for each class of concrete meeting the requirements as per specification at his own cost.
 - B. The contractor shall submit proposal of mix designs, one month in advance to commencement of concreting work.
 - C. If, department will provide design mix than recovery at the rate of Rs. 50,000/- or the actual cost whichever is more, will be recovered for each design mix required.
 - D. The R.C.C. work shall be done with Design Mix Concrete unless specified. In the nomenclature of items, wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. For the nominal mix in RCC, CPWD specifications shall be followed. The Design Mix concrete will be designated based on the principles given in relevant IS : Code. The contractor shall design mixes for each class of concrete indicating the concrete ingredients and proportions that will result in concrete mix meeting requirements specified. In case of use of admixture and or white cement, the mix shall be designated with these ingredients as well. The admixtures shall conform to relevant IS Code. The contractor shall not be paid anything extra for admixture required for achieving desired workability.
- 22. Cover Blocks:** Contractor shall use factory made cover blocks of approved shape and strength for all RCC works to avoid displacement of bars in any direction and to ensure proper cover. Alternatively, the contractor may manufacture the cover blocks as per approved methodology by Engineering-In-Charge. The grade of concrete shall be same

grade as of Concrete in which they will be used. The concrete shall be fibre reinforced concrete with 6 mm downgraded aggregate. Shape & size shall be as decided by Engineering-In-Charge. For horizontal surfaces, fibre concrete cover blocks may be used and vertical surfaces plastic circular spacers may be used. Viz; Conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or as approved by Engineering-In-Charge equivalent.

Before taking up the work, the contractor shall prepare integrated plan, drawings for various civil and electrical services under the scope of his contract showing details of fixing various pipe lines running horizontally and vertically and obtain approval of Engineer in Charge. Integrated services drawings shall conform to local Byelaws. The work shall be carried out as per approved integrated shop drawings for plumbing, sanitary, rain water pipe and drainage work.

23. G.I. pipes, CPVC Pipes etc. shall be fixed on wall (Z clamps -A, or U clamp-B) with GI frame Minimum thickness 2.5 mm , keeping pipes at least 30-40 mm away from wall using U-bolt of required size as per dimension of pipes . Nothing extra shall be paid for this account.

Sample photos are as below:





भारत सरकार
केंद्रीय लोकनिर्माणविभाग
तकनीकीअनुप्रयोग एवंमानक एकाई
कमरा सं० 418 ए-विंग, निर्माणभवन, नईदिल्ली।
टैलीफैक्स-011-23062339 ईमेल-delsetascsq.cpwd@nic.in



E-9156762

No. CSQ/SE(TAS)/Steel/2024/ 262-*Red*

Dated: 14/08/2024

OFFICE MEMORANDUM

Subject:- Guidelines for use of TMT steel /Low Alloy Steel reinforcement Bars in CPWD worksand enlistment of the steel manufactures in respect of TMT steel /Low Alloy Steel reinforcement Bars in CPWD.

1. The Ministry of Steel, through notification dated 12.05.2016 and order dated 9.8.2016, abolished classification of steel producers as Integrated steel producers, primary steel producers, secondary steel producers, main producers, major producers or others as well as on the basis of process route of steel manufacturing in India.
2. The Ministry of Steel, vide Circular No. 4(13)/2016-SD(I) dated 14.12.2016, reiterated their Notification dated 12.05.2016. They further issued an order dated 09.08.2016, asking the users to ascertain the quality of the steel products, to be procured, as per relevant BIS standards.
3. Para 27.2 of Works Manual 2014 was modified through OM No. DG/MAN/382 dated 06.02.2019. In this OM, under the heading "Special Condition of Steel reinforcement bars", eligibility criteria and other technical parameters were set for steel manufactures. In the eligibility criteria, incorporation details of the company, various licences, certifications, in house testing facility at plant, and refining technologies used for manufacturing of steel and TMT bars (like BF-BOF route, COREX-BOF Route, DRI-EAF route) were cited. Those manufacturers, who met the aforesaid eligibility criteria, could be included in the preferred make list of Notice Inviting Tenders (NITs) of CPWD works.
4. However, CPWD Works Manual 2014 was replaced by CPWD Works Manual 2019 and came into force with effect from 07.03.2019. In CPWD Works manual 2019, para 4.10.1 deals with use of steel and cement in works and states that "Special conditions shall be incorporated by the NIT approving authority keeping in view the guidelines issued by the Directorate from time to time in this regard which are available on CPWD website".
5. Since no Criteria /guidelines were available for approval of TMT bars manufacturer after release of the CPWD works manual 2019, an Office Memorandum No. CE(CSQ /SE(TAS) /EE(TAD) /Steel/ 2019/ 497-H dated 27.12.2019 was issued. This OM specified that (i) only ISI marked TMT bars of various grades shall be procured for use in CPWD works, (ii) SDG/ADG shall approve the steel manufacturers based on eligibility criteria and other technical parameters as per OM No. DG/MAN/382 dated 06.02.2019
6. The OM 497-H dated 27.12.2019 was withdrawn and modified guidelines for use of reinforcement bars in structures was issued vide OM No. 50-H dated 17.02.2021. The use of corrosion resistant steel (CRS) reinforcement bars in structures was also mandated vide OM No. 50-H dated 17.02.2021. Further,

Red

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contd..②

clarification regarding corrosion resistant steel was issued vide OM No. 257-H dated 23.06.2022.

7. The single bench of Hon'ble High Court at Calcutta in the case of SRMB Srijan Private Limited & others V/s Union Of India & Others (W.P.A 9990 of 2020) SRMB Srijan Private Limited & others Vs. Union of India & others With (W.P.A 24267 of 2019) has quashed the modified Clause 27.2 of the CPWD Works Manual of 2014, para 4.10.1 of the CPWD Works Manual of 2019, and consequential Memorandums issued by the CPWD and directed to implement the Notification of the Ministry of Steel, Government of India dated May 12, 2016, the Order dated August 9, 2016 and the reminders of the said Ministry dated December 14, 2016 and February 7, 2017.
8. Subsequently an appeal was filed in Division Bench (DB) of Hon'ble High court at Calcutta by CPWD. In the said case, Hon'ble High court at Calcutta, passed the judgment dated 15.04.2024. The operative part of this judgement reads as *"Accordingly we find no grounds to interfere with the order passed by the Learned single bench except with regard to the direction issued in paragraph 53 of the impugned order whereby the modified clause 27.2 of the CPWD Works Manual has been quashed and instead of quashing the said modified clause 27.2 we direct the CPWD to appropriately amend their Works Manual to be in consonance with the notification issued by the Ministry of Steel, Govt. of India as done by the notifications referred to above."*
9. In compliance of the above directions of the Hon'ble High Court at Calcutta, an Expert Committee was constituted by DG CPWD vide OM No. CSQ/SE(TAS)/EE(TAD)/Steel/2024/190-H dated 10.06.2024 for deciding the criteria for the selection of steel manufacturers for CPWD works. The expert committee has conveyed their final recommendation {enclosed as annexure I(d)} vide Minutes of Meeting dated 24th July 2024 and the same has been accepted by DG, CPWD. The brief of these recommendations are as follows:

Steel Bars shall be classified as:

- a) Bar Set I, if it complies with the requirements given in the latest version of IS 1786, and additional requirement (e.g. Chemical Composition Requirement for Manganese and Copper, Tempered Martensite (TM) Ring Requirement, Marking Requirement and compliance of the provisions of ISO 9001:2015 and ISO 14001:2004) mentioned in the recommendations.

And

- (b) Bar Set II, if it complies with the requirements given in the latest version of IS 1786.

The committee has also recommended use of above mentioned Steel Bar sets considering the importance of quality in construction of public structures in different projects of CPWD, on the basis of (a) earth quake zones, (b) environment conditions (coastline and exposure condition), (c) Structure category, and (d) heights of buildings and structures.



- 2 -

Contd---3

10. Accordingly, it is decided that the reinforcement steel bars produced by plants of SAIL, RINL, TATA, JSW & JSPL which are in wider use in CPWD may be continued to be used as preferred make in the NIT in respect of Bar Set-I mentioned in para no. 9 above and Annexure-1(c). Further, it has also been decided that DG, CPWD may enlist more manufacturer plants for TMT steel/Low Alloy Steel reinforcement Bars on the basis of selection criteria recommended by the Expert Committee. These enlisted manufacturers plants for particular bar set may also be considered for stipulation as preferred make in the NIT depending upon their use.
11. The procedure for enlistment of the steel manufactures in respect of TMT steel /Low Alloy Steel reinforcement Bars in CPWD works is also enclosed herewith as Annexure-I and I (a) to I (f)

This issues with the approval of DG, CPWD.

Encl: As above


(Dinesh Kumar Ujjainia)
 Superintending Engineer (TAS)
 14/12/24

Copy to (Through CPWD Website):

The SDG (Chennai) / SDG (Chandigarh) / SDG (Kolkata) / SDG (Mumbai) for information please.



Annexure-I

PROCEDURE FOR ENLISTMENT OF THE STEEL MANUFACTURES IN RESPECT OF TMT STEEL / LOW ALLOY STEEL REINFORCEMENT BARS IN CPWD WORKS.

1. The following procedure shall be adopted for enlistment of the manufacturers, in respect of TMT steel / Low Alloy steel reinforcement bars of different diameter and grades for use in CPWD works.
 - i. All manufacturers having their manufacturing plants in India are eligible for enlistment in CPWD subject to the condition that they are producing steel bars of different grades conforming to the latest version of IS 1786.
 - ii. The Thermo Mechanically Treated (TMT) steel / Low Alloy steel reinforcement bars conforming to IS:1786 must be manufactured using iron ore, virgin or processed with necessary refining facilities. The rolling / processing facilities, from iron making to finished steel reinforcement bar, may be owned by the same company or its subsidiary company (ies). In this regard the necessary proof may be submitted along with application.
 - iii. The eligible manufacturer shall apply **online** to CPWD website portal to **SDG (Chennai, Chandigarh, Kolkata, & Mumbai)** on their letter head along with requisite details in prescribed application (**as per Annexure-I(a)**) along with documents (**as per Annexure-I (b)**). The manufacturer shall mention name and location of plants to be enlisted for supply of steel reinforcement bar and shall pay enlistment fee of Rs. 1,00,000.00 (Rs. One Lac Only) per plant. The manufacturer is required to pay total enlistment fees to CPWD through e-payment in **Account Number 244189- AE(Cash), CSQ, NirmanBhawan, New Delhias per Annexure-I (f)** and receipts of payment shall be enclosed with the application form.
 - iv. The enlistment fee, once paid, is non-refundable due to any reason. Therefore, manufacturers are advised to ensure that they fulfil the eligibility requirements and possess all necessary documents for enlistment before payment.
 - v. The online application submitted along with documents will be scrutinized by the **CE (Works & TLQA) O/oSDG (Chennai,**



— 1 —

Contd-2

Chandigarh, Kolkata, & Mumbai) and shortcoming (s) or deficiency (ies) in the submitted application, if any, will be communicated to the applicants through online portal. The applicants will be allowed to submit clarifications or information online within a period of one month from the date of intimation of shortcomings.

- vi. If the manufacturer fails to submit the required clarifications or information within one month from the date of intimation of shortcomings, the application shall be summarily rejected and no further communication shall be entertained. The enlistment fees shall be forfeited.
- vii. All the relevant clarifications and/or information received within the time period shall be considered and if found in order, such manufacturer shall be informed about the dates of plant (s) visit by the team of CPWD officers consisting of **one SE, one EE and one AE (to be nominated by respective SDG)**.
- viii. On site verification of documents, submitted at the time of application, will be done by the CPWD team, during the plant(s) visit. Further, the testing of individual bars of particular grade (s), at each plant, shall be carried out in the lab available at plant in presence of CPWD team and representative of manufacturer (**as per Annexure-I(c)**). The entire testing process shall also be video recorded.
- ix. CPWD team, at each plant, shall also collect the samples (i.e. one sample consist of three bars) of each diameter of different grades and sealed in presence of manufacturer's representative. The type testing of these samples shall be done in one of the designated lab of National Test House, IITs, NITs and NCCBM in presence of CPWD representatives. The dates of testing of samples in the designated laboratory shall be decided by the manufacturer in consultation with the lab authorities and CPWD team. The entire testing process, including opening of sealed samples, shall be video recorded.
- x. After plant visit by the CPWD team, a report along with photographs / video of the plants and results of the tests conducted during visit shall be uploaded on the portal within 5 working days.
- xi. The results of the type tests, conducted in the designated lab, shall be uploaded on the portal within 5 working days of receipt of the same.

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contd - 3

xii. After getting all the test reports, complete case along with documents and recommendation of respective SDG (**Chennai, Chandigarh, Kolkata, & Mumbai**) will be sent to CE, CSQ (Civil), CPWD, Nirman Bhawan, New Delhi.

2. A committee comprising of following officers will evaluate the case received from SDG (**Chennai, Chandigarh, Kolkata, & Mumbai**) for the enlistment of steel manufacturers' plant for reinforcement bar of different grades on the basis of criteria given in **annexure-I(d)** in CPWD Directorate, Nirman Bhawan, New Delhi.

ADG (Tech)	-	Chairman
CE (Project)	-	Member (to be nominated by ADG (Tech))
CE, CSQ (Civil)	-	Member
SE (Design)	-	Member (to be nominated by ADG (Tech))
SE (TAS)	-	Member Secretary

The committee will recommend the steel manufacturers' plant for enlistment or otherwise to DG, CPWD for his approval.

3. The approval of the competent authority shall be intimated to the respective manufacturer in respect of a particular plant for each diameter of different grades of steel under category Bar Set I / Bar Set-II
4. If, no bar diameter of specific grade of steel of the particular plant of a manufacturer is found suitable, then he will be intimated accordingly. The manufacturer may apply afresh next time when applications are re-invited for enlistment. In case of rejection of application, the decision of the CPWD shall be final and binding on the applicants.
5. **Validity of Enlistment:** The enlistment of manufacturer's plant for particular bar diameter and grade of steel shall be valid for a period of 3 (three) years from the date of issue of enlistment order. The enlistment shall be open to review by the enlisting authority i.e. Director General, CPWD at any time. In case any adverse report is received against the manufacturer, the enlistment is liable to be suspended/cancelled/or manufacturer can be black listed for future enlistment in CPWD or any other action as deemed fit (as per **Annexure-I(e)**).



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Contd .. 4

Annexure-I(a)

Application for Enlistment OF THE STEEL MANUFACTURES IN RESPECT OF
TMT STEEL / LOW ALLOY STEEL REINFORCEMENT BARS and re-enlistment
(Supporting documents annexed with the application form should be uploaded
as per Annexure-I(b))

1. (a) Name of the applicant

(b) Status of entity (Limited Liability Partnership/Ltd. Company).....

2. Address

(a) Registered Office.....

(b) Head Office (if different from Registered office).....

3 Contact Details

(a) Name of contact person and Designation.....

(b) Telephone Number.....

(c) Mobile Number

(d) Email Id.....

(e) Website URL (If any)

4 Detail of Plant (s) for which Enlistment applied:

i. (a) Name of Plant.....

(b) Location.....

ii. (a) Name of Plant.....

(b) Location.....

5. Enlistment fee(s) detail (Fees Rs. 1,00,000.00 per Plant) :

(a) Transactions Reference Number

(b) Transaction Date.....

(c) Amount.....

6. Certificates (Strike out whichever is not applicable)

- a. I/We (including all partners) certify that I/we have read the Rules for
Enlistment of steel manufacturer in CPWD as amended upto date and shall
abide by them.



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Contd..5

- b. I/We certify that I/we are not enlisted and will not get myself / ourselves registered as steel manufacturer in the Department under more than one name.
- c. I/We have neither employed nor shall we employ any person within one year of his retirement from the Government except with the prior permission of the Government.
- d. I/We will not make changes in the owner ship of the company without prior intimation to department.
- e. I/We have not declared or is in the process of being declared bankrupt, insolvent, wound up, dissolved or partitioned.
- f. I/We have not been removed/suspended/blacklisted/debarred/restrained from the business by any central /state government department/PSUs.

I/We certify that the information given above is true to the best of my/our knowledge. I/We understand that if any information is found incorrect, our enlistment is liable to be cancelled and I may be blacklisted / suspended / debarred for future enlistment in CPWD.

Place :

Signature of applicant

Date:

(Authorized Signatory)



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Contd ... 6

Annexure-I (b)**A. Documents required to be submitted with application:**

1. Documents regarding Ownership / Promoters of the manufacturing plant, its head office address, location and address of steel manufacturing facility.
2. If any subsidiary company(ies) exists, then documents regarding Ownership / Promoter ship of the subsidiary company, Subsidiary company's address and its relation with main company, location and address of manufacturing units of subsidiary company.
3. Copies of Certificate of Incorporation & Memorandum of Article of Association of Main Company.
4. Approval/ enlistment of manufacturer company by CPWD (in past), or any other Central/State Government departments/PSUs for use of steel reinforcement bars.
5. Document and Production process flow diagram / chart of steel making for production of TMT and Low alloy steel (Corrosion Resistant Steel) Reinforcement bars for Fe 415D, Fe 500D, and Fe 550D of bar sizes 8 mm to 45 mm dia.
6. Document related to Quality Assurance Plan adopted in manufacturing of steel and calibration record of measuring and testing equipments.
7. Authenticated copies of BIS certificate for billets (IS 2830 : 2012) & BIS certificate for TMT bars (IS 1786 :2008) (with up to date Amendment)
8. Copy of ISO-9001:2008 (Quality Management System), Quality Management System, ISO-14001:2004 (Environment Management System).
9. The CO2 emission per kg of steel production.
10. Whether manufacturer is blacklisted/suspended/debarred/restrained from business by any Central / State Government Department or PSU for poor quality of reinforcement steel bar (if any) supplied by the company.
11. Test results of bars as per Annexure-I(c).

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Annexure- I(c)**Testing requirement for individual reinforcement bar diameter of Particular Grade of steel:**

Tests required for Fe 415D, Fe500D, Fe550D grade of steel and Low alloy steel reinforcement bars:

A. FOR BAR SET- I

1. Tests as per IS 1786 (latest version) and specified therein

1.1 Chemical Properties

Ladle analysis of steel for above grades for maximum percentage of constituents

- i. Carbon (C), (ii) Sulphur (S) and (iii) Phosphorous (P) and (iv) Nitrogen and Carbon Equivalent

1.2 Physical Properties

- (i) 0.2 percent proof stress / yield stress, minimum, N/mm².
- (ii) Ratio of Tensile Strength (Ts) to Actual Yield Strength (or 0.2 % of yield stress (Ys)) of the test piece N/mm².
- (iii) Elongation, percent, Minimum, on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- (iv) Total elongation at maximum force, percentage, minimum on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- (v) Bend test and re-bend test.
- (vi) The mean area of ribs (in mm²) per unit length (in mm) above the core of the bar, projected on a plane normal to the axis of the bar.
- (vii) Pull-out testing in accordance with IS 2770 (Part 1)

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Contd...8

2. Additional requirement

2.1 Permissible limit for Manganese and Copper as follows:

Constituent	Permissible Limit (% of cast metal quantity)		
	Fe 415 D	Fe 500 D	Fe 550 D
Manganese (Mn)			
Maximum	1.60	1.60	1.60
Copper (Cu)			
Maximum	0.80	0.80	0.80
Minimum	0.20	0.20	0.20
Notes: The above composition shall be obtained as per latest version of IS 228 1. Manganese using Periodate Spectrophotometric Method (Part 12), and 2. Copper using Thiosulphate Iodide Method (Part 15) or Spectrophotometric (Diethyl Dithiocarbonate) Method (Part 21)			

2.2 Tempered Martensite Ring Test as per Annexure-I (d).

2.3 The process of manufacturing steel shall comply with the provisions of ISO9001: 2015 and ISO14001: 2004.

(B)FOR BAR SET-II

1. The test requirements given in para 1.1 and 1.2 above.

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Contd -- 9

Annexure-I(d)

1. CRITERIA FOR CLASSIFICATION OF BARS

The steel bars manufactured in India shall be classified as specified hereunder for the purposes of their use in works of CPWD.

1.1 Process of Classification

Steel Bars shall be classified as *Bar Set I* and *Bar Set II*. The bars shall be placed under one of these categories based on *Type Test* (the test performed to select the bars) performed as specified hereunder. These tests to be performed are those specified in the latest version of **IS 1786** published by the Bureau of Indian Standards, and the additional tests mentioned in Para 2 of this document.

The *Type Test* shall be performed at any one of the National Test Houses, IITs, NITs, and NCCBM, subject to:

- (a) The test samples being collected from the manufacturing facility by the representative engineer of CPWD,
- (b) The availability of the required test facility at the said laboratory, and
- (c) The test being witnessed by representative engineer of CPWD.

1.2 Classification of Steel Bars

The bar shall be classified as:

- (1) *Bar Set I*, if it complies with the requirements given in the latest version of **IS: 1786**, and those given in Para 2 of this document, and
- (2) *Bar Set II*, if it complies with the requirements given in the latest version of **IS 1786**.

2. ADDITIONAL REQUIREMENTS

Four additional requirements as specified hereunder.

2.1 Chemical Composition Requirement

The permissible limits of additional elements shall be as per **Table 1**.

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contd -- 10

Table 1: Permissible limits of additional elements

Constituent	Permissible Limit (% of cast metal quantity)		
	Fe 415 D	Fe 500 D	Fe 550 D
Manganese (Mn)			
Maximum	1.60	1.60	1.60
Copper (Cu)			
Maximum	0.80	0.80	0.80
Minimum	0.20	0.20	0.20
Notes: The above composition shall be obtained as per latest version of IS 228 : (1) Manganese using Periodate Spectrophotometric Method (Part 12), and (2) Copper using Thiosulphate Iodide Method (Part 15) or Spectrophotometric (Diethyl Dithiocarbonate) Method (Part 21).			

2.2 TM Ring Requirement

The following two requirements shall be met with:

- (1) Does the *Tempered Martensite(TM)* Ring satisfy the visual analysis as per **Step 1** of **Table 2**; and
- (2) The thickness of the TM Ring obtained as per **Step 2** of **Table 2** shall be between $0.07f$ and $0.15f$, where f is the *original nominal diameter* of the bar.

(a) Test Procedure

The following is the procedure:

- (1) The test setup to capture the *Cross-Sectional Phase Distribution (CSPD)* of the TMT bars shall be as shown in **Figure 1**.
- (2) Steel bars may be cut using handsaw or an abrasive cutter with continuous supply of coolant to limit the temperature of steel, and thereby avoid any transition or changes in *Tempered Martensite(TM)* and *Ferrite-Pearlite (FP)* phases (**Figure 2**). The sharp edges of cut bars should be smoothed using



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contd -- 11

silicon carbide abrasive sheets. A metal polishing machine can be used to achieve effective smoothening.

- (3) The smoothened steel specimen shall be moulded in cold setting epoxy with good surface finish. Setting time of epoxy is about 10-15 minutes.
- (4) The moulded specimen surface shall be course polished using abrasive sheets of 80, 150, 220, 320, and 600 grit sizes in sequence. Specimens shall be micro-etched using Nital (5% Nitric acid in alcohol) to capture the CSPD.

(b) Measurements

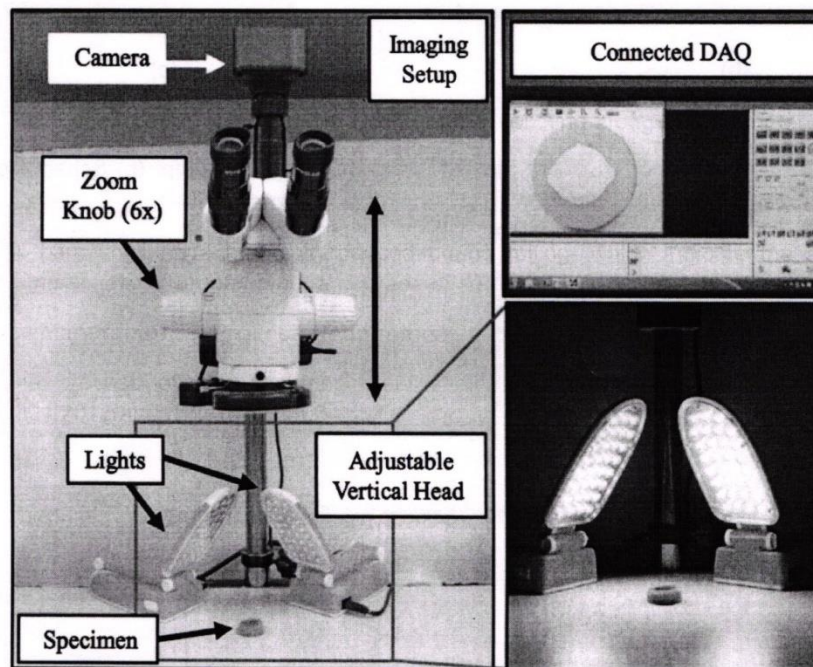
The procedure for obtaining the CSPD of the TM Ring along the perimeter shall be as per **Table 2**.

2.3 Marking Requirement

All bars shall have marks introduced during rolling, which indicate the *name of manufacturer* or *brand name*, and *grade of steel*.

2.4 Manufacturing Process Requirement

The process of manufacturing steel shall comply with the provisions of ISO 9001:2015 and ISO 14001:2004.



(a)

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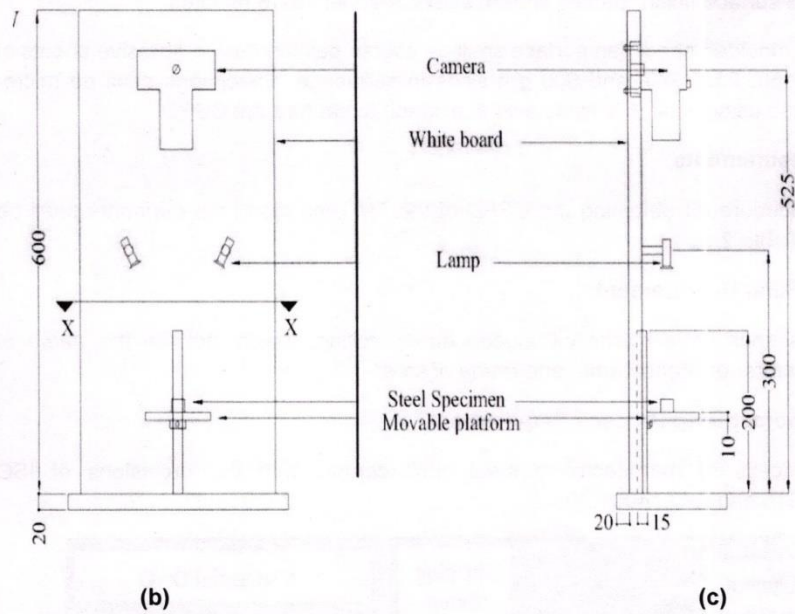


Figure 1: Test setup for CSPD of the TMT bars: (a) Imaging Setup, (b) Schematic Front View (c) Schematic Side View

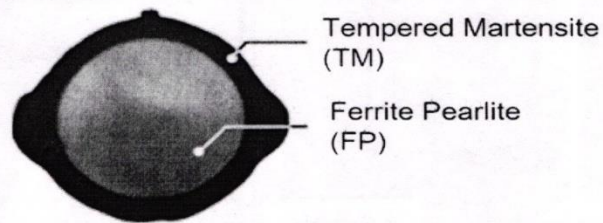


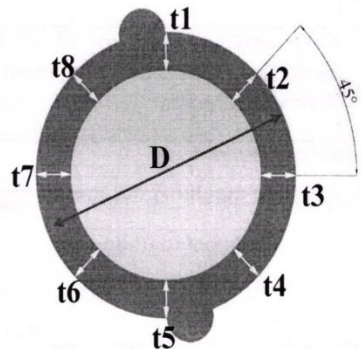
Figure 2: Cross-section of the steel bar showing the TM and FP areas

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contd-13

Table 2: Method of obtaining CSPD of TM Ring

Step 1: Visual Analysis of etched Cross-Section			
			
	A	B	C
	Acceptable	Not acceptable	Not acceptable
1.	Is a dark grey peripheral region and light grey core seen as in Case A?		Yes/No
2.	Does the dark grey peripheral region form a continuous outer ring?		Yes/No
Step 2: Dimension Analysis of TM-Ring thickness			
3.	Diameter D (mm) of the steel bar		
4.	Geometry		
		t_1	
		t_2	
		t_3	
		t_4	
		t_5	
		t_6	
		t_7	
		t_8	
		Measured t_{min} (mm)	
		Measured t_{max} (mm)	
5.	Is the measured $t_{min} \geq 0.07 f$?		Yes / No
	Is the measured $t_{max} < 0.15 f$?		Yes / No



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3. GUIDELINES FOR USE OF STEEL BARS IN DIFFERENT PROJECTS

Considering the importance of quality in construction of public structures, the basis for use of bars in different projects of CPWD shall be as given in **Table 3**.

Table 3: Use of Bar Sets I and II in CPWD Projects

S.No.	Consideration	Bar Set I	Bar Set II
1.	Earthquake Zones	All zones	Only <i>Earthquake Zone II</i>
2.	Environment Conditions		
	(a) Coastline	All conditions	Beyond 10 km from the coastline of India
	(b) Exposure Conditions	All exposure conditions as per IS 456 (latest version)	Only <i>Mild</i> and <i>Moderate</i> Exposure Conditions as per IS 456 (latest version)
3.	Structure Category	All categories	Only <i>Normal Buildings</i> as per Table 4 and standalone <i>Normal Structures</i> as per Table 5 .
4.	Heights of Buildings and Structures	All heights	Only structures up to 12 m height excluding <i>staircase headroom</i> and <i>liftmachine rooms</i>

Table 4: List of Normal Buildings

Residential or Non-Residential Buildings with occupancy less than 100 persons, *excluding*:

- (1) Educational buildings,
- (2) Buildings of strategic importance,
- (3) Buildings and structures identified by Government of India and State Governments to be critical for governance or Disaster Management,
- (4) Hospital buildings,
- (5) Buildings that house the control or operations of utilities (for example, water, power, and sewage disposal), and lifeline (for example, communication and transportation facilities) structures,
- (6) Buildings related to defense and space applications,
- (7) Buildings identified by Government of India, State Governments and UT Administrations to be of *Special Importance*, and
- (8) Any other building identified with the approval of DG, CPWD.

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contd -- 15

Table:5 List of Standalone Normal Structures

Water Tanks and Water Sumps up to 50,000 liters, and Pump Rooms of area less than 20 m ²
Septic Tanks, Sewage Treatment Plants, and Effluent Treatment Plants up to 10,000 liters/day
Bridges and Culverts of spans up to 6 m
Earth Retaining Structures up to 4 m
Compound Walls, Entry Gates, and Small Reception Rooms
Storm Water Drains
Cable Trenches
Parking Structures of single storey
Security Cabins and Sentry Post
Any other structure identified with the approval of Technical Sanctioning Authority of CPWD



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Annexure-I(e)**Grounds for Removal/ Suspension/ Blacklisting/ Debarring of manufacturer from CPWD**

1. The manufacturer may be removed/suspended/blacklisted/debarred, if any of the following is established:
 - i. If found to have given false particulars at the time of Application; or
 - ii. Has indulged in any type of forgery or falsification of records; or
 - iii. Changes in the ownership of the company without prior intimation to department.
 - iv. Declared or is in the process of being declared bankrupt, insolvent, wound up, dissolved or partitioned or
 - v. Violates the labour rules and regulations or
 - vi. Is involved in complaints of serious nature received from any source which have been proved; or
 - vii. Ceases to fulfil eligibility criteria based on which manufacturer's name was approved; or
 - viii. Is considered as not required to be in list of CPWD enlisted manufacturer for any other reason considered fit by the enlisting authority; or
 - ix. Received reports from field units of CPWD for supply of sub-standard quality of steel in more than one occasion; or
 - x. Has been removed/suspended/blacklisted/debarred/restrained from the business by any central /state government department/PSUs.

2. Whenever, any type of complaint mentioned above at serial number (i) to x), is received against a manufacturer. The manufacturer will be served with suitable show cause notice to give reply within a period of 15 days. After considering the reply/non-reply of the Show cause notice and other facts on records, further action will be taken as deemed fit. In case of Removal/ Suspension/ Blacklisting/ Debarring of the manufacturer, the minimum period will not be less than three years from the date of issue of the order. The re-application/application already under consideration for fresh enlistment of such manufacturer shall not be processed till the period of Removal/ Suspension/ Blacklisting/ Debarring is over. The manufacturer has to apply afresh for enlistment after period of Removal/ Suspension/ Blacklisting/ Debarring is over.



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Annexure-I (f)**Procedure for online payment of enlistment fee**

1. Log on to home page of NTR portal on <https://bharatkosh.gov.in>.
2. Go to "Quick Payment" link on the home page.
3. Select the Ministry/Department "030-Housing and Urban Affairs" from the drop-down menu.
4. Select the purpose as "Enlistment fee from contractor" from the drop-down menu.
5. Click NEXT and Select the DDO as" 244189-AE(CASH),CSQ, NIRMAN BHAWAN, NEW DELHI" from the drop-down menu.
6. Enter the amount of enlistment fee(s) in the amount window.
7. Under Remarks write "enlistment fee for enlistment of steel manufacturer for the plants (i)...., (ii)... , (iii)...., ".
8. After filling all the mandatory fields in "Depositor's detail", click "Next".
9. Confirm the information entered in the preview and click the "Confirm" button.
10. After confirmation, the portal will open the Payment Gateway.
11. Make payment using the Payment Gateway and download the system generated electronic receipt.





भारत सरकार
केंद्रीय लोक निर्माण विभाग
तकनीकी अनुप्रयोग एवं मानक एकाई
कमरा सं० 418 ए-विंग, निर्माण भवन, नई दिल्ली।
टेलीफ़ैक्स-011-23062339 ईमेल-delsetascsq.cpwd@nic.in



No. CSQ/SE(TAS)/Steel/2024/ 264-H

Dated: 21/08/2024

OFFICE MEMORANDUM

Sub: Advisory regarding Special Condition of use of Steel reinforcement in NITs.

As per CPWD Works Manual 2024 para 4.10.1, the NIT approving authority shall incorporate the special conditions of use of steel reinforcement on the basis of guidelines issued by the Directorate from time to time in this regard.

The Directorate has issued the "Guidelines for use of TMT steel /Low Alloy Steel reinforcement Bars in CPWD works and enlistment of the steel manufactures in respect of TMT steel/Low Alloy Steel reinforcement Bars in CPWD" vide OM No. CSQ/SE(TAS)/Steel/2024/262-H Dated: 14/08/2024. This Office Memorandum has superseded all the earlier Office Memorandums, regarding use and special/additional/particular conditions of reinforcement bars in NITs.

All the field officers are directed to incorporate the special/additional/particular conditions in NITs on the basis of guidelines issued vide Office Memorandum dated 14/08/2024.

It may be ensured that above instruction are followed strictly.

This issues with the approval of DG, CPWD.

(Dinesh Kumar Ujjainia)
Superintending Engineer (TAS)

Copy to: (Through CPWD Website)

1. Special DG (Chennai, Chandigarh, Kolkata & Mumbai) for information please.
2. Additional DG (RD, PRD, Border, Lucknow, Chandigarh, Bangalore, Patna, Mumbai, Kochi, Jammu, Hyderabad, Guwahati & Bhopal for information please.
3. All CE/SE/EE/AE i.e. NIT Approving Authorities for necessary compliance.

(Govind Hari)
Executive Engineer (TAS)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction 2023/20

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

VIDYUT BHAWAN, NEW DELHI

Dated: 27.02.2026

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

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

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

1-27/2/26
EE (C)
D.P. Jindal
EE (Contract)

27.02.2026
(सी.एड.एम.) अभि. (सी.एड.एम.)
(सी.एड.एम.) (Chander Pal, SE (C&M))

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)

D.P. Jindal
EE (Contract)

**GUARANTEE BOND TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTSAFTER
COMPLETION IN RESPECT OF WATER PROOFING WORKS**

The Agreement made this day of two thousand and between..... sonof of..... (Hereinafter called the Guarantor of the one part)and the PRESIDENT OF INDIA (hereinafter called Government of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract) dated..... and made between the GUARANTOR of the one part and the Government of the other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

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

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

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

- (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 shall be final.

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

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

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

Signed, sealed and delivered by OBLIGOR in the presence of-

- 1.
- 2.

Signed for and on behalf of THE PRESIDENT OF INDIA by in the presence of

GUARANTEE BONDS/AFFIDAVIT FOR ALUMINIUM WORK /UPVC WINDOWS

GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF ALUMINIUM WORKS / UPVC WINDOWS

The agreement made this _____ day of _____ two thousand and _____
between M/s _____ S/o _____ (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. (Herein after 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, under look to render the work in the said contract recited
structurally stable workmanship 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 guarantee 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 the expiry of maintenance period prescribed in the contract for the minimum life of 5 (Five) 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 the 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 there under 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 the
parties.

IN WITNESS WHEREOF those 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 presence of :.

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

GUARANTEE 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 between M/s _____ S/o _____
(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 the work executed by him will remain structurally stable after the expiry of maintenance period prescribed in the contract for the minimum life of **5 Years (Five 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 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.

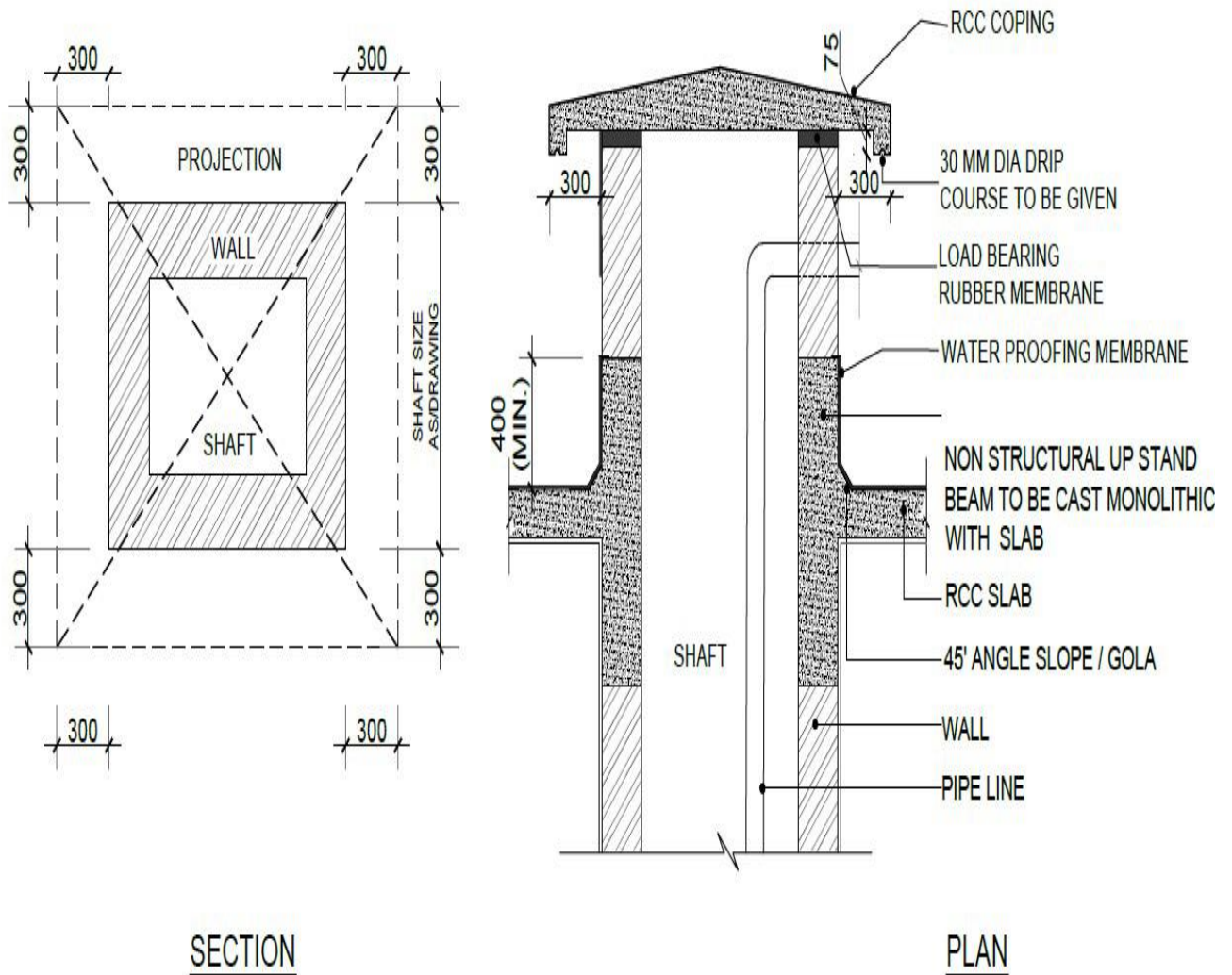
Signed, sealed and delivered by OBLIGATOR in the presence of:

1. _____ 2. _____

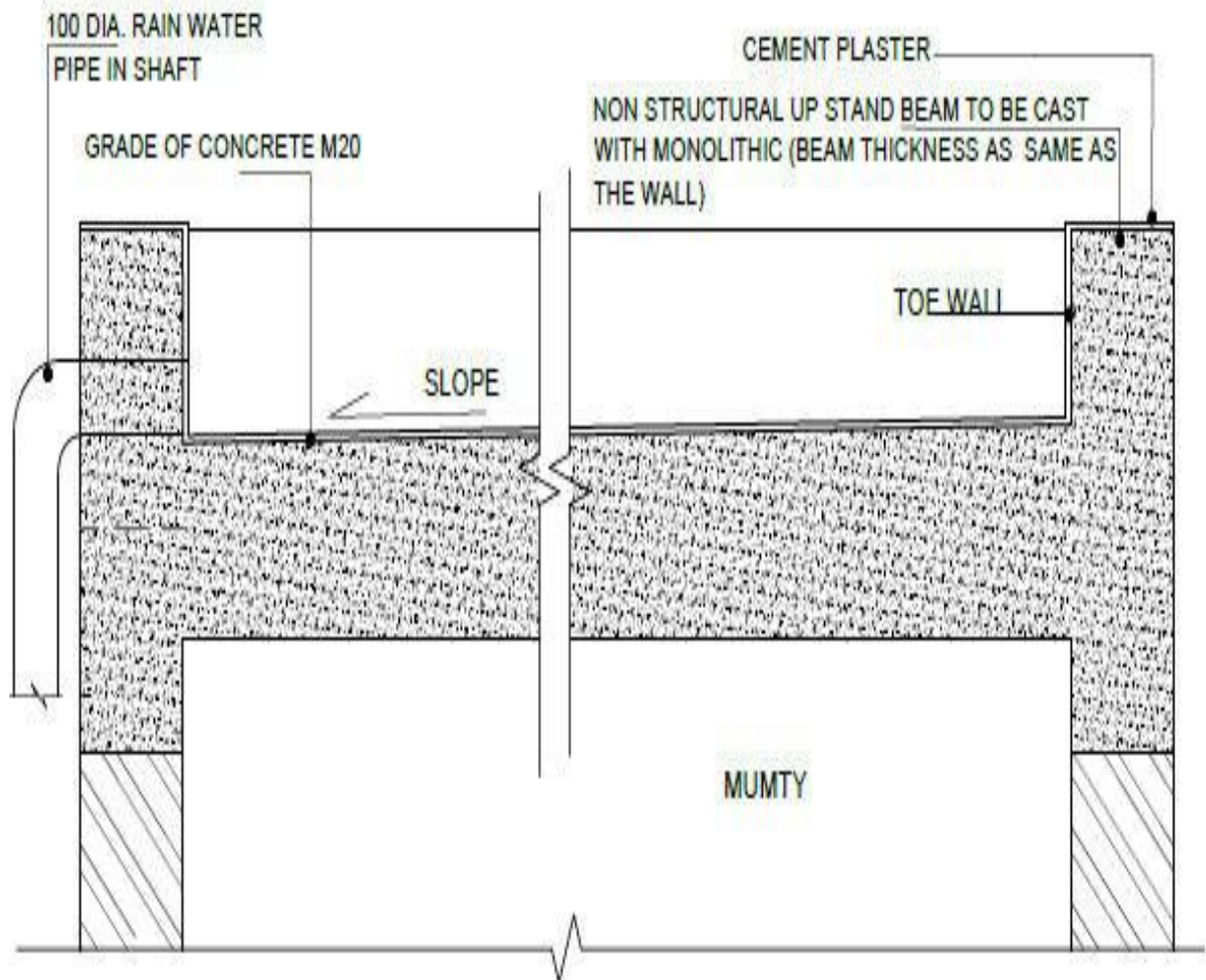
SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY ____ in the presence of :-

1. _____

2. _____

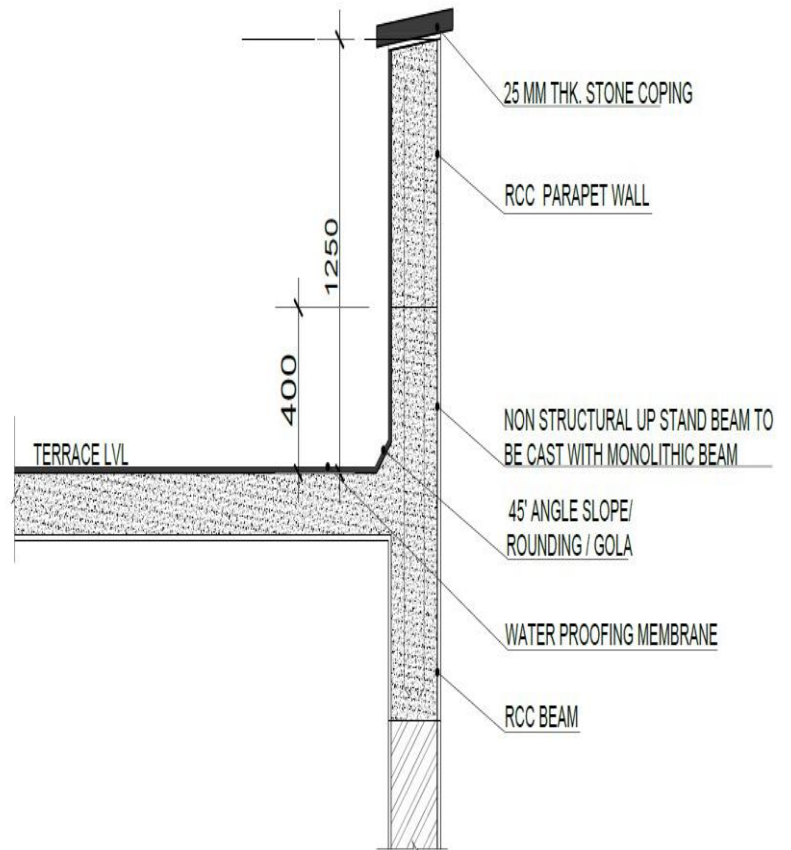
SHAFT / DUCT

MUMTY ROOF SLAB WITH TOE WALL

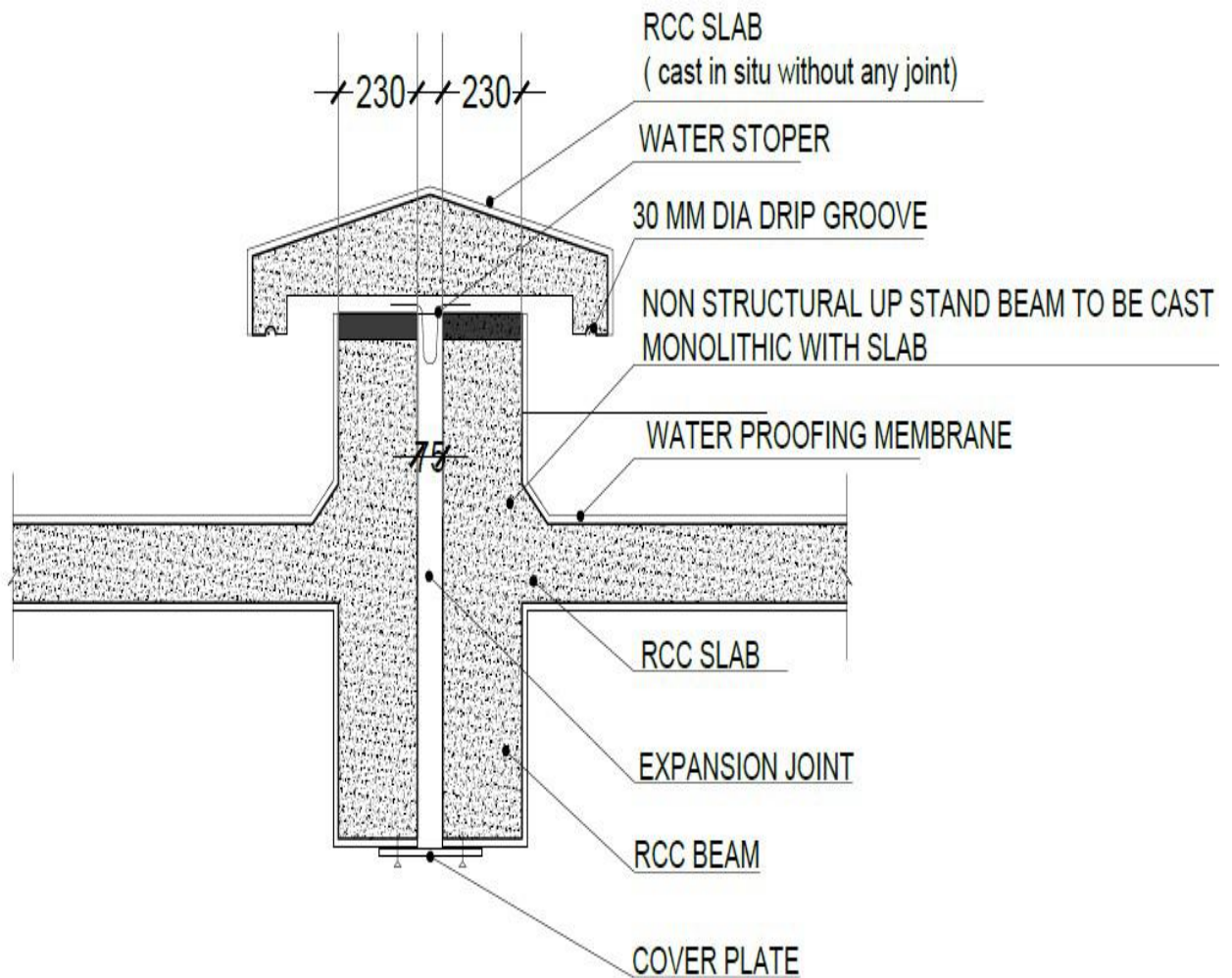


Typical RCC Parapet Details

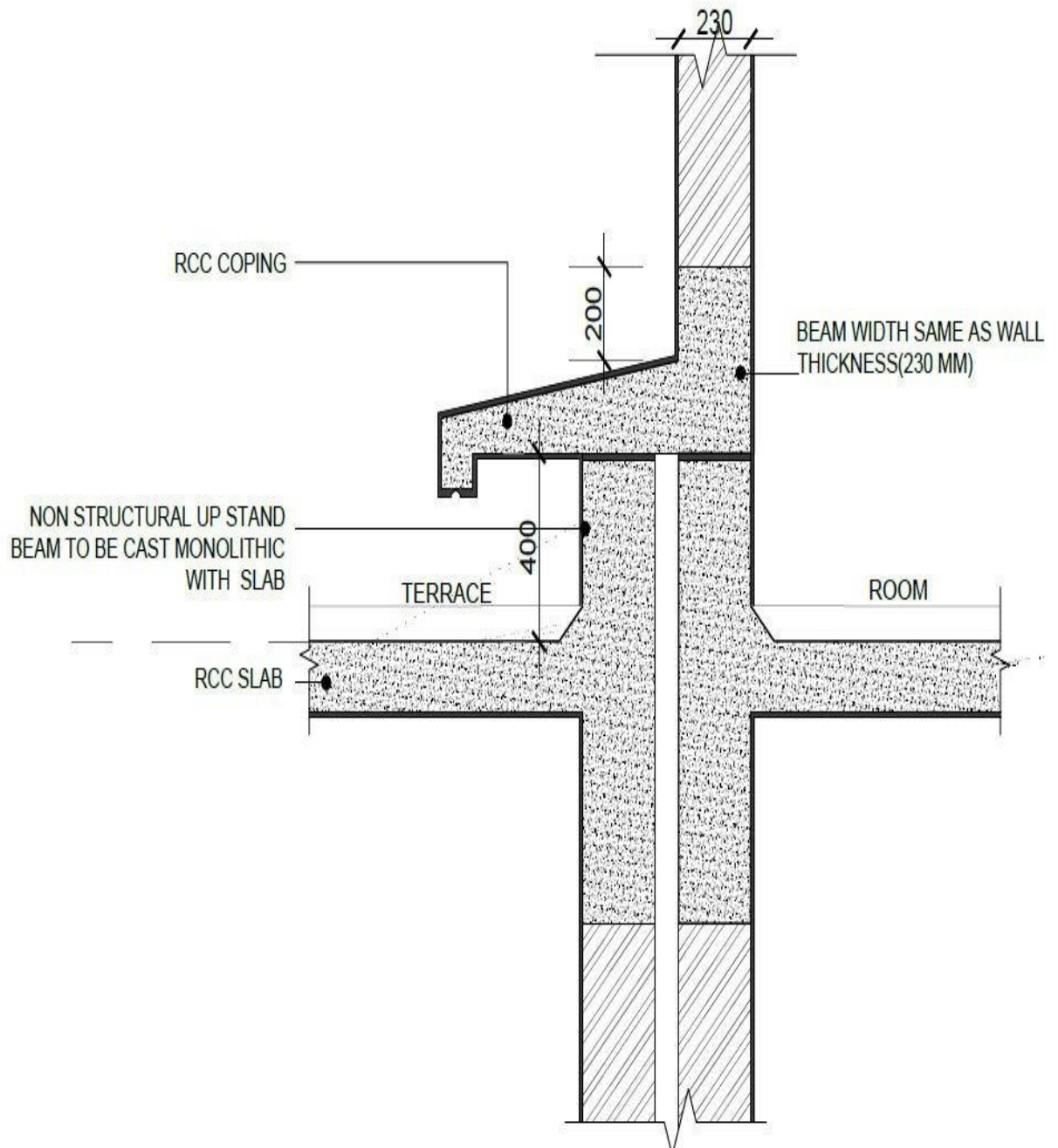
- The entire parapet (including RCC wall) wall to have inverted beams
- Depth of inverted beam be not less than 400 mm depth
- The parapet wall top may have coping with stone with inward slope. Coping stone to be secured properly with mechanical fasteners / stone tile adhesive



TYPICAL DETAILS OF EXPANSION JOINT (AT TERRACE LEVEL)



Details of Expansion Joints at the interface of lower terrace.



Cover of Khurra (Cover shall be made of SS316 instead of MS shown in the Drawing)



LIST OF MATERIALS OF PREFERRED MAKE [CIVIL WORK]

The materials of first/standard quality from the following preferred makes are to be used. In case it is established that the brands specified below are not available in the market, contractor shall submit alternative proposal to Engineer-in-Charge for the approval of NIT approving authority.

LIST OF ACCEPTABLE MAKES OF CIVIL WORK		
Sl No.	Materials	Brand / Manufacturer Name
	CEMENT	
1	(i) Ordinary Portland Cement – 43 Grade	ACC, Ambuja Cement, Topcem, Cement, Amrit Cement, Star Cement, Taj Cement, Ultratech, Bangur, Dalmia, Cement, NUVOCO
	(ii) Portland Pozzolona Cement	
	(iii) White Cement	
2	RMC plant	Ultratech, Prism Johnson, ACC, NUVOCO, Godrej.
3	Admixtures, Plasticizer, Super Plasticizer,	Fosroc, CICO, Penetron, Sika, STP Ltd., BASF, ROFF.
	STEEL	
4	Reinforcement Steel	SAIL, RINL, TATA, JSW, JSPL
5	Structural Steel	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd. (RINL) and JSW Steel Ltd (Neo Steel), Jindal Steel & Power Ltd (Panther), APL Apollo.
6	Steel door frames as per design	JSW, Tata, APL Apollo.
8	Stainless Steel Railing, Accessories etc.	TATA, JINDAL, Dorma, Hardwyn.
	WATERPROOFING	
9	Water Proofing Compounds	Fosroc, Pidilite Industries, Penetron, Sika, ROFF.
10	Curing Compounds	Fosroc, Pidilite Industries, BASF, MYK.
11	Integral Water Proofing compound with cement (For Plaster & Mortar)	Fosroc, Dr. Fixit, Sika, ROFF.
12	Water proofing for roof/bathroom/toilet/ balcony, tanks & other wet areas	Fosroc, Dr. Fixit, Sika, ROFF.
13	Waterproofing HDPE Membrane for raft and retaining wall	Pidilite, Fosroc, Sika, BASF, MYK Arment, ROFF.
14	Waterproofing for self-adhesive membrane (retaining wall)	Pidilite, Fosroc, Sika, BASF, MYK Arment, ROFF.
15	Waterproofing of roof and podiums with PU/Polyisoprene	Pidilite, Fosroc, Sika, BASF, MYK Arment, ROFF.
16	Food Grade epoxy for tanks	Pidilite, Fosroc, Sika, ROFF.
17	Coal Tar Epoxy	Pidilite, Fosroc, Sika, ROFF.
18	EPDM & Silicon Gasket	Amee Rubber, Osaka, Eltech, Avigiri.
19	Modular expansion joint	Herculus, Sanfield India Ltd. Vexcolt, VSIL, DECG International.
	TILES / FLOORING (All tiles shall be manufactured in mother plant of the company)	
20	Vitrified Tiles (Antiskid / Matt / Glazed)	Kajaria, Somany, Johnson, RAK, Varmora, Orientbell.
21	Ceramic Tiles	Kajaria, Somany, Johnson, RAK, Varmora, Orientbell.
22	Mosaic tiles/Chequered Tiles	Ultra Tiles, Kajaria, Johnson, Unistone, NITCO.
23	Heat Resistant Tiles	Kajaria, Somany, Johnson, RAK.

24	Grouts, Tile Adhesive	Roff, Pidilite, Ferrous crete, JK Cement, Ardex endura.
	WOOD WORK	
25	Ply Board	Action TESA, Greenlam, Gattani, Century, Kitply, Archidply, Merino.
26	WPC (Wood Polymer Composite)	Rajshri, Greenply, Gattani, Falconggreen, Century, Alstone
27	Laminated Particle Board/Laminates	Action TESA, Century, Merino, Archidply, Greenply, Greenlam.
28	Plywood/Veneer	Century, Merino, Gattani, Archidply, Greenply, Kitply.
29	Flush door shutters	Merino, Duro, Century, Gattani, Durian, Archidply, Greenply, Kitply.
30	uPVC doors & Windows	Duroplast, Rajshri, Astrix, PlastOne, Venster/Okotech Fenesta, Rehau, Kommerling, Encraft.
31	uPVC doors and window hardware	Oben, Kinlong, Cotswold, GU, Rotto.
32	Extruded Polystrene Insulation Board/Sheet	Dowcorning, Supreme, Texas, Analco, Aerolam.
33	Glass Wool	Dow Corning, U.P. Twiga, Isover.
34	RIGID cellular GEOFOAM	Modi Foam, Vishalfoam, Foamex.
35	FRP Door	Jaina, Fiberways, Rajshri.
36	Laminate / HPL	Century, Greenlam, Gattani, Marino.
37	ACP (Aluminium Composite Panel, AHP (Aluminium Honeywell Panel), ZCP (Zinc Composite Panel)	Alstrong, Alstone, Reynobond, Virgo, Aludecor, Eurobond, Viva ACP.
	ROOFING	
38	Polycarbonate sheet	GE Plastic, LEXAN, DPI Daylighting, Gallina
39	Profile Sheet	Dynarroof, Kamdhenu Color Max, Mega Roof Solutions, Power Roof, Smart Roof, Shiv Shakti Fibre Udyog.
40	Profile steel sheet (Precoated)	Ezydeck of TATA, Essar Steel, SAIL, Tata Bluescope
	FIRE DOOR	
41	Fire Rated Metal Doors	Signum Fire Protection, Amvor, Navair, Pacific Fire Control, Shakti Horman, , Sukriti, Bhawani.
42	Fire Rated Glass	Saint Gobain, Modiguard, Asahi, Scott Pyroguard.
43	Fire Door Hardware	Signum Fire Protection, Amvor, Navair, Pacific Fire Control, Shakti Horman, Sukriti, Bhawani , Dormakaba, GEZE, Haffelle
	FALSE CEILING	
44	Metal False Ceiling	Hunter Douglas, Armstrong, Bollard, Knauf, Saint Gobain.
45	Gypsum Board False Ceiling	Saint Gobain (Gyproc), USG Knauf, Armstrong, India Gypsum.
46	Calcium Silicate False Ceiling	Aerolite, Everest, Armstrong (mylar), RAMCO (Hilux)
47	GRG False Ceiling	Diamond, Knauf, Armstrong, Gypsonic, Saint Gobain (Gyproc).
48	Mineral Fiber False Ceiling	Aerolite, Everest, Armstrong, Bollard, Saint Gobain (Gyproc).
49	Baffle ceiling system	Armstrong, Saint Gobain, Bollard, Hunter Douglas
	ALUMINIUM	
50	Aluminium Section	Hindalco, Jindal, Bhagwati Sai, HALCO, Encraft
51	Anodised Aluminium Hardware (Heavy Duty)	Kinlong, Classic, Ebco, Ozone, Jindal, Hettich.

52	Clear/Float/Frosted/Reflective/ Coated Glass / Toughened / Lacquered glass	Saint Gobain, Modiguard, Guardian, AIS.
	DOOR & WINDOW FITTINGS	
53	Floor Spring & Door Closure	Godrej, Dorma, Hafele, Geze, Kich, Ozone, Hardwyn, Dorset.
54	S.S. Door & Window Fittings, Door Handle (Brass, Zinc & SS) Locking System (Mortice lock, Night latches, Cylindrical lock, Euro profile cylinders), Door Hardware (Door closure, Floor spring, Tower bolt & Hinges), Modular Kitchen cupboard,	Dorma, Hafele, Hettich, Ozone, Godrej, Kich, Dorset, IPSA.
55	Spider Fittings	Dorma, Godrej, Hettich, Ozone
56	Aluminum Door & Window Fittings/ Hardware	Jindal, Dorma, Ebco.
57	Dash/Anchoring Fasteners	HILTI, Fischer, Bosch, Wurth.
	FINISHING WORK	
58	Cement Based Wall Putty	Birla wall care, JK White, Sakarni, Asian paint.
59	Oil Bound Washable Distemper/Dry Distemper	Asian Paints (Professional Acrylic Distemper), Nerolac : Beauty Acrylic Distemper Berger : Bison Acrylic Distemper Dulux ICI : Maxilite
60	1st Quality Acrylic Distemper (washable / Ready Mix / Low VOC)	Asian Paints (Tractor Aqua Lock Paint) Berger : Commando, Dulux : Superclean, Nerolac: Beauty,
61	Premium Acrylic Emulsion Paints (Interior)	Asian Paints : (Royale Luxury Emulsion, Apcolite All Protek Nerolac : Impression Berger : Silk Dulux : Velvet touch
62	Textured Exterior Paint	Asianpaints, Nerolac, Berger Paints
63	Premium Acrylic Smooth Exterior Paint with silicon additive	Asian Paints : (Apex Ultima) Nerolac : XL Total Berger : Weather Coat all guard Dulux : Weather Shield max
64	Synthetic Enamel Paint	Asian (Apcolite Premium gloss enamel), Nerolac : Synthetic Hi gloss Berger :Luxol Hi gloss Dulux : Gloss Synthetic enamel
65	Cement Primer	Nerolac, Berger, BP White (Berger), Decoprime WT (Asian), White Primer, Dulux.
66	Wood Primer	Asian Paints, Berger,Dulux, Nerolac.
67	Epoxy Paint	Asian, Dulux, Wintech, Nova.
68	Fire Paint	Asian Paint, Dulux. Promat, Jotun.
69	Gypsum Plaster	Ferrous Crete, Gyproc, Ultratech.
70	External plaster (Polymer modified white cement based matt finish putty)	Birla white level plast, J.K. Coarse Putty.
71	Floor hardener	Ironite, Ferrok, Hardonate.

72	Silicon based water repellent / Weather sealant	G.E. Plastics, Dow Corning, (Wacker), BASF, Pidilite Dr. Fixit, ROFF.
73	Poly-Sulphide Sealant	Fosroc, Pidilite, Berger.
74	Melamine Polish	Asian Paints Melamine Gold, Wudfin of Pidilite, Timbertone of ICI Dulux, Sirca.
75	Textured Paint	Asian Paint, Berger, Ultratech.
	PLUMBING WORKS	
76	G.I./M.S. Pipe	Tata, Jindal (Hisar), Nezone.
77	G.I. Fittings	Unik, Zoloto, Jindal (Hisar).
78	HDPE Pipes	Oriplast, Supreme, Dulet, Prince.
79	DI Pipes	Electosteel, Jindal, Tata Ductura, Kesoram, Kapliash.
80	DI Fittings	Electosteel, Jindal, Tata Ductura, Kesoram, Kapliash.
81	UPVC pipe and fittings	Astral, Ashirwad, Fusion, Prince, Supreme.
82	CPVC pipe & Fitting	Astral, Ashirwad, Fusion, Prince, Supreme.
83	Centrifugally Cast (spun) Iron / Hubless pipes & fittings	NECO, Electosteel, Nezone, Bic, Kapliash.
84	C.I. Manhole covers, frames & GI gratings	NECO, SKF, BIC, RIF.
	SFRC Manhole covers & gratings	KK, JAIN, PARGATI.
86	CP Brass fittings	Grohe, Kohler, Roca, Jaquar (Florentine / Pressmatic), Toto.
87	Sanitary ware, Fittings & accessories	Hindware, Jaquar, Parryware (Eternal collection), Kohler, Roca.
88	Mirror Glass	Atul, Modi Guard, Golden Fish, Saint-Gobain.
89	Modular toilet Cubical	Merino, Greenlam, Dormakaba.
90	Glass Shower enclosure	Jaquar, Ozone, Dorma .
91	PVC water storage tank	Sintex, Supreme, Polycon.
92	PTMT bath accessories	Prayag, Vectus, Polytuf.
93	Valves	KBS, Zoloto, Sant.
94	Stainless Steel Sink	Neelkanth, Jindal, Cera, Nirali.
	MISCELLANEOUS	
95	Metal Louvers	Alstone, Bollard, Hunter Douglas.
96	AAC Block Adhesive	Ultratech, Ardex Endura, Ferrous Crete,
97	AAC Block	Superlite, Austin, Taj AAC Block, Brikolite, Power Lite, Green AAC Block, Ultratech.
98	Fiber Cement Board	Bison (NCL), Everest, Lafarge.
99	Paver Blocks	Mawroh concrete & pavers, Hero pavers, Maheshwari Industries.
100	Modular kitchen	Godrej interio/ SLEEK / IKEA / Brown crust, Durian Neelkanth.
101	GRG Jali, Dome, Cornice	Nav Nirman, Samudyam, Eco Vision Industries.

Note :

1. When two or more alternative brands have been mentioned, the brand to be finally used shall be as decided by the Engineer-In-Charge. Nothing extra on this account is payable.
2. Article / Material / Brand which are not mentioned in the above list may be approved by the Chief Engineer on the request of Contractor / Agency provided that the Material / Article / Brand proposed by the contractor should have equivalent or better specifications and rates which are already mentioned in the list.
3. All other items shall be of ISI marked / as per approved sample kept at site of work.
4. The waterproofing / Paint work shall be executed through authorized applicator of the manufacturer only.

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

SCHEDULE OF WORK (CIVIL)

Name of work: "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

Item No.	Description of Item	Quantity	Unit	Rate	Amount
1	CONCRETE WORK				
1.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :	-	-	-	-
1.1.1	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	3.03	Cum	7878.50	23872.00
1.2	1:5:10 (1 cement : 5 coarse sand (zone-III) : 10 graded stone aggregate 40 mm nominal size).	75.15	Cum	6518.60	489873.00
	Sub-Total				513745.00
2	CLADDING WORK				
2.1	Providing and fixing 18mm thick gang saw cut mirror polished (premoulded and prepolished) machine cut for kitchen platforms, vanity counters ,window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing moulding and polishing to edge to give high gloss finish etc. complete at all levels				
2.1.1	Granite of any colour and shade				
2.1.1.1	Area of slab upto 0.50 sqm.	590.00	Sqm	5413.50	3193965.00
2.1.1.2	Area of slab over 0.50 sqm.	195.00	Sqm	5136.30	1001579.00
2.2	Extra for providing opening of required size & shape for wash basin / kitchen sink in kitchen platform, vanity counters and similar location in marble / Granite / stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	75.00	Each	978.70	73403.00
2.3	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer - in - Charge , in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	2283.00	Sqm	1267.95	2894730.00
	Sub-Total				7163677.00
3	WOOD AND P.V.C. WORK				

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

3.1	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete				
3.1.1	Fixed to openings /wooden frames with rawl plugs screws etc	8664.00	Kg	238.35	2065064.00
3.2	Providing and fixing IS : 12817 marked stainless steel butt hinges (heavy weight) with stainless steel screws etc. complete :				
3.2.1	100x60x2.50 mm	3140.00	Each	106.35	333939.00
3.3	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
3.3.1	150x10 mm	300.00	Each	82.55	24765.00
3.4	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.				
3.4.1	Twin rubber stopper	415.00	Each	72.35	30025.00
3.5	Providing and fixing factory made uPVC glazed/wire mesh windows/doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD Specification, uPVC extruded glazing beads, interlocks and Inline sash adaptor (where ever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge. Wire mesh / Glazing of plain/ toughened/				

	laminated/ double glass unit with / without high performance coatings as per design requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately.				
	Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for : (i) Sites with basic wind speed > 45 m/sec as per IS 875 – Part 3 (ii) Sites with structure height more than 20m for all wind speeds				
3.5.1	Three track three panels sliding window with two glazed & one wire mesh panels with Aluminium channel for roller track, wool pile, nylon rollers with SS 304 body.				
3.5.1.1	Using R3 series with frame (98mm & above) x (40mm & above) & both glazed and fly screen sash (30mm & above) x (55mm & above) with zinc alloy (zamak) powder coated handle on every glazed panel along with multi-point locking system. (Height upto 1.8m).	437.00	sqm	10874.20	4752025.00
3.6	Casement window double panels with fixed mullion with S.S. 304 friction hinges as per size and weight of sash, multi-point locking system, zinc alloy (zamak) powder coated handles.				
3.6.1	Using R3 series with frame (55mm & above) x (45mm & above) & sash (55mm & above) x (65mm & above) & mullion (55mm & above) x (65mm & above). (Height upto 1.8 metre).	141.00	sqm	12472.95	1758686.00
3.7	Providing and fixing cupboard shutter with 19mm thick one side decorative and other side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand including 2mm thick PVC edge banding tape with hot glue by edge bending mach	226.00	Each	2829.25	639411.00
3.8	Providing and fixing 19mm thick both side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand boxes,shelves,racks,almirah,cupboard and drawer etc. including necessary nails,screws etc. complete as per direction of En	666.00	Sqm	2593.15	1727038.00
3.9	Providing and fixing stainless steel fancy handle of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.				
3.9.1	200 mm	2130.00	Each	186.65	397565.00
3.10	Providing and fixing stainless steel soft closing spring hinges at 0 degree hinges (hydraulic type) of approved make/brand to cupboard shutters with full threaded steel screws including making necessary recess in board and finished etc. complete as per direction of Engineering-in-charge	2320.00	Each	272.00	631040.00
	Sub-Total				12359558.00
4	STEEL WORKS				

4.1	steel work welded in built up sections/ framed work,including cutting,hoisting, fixing in position and applying a priming coat of approved steelprimer using structural steel etc. as required.				
4.1.1	in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	834.00	kg	172.60	143948.00
	Sub-Total				143948.00
5	FLOORING				
5.1	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), including grouting the joints with white cement and matching pigments etc., complete.	355.00	Sqm	1330.00	472150.00
5.2	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including grouting the joint with white cement & matching pigments etc. complete.				
5.2.1	Size of Tile 600x600 mm	572.00	Sqm	1623.05	928385.00
5.3	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
5.3	Double charge vitrified tile polished finish of size				
5.3.1	Size of Tile 600x600 mm	3161.00	Sqm	1453.65	4594988.00
5.4	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles and jointing with grey cement slurry @ 3.3 kg/ sqm.	3516.00	Sqm	-850.10	-2988952.00
5.5	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	3516.00	Sqm	753.25	2648427.00
	Sub-Total				5654998.00
6	FINISHING				
6.1	12 mm cement plaster of mix :				

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6.1.1	1:4 (1 cement: 4 coarse sand)	4029.00	Sqm	357.35	1439763.00
6.2	Finishing walls with Acrylic Smooth exterior paint of required shade :				
6.2.1	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90litre/10 sqm)	5671.00	sqm	171.10	970308.00
6.3	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
6.3.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	1012.00	Sqm	226.25	228965.00
6.4	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	9721.00	Sqm	156.05	1516962.00
6.5	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
6.5.1	Two coats	12885.00	Sqm	137.45	1771043.00
6.6	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.				
6.6.1	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	12885.00	Sqm	73.95	952846.00
6.7	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	18556.00	Sqm	25.15	466683.00
	Sub-Total				7346570.00
7	REPAIRS TO BUILDING				
7.1	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.				
7.1.1	With cement mortar 1:4 (1 cement : 4 fine sand)	900.00	Sqm	547.40	492660.00
	Sub-Total				492660.00
8	DISMANTLING AND DEMOLISHING				
8.1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer -in - charge.				
8.1.1	Nominal concrete 1:3:6 or richer mix (including equivalent design mix)	5.00	cum	2434.25	12171.00

8.2	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead				
8.2.1	Of area 3 sq. metres and below	1286.00	Each	367.20	472219.00
8.3	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
8.3.1	For thickness of tiles 10 mm to 25 mm	3164.00	Sqm	73.40	232238.00
8.4	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	139.00	Sqm	266.45	37037.00
8.5	Dismantling of flushing cistern of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	75.00	each	112.05	8404.00
8.6	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	571.60	Sqm	54.65	31238.00
8.7	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.	12.00	Sqm	2818.90	33827.00
8.8	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	60.00	cum	263.95	15837.00
	Sub-Total				842971.00
9	ROAD WORK				
9.1	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.				
9.1.1	60 mm thick C.C. paver block of M-35 grade with approved colour design and pattern.	964.00	sqm	1045.65	1008007.00

9.2	Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100 mm c/c on both ways, neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick, 100 mm wide MS sheet duly painted over priming coat, reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc including cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge.	100.00	sqm	3081.95	308195.00
	Sub-Total				1316202.00
10	SANITARY INSTALLATIONS				
10.1	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
10.1.1	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	70.00	Each	2226.35	155845.00
10.2	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.	70.00	Each	1683.35	117835.00
10.3	Providing and fixing white vitreous china water closet squatting pan (Indian type) :				
10.3.1	Orissa pattern W.C. pan of size 580x440 mm	40.00	Each	3169.05	126762.00
10.4	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :				
10.4.1	Kitchen sink with drain board				
10.4.1.1	510x1040 mm bowl depth 250 mm	75.00	Each	6945.60	520920.00
10.5	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
10.5.1	Flexible pipe				
10.5.1.1	32 mm dia	150.00	Each	119.55	17933.00
10.6	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	75.00	Each	1607.95	120596.00
10.7	Providing and fixing soil, waste and vent pipes :				
10.7.1	100 mm dia				
10.7.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	124.50	Each	1169.30	145578.00

10.8	Providing and filling the joints with spun yarn, cement slurry and cement mortar 1:2 (1 cement : 2 fine sand) in S.C.I./ C.I. Pipes :				
10.8.1	100 mm dia pipe	150.00	Each	198.15	29723.00
10.9	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to	40.00	Each	14999.15	599966.00
	Sub-Total				1835158.00
11	WATER SUPPLY				
11.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
11.1.1	20 mm nominal outer dia Pipes	1376.00	Metre	537.60	739738.00
11.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.				
11.2.1	External work				
11.2.1.1	32 mm nominal dia Pipes	273.00	Metre	438.60	119738.00
11.3	Providing and fixing unplasticised P.V.C. connection pipe with PTMT Nuts, collar and bush of approved quality and colour.				
11.3.1	15 mm nominal bore with 45 cm length	305.00	Each	121.90	37180.00
	Sub-Total				896656.00
12	ALUMINIUM WORK				
12.1	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer - in - charge. (Cost of aluminium snap beading shall be paid in basic item.)				
12.1.1	With float glass panes of 5.0 mm thickness	462.00	Sqm	1505.25	695426.00
	Sub-Total				695426.00
13	WATER PROOFING				

13.1	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. (The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.)				
13.1.1	For vertical surface two coats @ 0.70 kg per sqm per coat	189.00	Sqm	472.90	89378.00
13.1.2	For horizontal surface one coat @1.10 kg per sqm.	191.00	Sqm	362.80	69295.00
	Sub-Total				158673.00
14	NEW TECHNOLOGIES AND MATERIALS				
14.1	chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge (Note:- The item shall be executed for all floor height & nothing extra charge shall be payable).				
14.1.1	75 mm average thickness	665.00	sqm	378.00	251370.00
14.2	cleaning of reinforcement from rust from the reinforcing bars to give it a total rust free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge (Note:- The item shall be executed for all floor height & nothing extra charge shall be payable).				
14.2.1	bars upto 12 mm diameter	4448.00	mtr	8.25	36696.00
14.3	Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. (Note:- The item shall be executed for all floor height & nothing extra charge shall be payable).				

	Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm2).				
14.3.1	12 mm average thickness.	510.00	sqm	388.65	198212.00
14.4	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clere story windows & other Frames/ Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm ² , modulus of elasticity 900 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
14.4.1	Frame size 45 x 70 mm	1177.00	mtr	705.85	830785.00
14.4.2	Frame size 45 x 85 mm	1734.00	mtr	926.35	1606291.00
14.5	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed				

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	counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
14.5.1	35 mm thick	612.00	Sqm	5015.35	3069394.00
14.6	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
14.6.1	30 mm thick	216.00	Sqm	4346.70	938887.00
14.7	providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid board one side white color and other side of board laminated with PVC foil of minimum 14 micron thickness of approved design pasted with hot melt adhesive for cup boards, work stations and bathroom/kitchen cabinet etc. of required sizes comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel piano hinges/soft close clip on concealed hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel piano hinges/soft close clip on concealed hinges and necessary S.S screws shall be paid separately)				
14.7.1	25 mm thick	149.00	sqm	3889.15	579483.00

14.8	Providing and fixing factory made 18 mm thick single extruded WPC (Wood Polymer Composite) solid plain white colour board Jali, CNC (Computer numeric control) routed of approved design by Engineer-in -charge which are machine cut for duct/shaft covering, partitions and facades comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives(maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with properties of being termite/borer proof, water/moisture proof and fire retardant and fixing on M.S (mild steel) framemade of 25 x 25 x 1.5 mm square hollow box section including applying a priming coat of approved steel primer, placed at grid made at 1.0 x 1.0 m or as per requirement at site with necessary stainless steel fasteners and SS screws etc., all complete as per direction of Engineer-In- Charge. (Note: M.S (mild steel) framework with priming coat and necessary SS asteners and SS screws shall be paid separately.	165.00	Sqm	3437.15	567130.00
Total =	Sub-Total				8078248.00

Total 47498490.00

Modified Estimated Cost after using Correction factor of 0.973 on DSR'2023 issued vide e file No : 9158977 dated 08-08-2024

46216031.00

Add Cost index of Guwahati, cost index is 119% on PAR" 25 (as Base as 100) issued by O/o ADG, Guwahati vide letter no.17(6)/ADG(G)/Works/2026/897(H) dated 11-08-2026, PAR"23/DSR"23, Modified cost index on DSR"2023[119x(103/100)]=122.57%

10430958.00

Total

(A) 56646989.00

15	NON-SCHEDULE ITEMS				
15.1	Providing and fixing jaguar make Wall Mixure Non telephonic wall mixer (CAT NO : FUP-CHR-29219PM) as per direction by Engineer in charge. (a) 15 mm nominal dia	75.00	No.	5904.70	442853.00
15.2	Providing and fixing jaguar make overhead Shower dia 120mm round shape single flow Shape Single Flow (ABS Body Chrome Plated with Gray Face Plate) with Rubit Cleaning System, CAT NO. OHS-1789) : as per direction by Engineer in charge.	75.00	No.	2305.40	172905.00

15.3	Providing and fixing jaguar make Shower Arm Casted 190mm Long Flat Shape for Wall Mounted Showers with Flange , CAT NO. SHA-483) : as per direction by Engineer in charge.	75.00	No.	1109.90	83243.00
15.4	Providing and fixing long bib cock with wall flange of jaguar (cat no. KUP-35037PM) .as per direction by Engineer in charge.	5.00	No.	2219.40	11097.00
15.5	Providing and fixing Angular Stop Cock with Wall Flange for basin mixer and geyser points of jaguar (cat no. KUP-35053PM) : as per direction by Engineer in charge.	305.00	No.	1666.30	508222.00
15.6	Providing and fixing jaguar make table top wash basin (CAT NO : JDS-WHT-25907N SHAPE RECTANGULAR , SIZE 530X420X140 MM) and Pillar Cock with Extension Body jaguar make(Cat no: FLP-5021PM) including painting of fittings and brackets , cutting and making good the wall/granite slab Wherever Required, as per direction of Engineer-in-charge.	5.00	Sqm	8110.60	40553.00
15.7	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with aluminium nuts & bolts complete. Stainless steel (grade 304) wire gauze of 0.50 mm dia wire and 1.4 mm aperture on both sides	275.00	Sqm	882.10	242578.00
15.8	Providing and fixing ISI marked Stainless Steel sliding door bolts, of required colour or shade, with nuts and screws etc. complete of approved make as per direction of Engineer in charge Godrej Code No. 2282	830.00	Each	631.90	524477.00
15.9	Providing and fixing stainless steel tower bolts, of required colour or shade, with SS nuts and screws etc. complete of approved make as per direction of Engineer in charge with Godrej Product code-3263	790.00	Each	270.90	214011.00
15.10	Providing and fixing Glass shelf 600mm long of Jaquar make (Code No. A CN-1171N of Continental series) or equivalent as per direction of Engineer-in-charge.	75.00	Each	1927.70	144578.00
15.11	Providing and fixing single towel rail 600 mm long of Jaquar make Cat No. ACN-1111SM complete with CP brass screws etc all fitting arrangement of approved quality and colour or equivalent range as approved by engineer in charge.	75.00	Each	1658.90	124418.00
15.12	Providing and fixing C.P. brass two way bib cock with flange of Jaguar make (Cat No. CON-041KN of Continental series or equivalent) as approved by engineer in charge.	75.00	Each	1393.30	104498.00
15.13	Providing and fixing Hand shower (health faucet) with 8mm dia, 1.2 metre long flexible tube & wall hook of Jaquar make (Code No. ALD-573 of Allied series) or equivalent as per direction of Engineer-in-charge.	75.00	Each	1641.20	123090.00

15.14	Providing and fixing Stainless steel towel ring round with round flange of Jaquar make (Code No. ACN-1121BN of Continental series) or equivalent fixed to wooden cleats with CP brass screws with concealed fittings arrangement as per direction of Engineer-in-charge.	75.00	Each	1086.00	81450.00
15.15	Providing and fixing toilet paper holder with Flap of jaguar (CAT NO. ACN-1153S) : as per direction by Engineer in charge.	75.00	Each	1641.70	123128.00
15.16	Credit for old dismantled Cupboard/flush door shutter i/c frame to taken away by the agency	334.00	Each	-300.00	-100200.00
15.17	Credit for old dismantled Steel to be taken away by the agency.	9402.00	Kg	-25.00	-235050.00
Sub-Total					2605851.00
Total (A+B)					59252840.00

PART - C

PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities, enclosed on separate sheets from Page : **164 to 173**

SCHEDULE 'D'

Extra schedule for specific requirements / documents for the work, if any	:-	General Conditions and Specifications
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SCHEDULE 'E'

Reference to General Conditions of contract	:-	As per Part - A
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Name of work:	:-	As per Part - A
Estimated cost of work	:-	As per Part - A
(i) Earnest money	:-	As per Part - A
(ii) Performance Guarantee	:-	As per Part - A
(iii) Security deposit	:-	As per Part - A

SCHEDULE 'F'

General Rules & Directions: -		
Officer inviting tender:		:- As per Part - A
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 under clause 12 of Schedule 'F'
Definitions:		
2 (vi)	Engineer-in-Charge	:- Executive Engineer (E), Guwahati, Electrical Division, CPWD, Guwahati-21
2(viii)	Accepting Authority	:- As per Part - A
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits.	:- 15%
2 (xi)	Standard schedule of Rates	:- Based on Electrical DSR'2025 (Upto date correction slip) & Market Rate
2 (xii)	Department	:- C.P.W.D.
9 (ii)	Standard CPWD contract Form GCC 2023, (Construction work) C.P.W.D Form 7 as modified and corrected up to last date of submission of bid including extension if any.	:- As per Part - A

Clause 1		
Time allowed for submission of Performance Guarantee, Program Chart (Time and Progress) and applicable labour licenses, registration with EPFO,		:- As per Part - A

ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance		
Maximum allowable extension with late fee @ 0.1% per day of performance guarantee amount beyond the period provided in (i) above.	:-	As per Part - A

Clause 2

Authority for fixing compensation under clause- 2.	:-	As per Part – A
Clause 2 / Clause 2A		Clause 2 Applicable

Clause 5

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

Mile Stone Break up			
Sl. No.	Description of Milestone (Physical)	Time Allowed (from date of start)	Amount to be withheld in case of non-achievement of milestone (% of tender amount of electrical portion)
1.	15% completion of work	04 Months	0.75%
2.	30% completion of work	08 Months	0.75%
3.	50% completion of work	12 Months	1.00%
4.	75% completion of work	16 Months	1.25%
5.	100% completion of work	18 Months	1.25%

Time allowed for execution of work.	:-	18 (Eighteen) months.
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Authority to decide:

(i)	Extension of time	:-	As per Part - A
(ii)	Rescheduling of mile stones	:-	As per Part - A
(iii)	Shifting of date of start in case of delay in handing over of site.	:-	As per Part - A

Proforma of schedule 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	Full	As per CPWD 6 (Sl. No. 3)
Part B	Portion with encumbrances	Nil	NA
Part C	Portions dependent on work of other agencies	NA	NA

Clause 6

Mode of Measurement : computersised Measurement Book (CMB) / Electronic Measurement Book (EMB)	:-	EMB
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Clause 7

Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	:-	Rs. 11.80 Lakh [Except Final Bill]
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Clause 7A

Whether Cluse 7A shall be applicable	:	Yes Applicable
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Clause 8

Competent Authorities to inspect and issue part / final completion certificate	:	As per Part – A
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Clause 8A

Authority to decide compensation on account If contractor fails to submit completion plans	:	As per Part – A
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Clause 10A

List of testing equipment to be provided by the contractor at site lab	:-	All equipment required for commissioning
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Clause 10 – B(ii)

Whether clause 10-B (ii) shall be applicable	:-	Not Applicable
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Clause 10 C**:** **Not Applicable**

Component of labour expressed as percentage of value of work	:	NA
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Clause 10 CC**:-** **As per Part – A****Clause 11**

Specifications to be followed for execution of work	:-	CPWD General Specifications for Electrical Works Part-I (Internal) 2023, Part-II (External) 2023, Part V Wet Riser & Sprinkler Systems – 2020, Part-VIII (Gas Based Fire Extinguishing System) 2013 with upto date correction slips, Indian Electricity Rule amended upto date and NBC – 2016 amended upto date relevant I.S. Codes where CPWD Specification is silent.
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Clause 12.2 (c)

Deviation limit beyond which clause 12.2 (c) shall apply for building work.	:	100%
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Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

Clause 12.4

(i) Deviation limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth works subhead in DSR and related items).	:	100%
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items.	:	100%

Clause 16

Competent Authority for deciding reduced rates.	:-	As per Part - A
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Clause 18

List of mandatory machinery tools & plants to be deployed by the contractor at site.	:-	All tools & plants required for commissioning as follows mentioned below
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1.	Steel/Aluminium Ladder 1.5 m to 8 m.	2 Nos.
2.	Chase cutting machines.	2 Nos.
3.	Electrical wire drawing equipment.	2 Set.
4.	Torque wrench for nut/bolt/screws.	2 Nos.
5.	Conduit die set.	2 Set.
6.	Pipe vice.	1 No.
7.	Bench vice.	1 No.
8.	L.T. Meggar 500/1000 volts.	1 No.
9.	Tongue Tester.	1 No.
10.	Multimeter	1 No.
11.	Hydraulically operated	1 No. operated crimping machine
12.	Earth tester.	1 No.
13.	Portable Ordinary drilling machine.	2 Nos.
14.	Portable Hammer drilling machine.	2 Nos.
15.	Overhead conduit puller.	1 No.

Clause 19

Clause 19 C	Authority to decide penalty for each default	:-	Engineer-In-Charge authority to decide penalty for each Default.
Clause 19 D	Authority to decide penalty for each default	:-	Engineer-In-Charge authority to decide penalty for each Default
Clause 19 G	Authority to decide penalty for each default	:-	Engineer-In-Charge authority to decide penalty for each Default
Clause 19 K	Authority to decide penalty for each default	:-	Engineer-In-Charge authority to decide penalty for each Default

Clause 25

Conciliator	As per Part – A
ArbitratorAppointing Authority	
Place of Arbitration	

Clause 32**Requirement of Technical Representative (s) & recovery Rate**

Sl. No	Minimum Qualification of Technical representative	Number (of Major + Minor component)	Designation (Principal Technical / Technical representative	Minimum Experience (years)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(i)	
					Figures	Words
As per part - A						

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

Diploma Engineer with minimum 10 years 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.

~~Minimum recovery for not deploying Building Information Model (BIM) professional shall be Rs. Two lac per month or as mentioned above, whichever is higher.~~

Clause 38

(i)	(a)Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of printed by CPWD with upto date correction slips :-	:	NA
(ii) Variations permissible on theoretical quantities:			
(a)	Cement for works with estimated cost put to tender not more than Rs. 5 lakhs	:	NA
	for works with estimated cost put to tender more than Rs 5 lakh	:	NA
(b)	Bitumen for all works.	:	NA
(c)	Steel Reinforcement and structural steel sections for each diameter, section and category	:	NA
(d)	All other materials.	:	Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor.	
		Excess beyond permissible variation	Less use beyond the permissible variation
---NIL---			

GENERAL TERMS AND CONDITIONS

1. Location :

“Income Tax Residential Complex at Beltola, Guwahati”

2. Related Documents

The work shall be carried out as per relevant part of the CPWD specification for Electrical works Part-I (Internal) 2023, Part-II (External) 2023, Part V Wet Riser & Sprinkler Systems – 2020, Part-VIII (Gas Based Fire Extinguishing System) 2013 with upto date correction slips and relevant I.E. rules and BIS Specifications, Indian electricity rules amended up to date. National Building Code 2016 amended up to date and as per direction of Engineer –in - Charge. However, nothing extra shall be paid on account of these conditions, as the same are to be read along with schedule of quantities for the work. The work to be carried out as per NBC-2016, CPWD Specifications amended up to date, IS/BIS codes and as approved by Engineer-in-charge.

3. Terminology

The definition of terms used in these specifications shall be in accordance with relevant IS.

4. Order of Preference:

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

- (i) Schedule of quantities.
- (ii) General Terms and Conditions.
- (iii) General Conditions of Contract for CPWD Works.
- (iv) Drawings.
- (v) CPWD General Specifications.
- (vi) Relevant IS or any other international code in case IS code is not available.

5. Site Information

The equipments will be installed at **“Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”** The tenderer should, in his own interest, visit the site and familiarize himself with the site conditions before tendering.

- (i) General security restrictions are given as under:
 - a) No inflammable materials including P.O.L. shall generally be stored at site of work.
 - b) The movement of trucks and vehicles will be regulated in accordance with rules and regulations as approved by competent authorities.
 - c) The contractor shall inform in advance, the truck registration number, ownership of the trucks, names and address of the drivers and labours for necessary action by the security agency.
 - d) Due to the site conditions, no space for construction of go down and stay of site staff may be allowed.

- e) Names and addresses of labourers/staff along with identity proof and residence address proof etc. working at site shall be furnished in advance for security verification for issue of passes.
- f) The labourers/staff should not be changed too frequently once the verification of the character and antecedents is done.
- g) As and when there will be security requirements, certain additional restrictions can be proposed as per the requirement of the situation.
- h) **IDENTITY CARDS:-**The identity cards will be issued to the workmen employed by the contractor after proper police verification for which contractor shall submit a list of worker's to be deployed on site of work. The cost of photos would be borne by the contractor. They will be required to carry the identity- cards with them during their working inside the building.
- i) Therefore in view of the situation explained under above paragraphs, the tenderer must visit the site and must get himself acquainted with the proposed site of work, study specifications and conditions carefully before tendering rates. Nothing extra shall be paid on account of compliance of any of these clauses. The hindrance due to security constraints shall be not be accounted towards adjustment of completion time mentioned in the tender document.

6. **Conformity with statutory Acts, Rules, Standards and codes**

- (i) All components shall conform to relevant Indian Standard Specifications, International Standards and shall bear the stamp of the testing laboratory wherever existing and amended to date. All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 2003 and Indian Electricity Rules, 1956 amended to date. They shall also conform to CPWD General Specifications for Electrical Works Part-I (Internal) 2023, Part-II (External) 2023, Part-III-LITS & Escalators – 2003, Part-IV Sub Station – 2013, Part V Wet Riser & Sprinkler Systems – 2020, Part VI Fire Detection and Alarm System – 2018 , Part-VII (DG Set) – 2013, Part VIII Gas Based Fire Extinguishing System-2013, Heating, Ventilation & Air-Conditioning (HVAC) – 2017 with upto date correction slips and relevant I.E. rules and BIS Specifications.

7. **Safety Codes and Labour Regulations**

- (i) In respect of all labours employed directly or indirectly on the work for the execution of any work on contractor's part, the contractor at his own expense, will arrange for the safety provisions as per the statutory provision, B.I.S. recommendations, factory act, workman's compensation act & CPWD safety code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for penalty. In addition the Engineer-in- charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost incurred thereon from the contractor.
- (ii) The contractor shall provide necessary barriers, signals and other safety measures wherever necessary so as to avoid accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising there from during the execution of work. The contractor has to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

8. Works to be arranged by the department

Unless otherwise specified in the tender documents, the following works shall be arranged by the Department:

- (i) Space for accommodating all the equipments and components involved in the works. However, arrangement to make it lockable and its watch & ward shall be made by contractor himself.

9. Works to be done by the contractor

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

- (i) Suspenders, brackets and floor/wall supports for suspending/ supporting cable tray etc.
- (ii) Painting of all exposed metal surfaces of equipments and components appropriate colour as per relevant part of bid document.
- (iii) Making opening in the wall/floors/slabs or modifications in the existing openings wherever provided for cable/cable tray etc. Opening in the slab/retaining walls/brick wall etc. shall be made by means of core cutting machines only.
- (iv) All electrical works including cable/wires, earthing etc. beyond power supply made available by the department.
- (v) Making good all damages caused to the structure during installation and restoring the same to their original finish.
- (vi) Approval from Local Body as may be required as per local bye-laws. (The contractor's responsibility shall be limited to the work executed by him.)

10. Rates

The rate quoted by bidder, shall be firm and inclusive of all taxes, duties and levies and all charges for packing, forwarding insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary constructional storage, risks, overhead charges, general liabilities / obligation etc.

11. Power Supply

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

12. Acceptable Makes

The acceptable makes of the various equipments/components/accessories have been indicated in "Acceptable Makes" annexed with this document. The bidders shall work out the cost of the offers on this basis.

Successful bidder is to comply with the Public Procurement (Preference of Make in India), Order 2017 dated 15.06.2017, while executing the contract. If any provision made elsewhere in this NIT, which in contravention with the Make in India policy, the later shall have preference over the former. Engineer-in-charge will have the final authority to take appropriate decision in the matter.

13. Machinery for Erection

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

14. Completeness of the tender, submission of programme, approval of drawings and commencement of work

(i) Completeness of the tender:-

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

(ii) Submission of programme:-

Within thirty days from the date of receipt of the letter of award, the successful tenderer shall submit his programme for submission of drawings, supply of equipment, installation, testing, commissioning and handing over of the installation to the Engineer-in -charge. This programme shall be framed keeping in view the building progress and the milestones fixed in Schedule 'F' Clause-5 shall be given priority.

(iii) Submission of drawings

The contractor shall submit the drawings to the Engineer-in-Charge for approval before start of work.

(iv) Commencement of work

The contractor shall commence work as soon as the drawings submitted by him are approved either in full or in part as the case may be.

15. Dispatch of materials to site and their safe custody

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

16. Extent of Work

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

17. Compliance with Regulations and Indian Standards:

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

- (i) Factories Act.
- (ii) Indian Electricity Rules.
- (iii) B.I.S. & other standards as applicable.
- (iv) Workmen's compensation Act.
- (v) Statutory norms prescribed by local bodies like CEA, Power Supply Co., Local Body etc.
- (vi) NBC 2016

17.2 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

17.3 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs. 50/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

18. Indemnity:

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

19. Co-ordination with other Agencies

The contractor shall co-ordinate with all other agencies involved in the construction work so that the work of other agencies is not hampered due to delay in his work. The work, which directly affect the progress of work of other agencies, shall be given priority. The contractor shall have to coordinate the agency executing the work for matching the external finishing & MEP services. The contractor shall be responsible for any damages done in the ongoing construction work and shall rectify at his own expenses.

20. Care of the Building

Care shall be taken by the contractor during execution of the work to avoid damage to the building. Care shall also be taken by the contractor to avoid the damage to any of these existing service/service lines, any part of the building etc. If any damage is caused to any of the existing services/service lines, or any part of the building the same shall be repaired / rectified and made functional or restored so its original finish by the contractor immediately at his own expenses failing which the same shall be repaired/ rectified and made functional by department at the risk and cost of the contractor. The decision of the

Engineer-in-charge in this regard shall be final & binding. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

21. INSPECTION BEFORE DESPATCH

All routine tests shall be conducted before dispatch of equipments. No equipment shall be dispatched from the manufacture's premises without such tests being conducted and test result recorded. These test certificates shall be given along with the supply of equipments. The Engineer In-charge shall, if he so desires inspect and witness the pre-delivery tests. For this purpose, the contractor shall give 15 days' advance notice. Agency shall arrange for inspection by the department. Department shall bear expenses for inspection as far as traveling, boarding and / lodging is concerned. Agency should submit the compliance reports of defects noticed if any, before the dispatch of material. However, waiver if any, for inspection shall be at the discretion of the Engineer-in-Charge without any cost implication but ROUTINE TEST Certificates shall have to be submitted for equipments.

Prior to dispatch, all equipments shall be adequately protected & insured for the whole period of transit, storage and erection against corrosion and incidental damages etc. from the effect of vermin, sunlight, rain, heat and humid climate.

22. INSURANCE

The contractor shall include storage cum erection insurance including third party insurance right from the storage to commissioning of various equipment with beneficiary as Engineer In-charge. All insurance which the contractor is required to enter into under the contract shall be affected with any authorized general insurance company and the contractor shall produce the policies of insurance.

If the contractor fails to effect and keep in force the insurance the department may effect and keep in force any such insurance and pay such premium as may be necessary for that purpose and from time to time and deduct the amount, so paid by the department, from any money due or which may become due to tenderer or recover the same as debit from the contractor's bill.

23. QUALITY OF MATERIAL AND WORKMANSHIP

All materials and equipment 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. None of the material/ items/ equipment etc supplied shall be more than six months old from date of supply at site. Copy of GST Gate Pass/ Invoice/ Shipment / Custom Clearance certificate/ details (in case of imported equipment) shall be submitted to prove the date of manufacture & genuineness of the equipment/ machines supplied. All components of the equipments shall have adequate factor of safety. The work of fabrication and assembly shall conform to sound engineering practice and on the basis of "Fail Safe Design". The mechanical parts subject to wear and tear shall be easily replaceable type. The construction of the equipments shall be such as to facilitate easy operation, inspection, maintenance and repairs. All connections and contacts shall be designed to minimize risk of accidental short circuits caused by animals, birds and vermin etc. All identical items and their component parts should be completely, interchangeable including spare parts. 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.

24. INSPECTION AND TESTING AT SITE

- i. The installation shall be subject to necessary inspection during every stage of erection, by the Engineer In-charge or his authorized representative. The successful tenderer shall provide all facilities and assistance for the purpose.
- ii. The completed installation shall be inspected and tested by the Engineer-in-Charge in the manner as will be laid down by him, in consultation with the contractor.
- iii. All instruments and facilities necessary for the tests shall be provided by the contractor.
- iv. For fabricated equipment, 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. 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. The fabricators must have modern facilities of design, fabrication and testing capable of delivering high quality LT panels and switch boards after testing as per relevant specifications and having proper certification for the tests as applicable.

25. **COMPLETENESS OF WORK**

The installations shall be completed in all respects and put in to operation even where certain details are not specifically mentioned in these specifications and the same is deemed to be included within the scope of this tender.

26. **Safety Measures**

All equipments shall incorporate suitable safety provision to ensure safety of the operating personnel at all times. The initial and final inspection reports shall bring out explicitly the safety provisions incorporated in each equipment.

27. **Guarantee**

Comprehensively all the goods supplied shall under this contract be new, unused and incorporate all recent improvements in design and materials unless prescribed otherwise in the contract. The supplier further warrants that the goods supplied under this contract shall have no defect arising from design, materials (except when the design adopted and/or the material used are as per the Purchaser's/Consignee's specifications) or workmanship or from any act or omission of the supplier, that may develop under normal use of the supplied goods under the conditions prevailing in India. The warranty shall include all spares, labour and preventive maintenance from the date of completion of the satisfactory installation and acceptance till warranty period. All electrical and mechanical fittings (except LED fittings) / fixtures / appliances such as fans, switches, fire-fighting equipments and sub-station equipments should be have **1 (one) year** guarantee period. The equipment or component or any part thereof so found defective during the guarantee period shall be 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 Engineer-in-charge in this regard shall be final.

- (i) The contractor shall guarantee the complete system to maintain the specified conditions under all conditions of ambient temperature.
- (ii) All equipments shall be guaranteed for a period of 12 months (except the LED fittings for which the guarantee shall be 5 years) from the date of acceptance and taking over of the installation by the department against unsatisfactory performance and/ or

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

breakdown due to defective design, material, manufacture, workmanship or installation. The equipment or component or any part thereof so found defective during the guarantee period shall be 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 Engineer-in-Charge in this regard shall be final.

(iii) LED fittings i/c driver as a whole shall be guaranteed for 5 years.

(iv) The guaranty for LED fittings is to be got submitted from the manufacturer also in addition to the guarantee from the contractor in form of tripartite agreement among CPWD, manufacturer and contractor. The manufacturer should give undertaking that in case of discontinuation of model and non-availability of spares, they will replace the fittings with equivalent/ high end model in case of manufacturing defect during the warranty period of respective services.

(v) 20% of the cost of LED fittings as per purchase bill / GST invoice will be kept with the department as guarantee money and will be released after guarantee period of 5 year is over including defect liability period.

28. Taxes and Duties

The tender is for entering into percentage rate works contract. The rates shall be inclusive of all taxes, duties, levies, cess, packing, transportation, handling etc. Statutory deduction of GST as applicable shall be made at source from each running /final bill payment. A certificate of TDS shall be issued by the department to the contractor.

29. Terms of Payments:

The following payment terms shall be applicable:

- (i) No advance payment shall be made.
- (ii) Following percentage of contract rates shall be payable against the stage of work shown herein:

Sl. No.	Stage of Work	LED fittings, Fans, MCB & MCB DBS	All other items
1.	After initial inspection (wherever specified) and delivery at site in good condition on pro-rata basis.	60%	70%
2.	On completion of installation in all respect on pro-rata basis.	25%	15%
3.	On testing, Commissioning, Obtaining Clearance from Local Body and handing over to the department for beneficial use.	15%	15%

30. Tender Drawings, Drawings for Approval and Completion Drawings Tender Drawings

Drawings for approval on award of the work

The contractor shall prepare and submit following drawings within 30 days of award of work for approval before commencement of installation. The approval of drawings however does not absolve the contractor of his responsibility to supply the equipments/materials as per agreement. In case of any contradiction between the approved drawings and agreement the decision of the Engineer-in-Charge shall be final and binding on the contractor.

- Detailed layout plan of electrical points, cable laying, Electrical panels.
- Technical particulars of each and every item to be used at site.
- Any other drawings relevant to the work.

31. Completion drawings

Contractor shall periodically submit completion drawings for all the E&M services as and when work in all respects is completed in a particular area. These drawings shall be submitted in the form of four sets of CD's / Pen Drives and four *in hard copy (A2 paper sheet)* each containing complete set of drawings on approved scale indicating the work as - installed. These drawings shall clearly indicate following:

- i. General layout of the building.
- ii. Locations of main switchboard and distribution boards, indicating the circuit numbers controlled by them.
- iii. Position of all points and their controls.
- iv. Types of fittings, viz LED, pendants, brackets, bulk head, fans and exhaust fans etc.
- v. Name of work, job number, accepted tender reference, actual date of completion, names of Division/Sub-Division, and name of the firm who executed the work with their signature.
- vi. Single line diagram, power schematic, control schematic with detailed bill of materials, showing makes, types and description of all components and accessories.

Successful contractor shall also furnish the Manufacturer's instructions on Installation, Operation & Maintenance for all the capital items.

32. Documents to be Furnished on completion of Installation

Three sets of the following documents shall be furnished shall be the department by the contractor on completion of works:-

- Completion drawings as per paragraph 34.
- Sets of manufacturer's technical catalogues of all equipments and accessories.
- Operation and maintenance manual of all minor equipments, detailing all adjustments, operation and maintenance procedure.

33. Submission of authenticated copies of itemized bills of materials.

In the reference of OM No. DG/SE/CM/Misc./77 dated 04.05.2018 it is mandatory for the field staff of CPWD to obtain written authenticated copies of itemized bill of materials which is as LED fittings, fans, wires, conduit, MCB, MCB DB, Panel, LT UG cable, etc., This is irrespective of existences of any terms and condition specified in contract/agreement. Authenticated copies must be obtained by CPWD authorities from the agency/contractors before settling payment.

34. Agency / contractor should submit following documents.

- (i) **LM79 & LM80 reports of LED fittings has to be submitted.**

5 years warranty certificates from OEM for LED fittings has to be submitted. 20% of the cost of LED fittings as per purchase bill / GST invoice will be kept with the department as guarantee money and will be released after guarantee period of 5 year is over including defect liability period.

- (ii) If any defect is noticed during the guarantee period, it should be rectified by the contractor within seven days and if not attended, the same will be got done by the Engineer-In-Charge through another agency at the risk and cost of the contractor.

The Similar Work Experience of E&M Services

1. The similar work experience for determining the eligibility of Associate agencies as prescribed at Bid Documents – “Information and Instructions for Bidders for e-bidding” is as given below:
2. For Each E&M Works, the composite contractor shall have to associate with other agency, who fulfils the following requirements. Joint ventures for associate agencies are not accepted. Should have satisfactorily completed the works as mentioned below during last 7 years ending previous day of last date of submission of bid:

Sl. No.	Components of Specialized Works	Approx. Cost & Eligibility Criteria	Definition of similar work
1.	<u>C-1</u> Internal Electrical & External Installation i/c dismantle etc. ECPT Rs. 2,10,26,844.00	CPWD Enlisted Contractor in composite category having valid electric license. Otherwise, the agency shall associate with an agency having valid electrical contractor license and shall fulfill following criteria. 3 similar works, each of value not less than @ 40% of ECPT of this Package OR 2 similar works, each of value not less than @ 60% of ECPT of this Package OR 1 similar work, each of value not less than @ 80% of ECPT of this Package	Providing Installation, Testing & Commissioning of Internal Electrical Installation in the buildings.
2.	<u>C-2</u> Firefighting system (including wet riser and sprinkler system, portable fire extinguishers) ECPT Rs. 2,25,522.00	3 similar works, each of value not less than @ 40% of ECPT of this Package. OR 2 similar works, each of value not less than @ 60% of ECPT of this Package OR 1 similar work, each of value not less than @ 80% of ECPT of this Package.	Providing Installation, Testing & Commissioning of Fire fighting system

3. 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 date of submission of bid. The composite category contractor is also eligible to carry out himself/herself any or all of these works without associating any specialized agency provided: -
 - a) The firm fulfil the prescribed eligibility criteria respectively for these work(s).
 - Or**
 - b) The firm directly procures the equipment of approved make from manufacturer and get it installed from authorized agency/service provider of the manufacturer or specialized agency as per criteria mentioned in NIT.

The composite contractor and the associated agencies shall give required affidavit to confirm their association. Tender accepting authority may approve change of associate in case it is required during the currency of the contract.

Note: The main contractor/agency has to submit details of such agency to be associated/manufacturer or their authorized service provider to the Engineer-in-charge within prescribed time. The associated agency shall be approved by Engineer-in-charge. In case the main contractor intends to change associated agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge. The new agency/agencies shall also have to satisfy the laid down eligibility criteria mentioned above. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the main contractor to change the agency executing such item of work and this shall be binding on the contractor.

4. Approval of the specialized agencies for each specialized work shall be obtained from the Engineer-in-Charge within prescribed time. Even if, such specialized items of work shall be executed by the specialized agencies at later date the work shall be deemed to be executed by the tenderer for all purposes and the responsibility of the quality of items of work executed etc. shall continue to be that of the tenderer only.
5. The associate agency shall submit the willingness to get associated with the main contractor for execution of the E&M component of works in wholesome manner and as per the conditions set out in the MOU to be entered into, between the one who is awarded the work and the associate eligible electrical contractor/ manufacturer or their authorized service provider. (Format of willingness and MOU is given below).
6. In support of the eligibility conditions of the proposed associated electrical contractor, copy of their registration documents, Electrical Contractor's License, GST documents, eligibility documents duly attested by Main contractor shall be submitted to the Engineer-in-Charge for deciding the eligibility. Such associate electrical contractor will certify that they are not debarred as on date from the any department of Central Govt/Central PSU/State Govt./State Govt.PSU/Autonomous bodies of Central and State Govt..
7. In the event of the concerned E&M agency not performing satisfactorily or failure of associate/ sub-contractor to complete the E&M work, the main contractor on the written direction of the department, shall remove the Associate/sub-contractor deployed on the work and shall submit name of new associate who fulfils the conditions mentioned in NIT to execute the leftover work without any loss of time or variation in cost to the department in this regard. Such associate shall also enter into Agreement with the main tenderer shall meet all the guarantee for the equipment already supplied for which payment has been released by the department in part. If any equipment supplied for the work, during the currency of the earlier Associate/sub-contractor and paid partly by the department becomes redundant/not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to Department. No change of Electrical Contractor will be allowed without prior approval of the Engineer-in-Charge.
8. The main contractor shall be responsible and liable for proper and complete execution of the E&M works and ensure coordination and completion of both civil and electrical work.

9. The associate agency shall attend the inspection of the work by the Engineer-in-Charge as and when required.
10. The agencies executing the electrical work should have valid license for LT/HT as applicable. Contractor will have to submit self attested copies of completion certificate(s) for similar works issued by the officer of the department (Central Govt. / State Govt. / PSU / Autonomous Body), not below the rank of Executive Engineer of equivalent. In case of work done in private sector, then **26AS of the Income Tax Department** confirming the payments must be submitted. The completion certificate must clearly indicate :-
 - (i) Name of Work.
 - (ii) Stipulated date of start and actual date of completion.
 - (iii) Gross value of work done.
 - (iv) That the work has been completed satisfactorily.
 - (v) Full address of the client, officer issuing certificate and location where work is executed.
11. The composite contractor and the associated specialized agencies are to give required affidavit to confirm their association. The Engineer-in-Charge approves the change of Sub-Agency in case it is required during the currency of the contract but the proposed agency shall also meet eligibility criteria.
12. The composite category contractor is also be eligible to carry out himself/herself any or all of these works without associated and specialized agency provided.
 - (a) He fulfills the prescribed eligibility criteria respectively for these work(s).
 - (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer or specialized agency as per criteria mentioned in NIT.
 - (c) For specialized E&M works and other original E&M works, wherever required, agency to submit along with the performance guarantee after the acceptance of tender, an undertaking from the OEM regarding:
 - (i) Authorization certificate.
 - (ii) The OEM will unconditionally support the lowest tenderer technically throughout the execution of contract as well as for Maintenance/ Comprehensive Maintenance Contract for the useful life of the system, and
 - (iii) OEM will provide all the spares required for healthy functioning of the equipment for at least seven years from the date of supply of equipment.
13. 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 instructions of Engineer-in-charge and other senior officers of the Department during the progress of work.

14. Main agency shall have to submit credentials of the proposed associated agencies for verification and approval of the department in proforma at 'Form-H' and willingness as per Annexure C. After approval of agency by the Engineer-in-charge of major component (E&M), the main contractor has to submit MOU as per Annexure D within 30 days from the date of issue of award letter.
15. After approval of the associate contractor, the main contractor will submit separate MOU signed with each of associate contractor associated with the main contractor. The MOU in the enclosed form shall be signed by both the parties' i.e. main contractor as 1st party and associated electrical contractor as 2nd party, independently for all electrical and mechanical components.
16. In the event of the concerned associated contractor not performing satisfactorily or failure of associate contractor to complete the E&M work, the main contractor, on written directions of the department, shall remove the Associate contractor deployed on the work and shall submit name of new associate who fulfil the conditions mentioned in NIT to execute the left over work without any loss of time or variation in cost to the department. Such associates shall also give an undertaking along with the main tenderer that both of them shall stand guarantee for which payment has been released by the Department in part for any equipment supplied for the work, during the currency of the earlier Associate contractor and paid partly by the Department. Also if any such material becomes redundant/ not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to Department. No change of Electrical Contractor will be allowed without prior approval of the Engineer-in-charge of the work.
17. All technical discussions shall be attended by the associate agencies and the main agency. Commercial/Technical submissions for the electrical works shall be signed and submitted by the associate agencies along with the main agency.
18. The main contractor shall be entirely responsible and answerable for all the works done by his associated electrical agencies regarding their quality, adherence to the laid down specification, terms and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.
19. In respect of works i.e. **"Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."** the materials and equipments shall be procured only from the original equipment manufacturers/ authorized dealers of OEM. The contractor shall submit all documentary details in fulfilment of this conditions regarding procurement of materials including relevant test certificates.
20. Executive Engineer (E) shall be the Engineer-in-charge as far as electrical and mechanical works are concerned. Separate tender schedule abbreviated CPWD-7 and Special Conditions for Electrical Work are appended with this tender. It will be obligatory on the part of the contractor/ tenderer to sign the tender documents for all the component parts.
21. The main contractor shall be responsible and liable for proper and complete execution of

the Electrical and mechanical work and ensure coordination and completion of both civil and electrical work.

22. The main contractor, who is not having desired experience as per eligibility criteria has to enter into agreement with eligible contractors associated by him for executing of minor components (E&M). Copy of such agreement shall be submitted to Executive Engineer (E) in charge of minor component (E&M).
23. The associate contractor shall attend the inspection of the work by the Engineer –in-charge of E&M works as and when required.
24. No change of Electrical Contractor will be allowed without prior approval.
25. Components of work executed other than those included in definition of similar work shall be deducted while calculating cost of similar work. Bidder shall submit abstract of cost of work in support of this.
26. For the purpose, “Cost of work” shall mean gross value of the completed work including the cost of material supplied by the Government/ client, but excluding those supplied free of cost. This should be certified by an officer not below the rank of Executive Engineer/ project manager or equivalent.
27. If the main contractor fails to associate agency for execution of Minor components of work within 30 days of award of work OR before start of Minor components of work whichever is earlier or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of work shall be withdrawn from the tender and the same shall be got executed by the Engineer-in- charge at the risk and cost of the main contractor.
28. Verifiable completion certificates of the work, registration/ approval documents as the case may be, duly attested by the applicant shall be submitted within 30 days of award of work OR before start of Minor component of work whichever is earlier. Valid Electrical Contractor’s license, as the case may be, duly attested by the applicant shall also be submitted within 30 days of award of work OR before start of Minor component of work whichever is earlier.
29. Self attested GST registration documents in respect of the associated agencies shall be submitted within 30 days of award of work or before start of Minor component of work whichever is earlier.

ADDITIONAL CONDITIONS AND SPECIFICATIONS FOR THE WORK OF INTERNAL & EXTERNAL ELECTRICAL INSTALLATIONS

1. The wires / cables used for point wiring, circuit wiring, sub-main wiring, power wiring and other wirings shall be done by FRLSH/HFFR grade of ISI marked PVC insulated copper conductor single core cable of 1100 V grade and of makes as specified in the list of accepted makes of materials.
2. All the wires should be terminated to the switch box / DB / MCB etc. by crimping with suitable size tinned copper lugs, unless the wire is single stranded. For termination to switches soldering is permissible. Nothing extra shall be paid on this account.
3. Hidden / concealed items and earthing work shall be done in the presence of the Engineer-In-charge of the work or his authorized representative only. The contractor shall give due notice for such work in advance to the department.
4. The wireman / electrician engaged shall possess valid electrical workman permit in appropriate category as per rule.
5. The drawing showing layout of the main board, allied equipment, if any, shall be got approved by the contractor from the engineer-in-charge before fabrication and execution.
6. All hardware, fastening material viz nuts, bolts, washer and screws etc. to be used on work shall be of zinc / cadmium plated iron.
7. The contractor shall have to furnish the insulation test report, earth test report, along with all required detailed of electrical load on the prescribed proforma for the electric connection from the supply company.
8. The contractor shall submit the completion certificates and completion plan as per clause 1.26 of General specification for Electrical work (Part-I internal)-2023.
9. The chases in wall shall be done by chase cutting machines, for which the contractor shall arrange adequate numbers of chase cutting machines (chase cutters) for cutting chases in wall etc. for laying of conduit within the scope of work nothing extra shall be paid.
10. The contractor shall be entirely responsible and answerable for all the works done by him regarding quality, adherence to the laid down specifications, terms and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.
11. The contractor is advised to visit the site before quoting for his tender to apprise himself about the site environments and other conditions. Drawings and inventories can be seen in the office of the Engineer – in – charge.
12. The contractor will make his own storage of his own materials. The watch and ward of the materials and of the installations would be responsibility of contractor till the work is completed / handed over to the department. Nothing extra shall be paid to the contractor on this account.
13. The contractor should use only the approved makes of materials in the work specified in the NIT.

The agency will provide lay out drawing prepared by his Engineer with consultation with Engineer-In-Charge or his representative for approval before execute of work.

16. All multi data matters specified in item shall be suitable to measure voltage, current, PF, Kwh, frequency etc.
17. The department reserves the right to send such materials to the manufacturers / authorized test laboratory to verify the genuineness and quality of the product.
18. The work shall be carried out in engineering like manner and bad workmanship shall be rejected summarily. For redoing the job, no claim of the contractor shall be entertained on this account.

19. LUMINAIRES:

- 19.1. A sample of each item of schedule of supply shall be handed over by the bidder in the office of the Engineer – in – charge (Electrical) before procurement of the fittings. These samples shall be returned back afterwards.
 - 19.2. The makes of luminaries shall be strictly as per the tender conditions. The contractor must submit technical literature & photometric data, LM 79 and LM 80 type test certificates along with write up of the luminaries to be supplied by him.
 - 19.3. Copy of type test certificate for all types of luminaries as per BIS, including type test certificate from a Central / State government or public sector laboratory or a laboratory recognized / accredited by the Central / State Government for such tests for the light fittings shall be submitted before acceptance of the fittings.
 - 19.4. Contractors should obtain an undertaking from the manufacturer that they have a system of quality control to ensure consistent good quality of the finished product and as such has a scheme of inspection of the light fittings. They should agree for inspection of the light fittings and testing as per relevant IS and other standards in their labs.
- 19 It will be the obligatory on the part of the contractor to get all the light fittings and fixtures and their components / accessories inspected by authorized engineer / personnel of the manufacturer of the fittings at site after the materials are received at site and obtain certificate that the materials reached at site are genuine and manufactured by them.
 - 20 All MCCBs with Ics = 100% Icu shall only be provided except mentioned.
 - 21 All the MCCBs / RCCBs/ MCBs/ MCB DBs shall be of similar make. MCBs shall be of 10 kA rating. For incomer MCCBs in panel's earth leakage protection shall be provided. The kA rating for MCCB shall be as per the item.
 - 22 The contractor will have to arrange for insulation and other tests like cable test etc. as per rules in the presence of the representative of Engineer-in-Charge as and when required by him and submit the test report in triplicate before the work can considered as complete.
 - 23 The contractor shall be responsible for the safe custody of the electrical installation in the building, including fitting and fixtures till the installations handed over to the department. He should make his own arrangement for proper watch and ward at his risk and cost. No claim will be entertained on this account.

- 24 The work is to be carried out in workman like manner and generally in accordance with the plans. However, the contractor will be bound to carry out the work with minor deviation over the plan supplied if desired by the Engineer-in-Charge of the work.
- 25 Any Damage done to the building during the execution of electrical work shall be made good immediately at his own cost to the entire satisfaction of the Engineer-in-Charge.
- 26 The connections, inter-connections, earthing and inter-earthing shall be done by the contractor wherever required to be done for energization of the installation and nothing extra shall be paid on this account.
- 27 General arrangement drawing of Meter Panel shall be got approved before fabrication work starts. Drawing with details shall be submitted to the Engineer-in-Charge and got approved before fabrication.
- 28 Cable route and pole locations shall be marked in drawing / site and got approved by the Engineer-in-charge or his representative before commencement of work.

QUALITY ASSURANCE PLAN & CHECKLIST FOR E&M SERVICES

1. Main contractor/ Associate Agency shall submit the required quantity of material as sample for testing from Govt./ Approved Private Laboratory.
2. The decision on testing shall be as per E&M quality checklist of CPWD vide OM no. 51(4)/CE(E) /CSQ/2016/293(H) dated 31/03/2016 as applicable or as per direction of E-in-C and shall be binding on contractor.
3. Contractor shall submit the required size and quantity of samples for the testing. Department shall send the samples to the testing laboratory & the test results shall directly come to department however the cost of all testing shall be borne by the Contractor. If in case the materials fail the test in that case the contractor shall remove the materials from the site and supply the new materials at his own cost.

Annexure-A

A- Internal EI								
Stage / Sl no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacturer works	At third Party Lab.
1	LT Panels with ACB	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Any	Y	Y	100%	Y	N
2	LT Panels with incommen of more than 200 A	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Up to 2	Y	Y	0	N	N
			>2 and < 10	Y	Y	1	Y	N
			>10	Y	Y	2	Y	N
3	Rising Main and Bus Trunking	CPWD specs part IV/QA Plan	Length upto 500 mtr	Y	Y	10% length and fittings	N	N
			Length > 500 mtr	Y	Y	10% length and fittings	Y	N
4	Rigid MS Conduit	IS 9537 Pt I & 2	up to 2500 mtr	Y	N	N	N	N
			>2500 mtr	Y	Y	1 piece of 1 mtr for every 1000 mtr	N	Y

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

Stage / SI no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacturer works	At third Party Lab.
5	Rigid PVC Conduit	IS 3419 :1989	up to 2500 mtr	Y	N	N	N	N
			>2500 mtr	Y	Y	1 piece of 1 mtr for every 1000 mtr	N	Y
6	Cable Tray	CPWD Spec. Part-I/II: Check for perforation area, paint/Galvanising thickness and Material Composition	Length upto 500 mtr	Y	Y	N	N	N
			Length > 500 mtr	Y	Y	One piece for every 500 Mtr	N	Y
7	DWC/ Corrugated HDPE Pipe	IS 14930 , Check for thickness, material, Mechanical Strength and smoothness	Length upto 500 mtr	Y	N	N	N	N
			Length > 500 mtr	Y	Y	One piece for every 500 Mtr	N	Y
8	Wire	IS 694:1990	up to 10000 mtr	Y	N	N	N	N
			>10000 mtr	Y	Y	1 piece for every 10000 mtr or less	N	Y

Y Stands Yes

N Stands No

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

B- Street /Compound Lighting								
Stage /SI no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacture works	At third Party Lab.
1	LT Panels with ACB	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Any	Y	Y	100%	Y	N
2	LT Panels with incomer of more than 200 A	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Up to 2	Y	Y	0	N	N
			>2 and < 10	Y	Y	1	Y	N
			>10	Y	Y	2	Y	N
3	Poles	Whether in conformity with tender specs	up to 100	Y	Y	N	N	N
			>100	Y	Y	2%	Y	N
4	LT Cable	IS 1554 Part I	up to 2500 mtr	Y	N	N	N	N
			>2500 mtr	Y	Y	1 piece for every 2500 mtr	N	Y
5	DWC/ Corrugate d HDPE Pipe	IS 14930 , Check for thickness, material, Mechanical Strength and smoothness	Length upto 500 mtr	Y	N	N	N	N
			Length > 500 mtr	Y	Y	One piece for every 500 Mtr	N	Y
6	Fittings	Whether in conformity with tender specs	>100	Y	Y	NA	N	N

C- Sub Station, DG Set, UPS								
Stage /Sl no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacture works	At third Party Lab
1	HT Panel	CPWD specs part IV/QA Plan: CT ratio and accuracy Class should be invariably checked	Any	Y	Y	1	Y	N
2	HT Panel: metering and protection devices	Check CT ratio and accuracy Class , Relays and Meters	Any	Y	Y	1	Y	N
3	LT Panels with ACB	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Any	Y	Y	1	Y	N
4	LT Panels with incomer of more than 200 A	CPWD specs. part IV/QA Plan: Construction, Ratings of SWG, air gaps between phases , phase to body ,IP rating, Short Circuit ratings etc.	Up to 2	Y	Y	0	N	N
			>2 and < 10	Y	Y	1	Y	N
			>10	Y	Y	2	Y	N
5	Capacitor Panel	CPWD specs part IV/QA Plan: Check for type of capacitors used, operation of relay, settings. Change the load and its type and check functionality	Any	Y	Y	1	Y	N
6	Rising Main and Bus Trunking	CPWD specs part IV/QA Plan.	Length upto 500 mtr	Y	Y	10% length and fittings	N	N
			Length > 500 mtr	Y	Y	10% length and fittings	Y	N

Correction...Nil Deletion... Nil Insertion...Nil Over writing... Nil Ch. Estt (E) AE (E)AE (C) EE(P)

Stage / SI no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacture works	At third Party Lab
7	Cable Tray	CPWD Specs. Part I/II: Check for perforation area, paint/Galvanising thickness and Material Composition	Length upto 500 mtr	Y	Y	N	N	N
			Length > 500 mtr	Y	Y	One piece for every 500 Mtr	N	Y
8	DWC/ Corrugated HDPE Pipe	IS 14930 , Check for thickness, material, Mechanical Strength and smoothness	Length upto 500 mtr	Y	N	N	N	N
			Length > 500 mtr	Y	Y	One piece for every 500 Mtr	N	Y
9	Transformer	CPWD Specs. Part IV/QA Plan: Physical verification of accessories as per agreement and Routine tests as per IS:2026/IS 11171:1985(which ever applicable), with particular attention to losses meeting ECBC norms / as per agreement, Type test certificate for exact same design for impulse withstand and short circuit withstand shall be made available by Manufacturer , Temperature rise test of one transformer of each design shall be done. Copies of the certificate for pressure test, test for bushings shall be supplied to the department.	Any	Y	Y	100%	Y	N

Stage /SI no	Material / Process	Standard Applicable/ Test Required to be Done	Total Qty (each type) reqd. in agreement or lot size whichever is less	Whether Proof of Dispatch required	Whether Manufacturer's test certificates required	Sample Size	Location of Test	
							At manufacture works	At third Party Lab
10	DG set	Load testing as per CPWD specs	Any	Y	Y	100%	Y	N
11	UPS	Load testing and operation logic as per CPWD specs , Check for input and output power quality as per agreement	Any	Y	Y	100%	Y	N
12	HT Cable	IS 1554 Part II	Up to 500 mtr.	Y	Y	I	N	N
			>500 mtr	Y	Y	1 Piece for every 500 mtr	N	Y
13	LT Cable	IS 1554 Part I	up to 2500 mtr	Y	N	N	N	N
			>2500 mtr	Y	Y	1 piece for every 2500 mtr	N	Y

Y* Tested for its capacity at AHRI Certified test bed (either at manufacturer's work or at Third Party)

4. QUALITY ASSURANCE PLANS :

Internal Electrical Installations:

- The detailed instructions on safety procedures given in BIS code no. 5216:1982 "Code of safety Procedures and Practices in Electrical works" shall be strictly followed.
- Safety procedures given in Chapter 10 of CPWD General Specifications for Electrical works Part-1 (Internal) shall be followed.
- Safety recommendation as per IERules 1956 as per Appendix "C".
- The materials shall be tested from 3rd Party laboratories are conduit, wires, cables etc. as per QA.
- Providing and fixing of conduit work as per CPWD Specifications.
- No. of wires in one conduit shall be as per CPWD Specifications.

- vii) Colour coding of the wires are to be ensured.
- viii) Lugs and thimbles at cable/ wire ends in switch boxes as per CPWD Specifications.
- ix) Labeling of switch boxes & DBs shall be ensured.
- x) Termination of earth terminals in earth pits, switch box, DBs and accessories to be ensured. Earth chamber to be constructed and proper marking to be done.
- xi) A comprehensive schematic diagram is prepared starting from the main board up to the final DBs. All such boards are duly marked and numbered.
- xii) The pre-commissioning testing of the installation shall be carried out such as Insulation resistance test.
- xiii) Polarity test of switch. Earth continuity test.
- xiv) Earth electrode resistance test.
- xv) All the tests at site shall be carried out for the completed installations, in the presence of and to the satisfaction of the Engineer in Charge by the contractor. All the test results shall be recorded and a copy of the same shall also be submitted to the Department.
- xvi) On completion of an electrical installation (or an extension to an installation), a certificate shall be furnished by the electrical contractor, countersigned by the certified supervisor under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as given in Appendix "E" of CPWD General Specifications for Electrical Works Part-1 (Internal) in addition to the test certificate required by the local electric supply authorities.
- xvii) Contractor shall keep constant liaison with the local municipal authority, Fire service Department of Assam, Central Electricity authority, National Green Tribunal, Assam Power Distribution Company Limited (APDCL), Pollution Control Board, Assam and all other statutory authorities etc, whose approvals and permissions are required before, during course of execution and after execution of the work. Contractor shall make all expenses related to these approvals and shall be responsible for time bound approvals. No extension of time shall be given if the approvals are delayed on the side of the contractor. Any payment made by contractor to statutory authorities shall be reimbursed on production of the vouchers.

WILLINGNESS CERTIFICATE

Name of Work: - "Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati."

NIT No.: ____/NIT/CE/GHY/2026-27

I hereby give my willingness to work as an 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 for the works. I will attend inspection of officers of the department as and when required.

Date:

Signature of Associated Contractor

MEMORANDUM OF UNDERSTANDING [M.O.U] BETWEEN

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]

[Henceforth called the Associated Contractor]

Name of Work:- “Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”

NIT No. : ____/NIT/CE/GHY/2026-27

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act [amended up to 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. Only Main Contractor shall be paid consequent to the execution of this sub-head as per agreement. In case of any dispute, either of us will go for mediation by the Superintending Engineer. However Only Main Contractor may appeal against the mediation/arbitration before the designated authority. His decision shall be final and binding on both of us.

We have agreed as under:

- 1]** The associated contractor will execute the sub head in the wholesome manner as per terms and conditions of the agreement. Payment of the associated contractor shall be given by main contractor.
- 2]** The Main contractor shall be liable for disciplinary action and other legal action as per agreement besides forfeiture of the security deposit if the associated firm fails to discharge the work as per the terms and conditions of the respective sub-head of the agreement.
- 3]** All the machinery and equipment, tools and tackles required for execution of the sub head works, as per agreement, shall be the responsibility of the associated contractor.

- 4] The site staff required for the subhead work shall be arranged by the associated contractor as per terms and conditions of the agreement.
- 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 the work shall be done by the Department with the Main Contractor with a copy to the Associated Contractor. In case of non-compliance of the provisions of agreement, the main contractor shall be responsible. The action under clauses 2 and 3 shall be initiated and taken against the main contractor.

SIGNATURE OF MAIN CONTRACTOR

SIGNATURE OF ASSOCIATED
AGENCY/OEM

Date :

Date :

Place :

Place :

COUNTERSIGNED

Executive Engineer (E)
Guwahati Electrical Division
CPWD, Guwahati – 781021

FORM OF COMPLETION CERTIFICATE

[Clauses 1.26]

I/We certify that the installation detailed below has been installed by me/us and tested and that to the best of my/our knowledge and belief it complies with Indian Electricity Rules, 2003, as well as the C.P.W.D. General Specifications of Electrical Works 2023.

Electrical installation at.....

Voltage and system of supply.....

I. Particulars of work:

(a) Internal Electrical Installation

	No.	Total Load	Type or system of wiring
(i) Light point			
(ii) Fan point			
(iii) Plug Point			
(a) 3 pin 5 Amp.			
(b) 3 pin 15 Amp.			
(b) Others	Description	HP/KW/	Type of Starting

(a) Motors:

(i)

(ii)

(iii)

(b) Other plants:

(c) If the work involves installation of overhead line and/or underground cable.

(d) (i) Type & description of overhead line.

(ii) Total length and no. of spans.

(iii) No. of street lights and its description.

(e) (i) Total length of underground cable & its size.

(ii) No. of joints:

End joint:

Tee joint:

St. through joint:

II. Earthing

(i) Description of earthing electrode.

(ii) No. of earth electrodes.

(iii) Size of main earth lead.

III. Test results:

(a) Insulation resistance

(i) Insulation resistance of the whole system of Conductors to earth – Megaohms

(ii) Insulation between the phase conductor and neutral
Between Phase R and neutral – Mega ohms
Between Phase Y and neutral – Mega ohms
Between Phase B and neutral – Megaohms

(iii) Insulation resistance between the phase conductors in case of polyphase supply.

Between Phase R and Phase Y – Mega ohms

Between Phase Y and Phase B – Mega ohms

- Between Phase B and Phase R — Mega ohms
- (b) Polarity test
Polarity of linked single pole branch switches.
- (c) Earth continuity test
Maximum resistance between any point in the earth continuity conductor including metal conduits and main earthing lead.....Ohms
- (d) Earth electrode resistance
Resistance of each earth
Electrode
- | | |
|-------|------|
| (i) | Ohms |
| (ii) | Ohms |
| (iii) | Ohms |
| (iv) | Ohms |
- (e) Lighting protective system
Resistance of the whole of lightning protective system to earth before any bonding is effected with earth electrode and metal in/on the structure Ohms.

Signature and name of
the Junior Engineer (E) /AE (E)

Signature and Name of
Contractor

**ADDITIONAL CONDITIONS AND
SPECIFICATIONS FOR THE WORK OF
ELECTRO-MECHANICAL INSTALLATIONS**

C-1

INTERNAL&EXTERNAL ELECTRICAL INSTALLATION

1.1 Scope of work: -

- 1.1.1 It includes internal Electrical works of all the buildings and ancillary buildings as well as external Electrical installation of the entire campus as per approved drawings and as per schedule of work including all materials, manpower, testing, inspections, obtain approval from competent authority central, state, local bodies and commissioning in all respects for successful operation/ utilization in true sense and handed over to end user in complete shape and to be maintained up to defect liability period as mentioned in the bid documents. However, bidder has to submit the drawings and design and get corrected if any and take approval of drawings and materials from Engineer-in-charge of E&M components before execution of work.
- 1.1.2 The wiring of all the buildings proposed in this work i/c lift shaft, machine room wirings and entire external electrifications i/c power distribution to buildings complete as required as per manner mentioned in respective specification of package and as per schedule of work enclosed along with Bid document.
- 1.1.3 The work shall be carried out as per CPWD General Specifications of Electrical Works Part- I (Internal) 2023, Part-II (External) 2023, Part-IV (Sub-station) 2013 as amended up to date, relevant IE rules.
- 1.1.4 All wirings shall be carried in recessed Medium duty PVC conduit (ISI marked) having **Cross- Linked HFFR/ FRLSH Copper conductor (class-2) wires/cables (ISI marked) wires/cables (ISI marked)** of suitable size i/c earthing wire. The wiring shall be carried out loop-in system. The switch-socket, and other accessories shall be modular type and to be installed on G.I. modular boxes (1.6 mm thick) of required modules.
- 1.1.5 TV wiring (RG-6) Cable, Cat-6/6A Cable /telephone cable shall also be **Cross-Linked HFFR/FRLSH Copper conductor (class-2)** as required for EPABX / Data networking cable shall be drawn in suitable size **medium duty PVC conduit**. Wherever required, hot Dip Galvanized GI Cable trays (perforated) cable tray / DLP trunking may also be used.
- 1.1.6 All internal as well as external light shall be LED type, based on required lux level and design and specification mentioned in the schedule of work. Ceiling fans, exhaust fans etc. should be of highest star rating, wherever available. However, Ceiling fans should be regulator type BLDC, 5 star rating and ISI marked. The LED fittings and fans shall be got approved from the Engineer-in-charge before placing the order.
- 1.1.7 In multi standard cables shall be terminated on the ends with copper lugs/ thimbles of suitable size.
- 1.1.8 Earth wire as per CPWD specification for electrical work, part-I (Internal-2023), shall be drawn along with other wire in recessed/ surface heavy duty PVC conduit system.
- 1.1.9 'Power' wiring shall be kept separate and distinct from light wiring, from the level of

circuits, i.e., beyond the branch distribution boards. Conduits for light/power wiring shall be separate.

1.1.10 Conduit carrying submain will not carry circuit/point wiring. Similarly, conduit carrying circuit wiring will not carry submain/point wiring. Conduit carrying point wiring will not carry submain/circuit wiring.

1.1.11 Essential/non-essential/UPS distribution each will have a completely independent and separate distribution system starting from the main, switchboard upto final wiring for each system. As for example, conduit carrying non-essential wiring shall not have essential or UPS wiring.

1.1.12 Wiring for essential and UPS supply will have their own conduit system. No mixing of wiring is allowed.

1.1.13 No switchboard will have more than one source of incoming supply. More than one incoming supply will be allowed only at main board with proper safety and interlocking so that only one source can be switched on at a time.

1.1.14 Fish wire shall be provided in each conduit where wiring is not carried out.

1.1.15 **Earthing :-**

- a) Earthing materials w.r.t. weight and size shall be checked at site.
- b) Termination of earth terminals in earth pits, switch box, DBs and accessories to be ensured. Earth chamber to be constructed and proper marking to be done.
- c) Earth electrode resistance to be tested and recorded.
- d) Earth continuity.

1.1.16 **Cabling :-**

- a) Cable to be tested from 3rd party lab for meeting the relevant BIS and CPWD Specifications.
- b) The cable drums shall be stored properly to avoid damages.
- c) The cable route drawing shall be approved by Engineer-in-charge.
- d) Laying of cable including bends as per CPWD Specifications and necessary protection shall be provided as per agreement.
- e) The cable shall be tested for continuity and insulation resistance before laying as well as before covering.
- f) Extra loop cable shall be provided on each terminal end of the cable and joints.
- g) Suitable protection shall be provided for road crossing and cable entry to the building.
- h) Route marker shall be installed.
- i) Lugs and thimbles at cable/ wire ends in panels as per CPWD Specifications.
- j) Cables shall be tested after laying as per CPWD Specifications.
- k) Cables laid on cable trays to be provided with suitable marker tags for cable identification.

1.1.17 **Cable Tray:-**

- a) Material to be tested in 3rd party laboratories.
- b) Visual inspection for dimensions & perforation area shall be done.
- c) Fastener & rods of adequate size and strength.
- d) Factory fabricated bends, reducer, tee/cross junctions shall be provided.
- e) Cable tray shall be earthed at both ends.
- f) Proper painting to be ensured.

- 1.1.18 Pre commissioning test such as phase sequence test, polarity test, Hi-pot test and earth resistance test shall be done at site before commissioning the installations.
- 1.1.19 Setting of relays, timers, meters, interlocking (mechanical & electrical) etc., selection of tap of CTs in HT & LT Panels as required.
- 1.1.20 The line diagram including schematic scheme and operation logics will be made and displayed in Sub-Station as well as control room.
- 1.1.21 Shock treatment chart & safety equipment, insulating mats, etc. to be appropriately placed.
- 1.1.22 **Street/ Compound Lighting :-**
 - (i) Proper alignment of poles to be ensured.
 - (ii) Cables to be laid as per CPWD Specifications.
 - (iii) Makes and models of poles/ luminary shall confirm to technical specifications etc. as per agreement and shall be got approved from the Engineer-in-Charge before placing the order.
 - (iv) Photometry test of each type of luminary shall be conducted at manufacturer's works.
 - (v) Cables, Feeder Pillar & Earthing shall be done as per sub-station section.
 - (vi) Display of Schematic in control room as well as feeder pillars includes operations and logics etc.
 - (vii) Poles shall be tested at manufacturer's works for the following tests :-
 - a) Tensile test,
 - b) Deflection test,
 - c) Permanent set test,
 - d) Drop test.
 - e) Visual inspection for dimensional check & finish.

C-2

FIRE FIGHTING SYSTEM

1. The work shall be carried out as per CPWD General Specifications for Wet riser & Sprinkler System (Part-V) 2020 as amended and corrected up to date, CPWD General Specifications of Electrical Works Part-I 2023 as amended and corrected up to date, Part-II (External) 2023 as amended and corrected up to date, relevant IE rules, IS standard, NBC 2016 amended and corrected up to date, NFPA 2013, IBC (International Building Code). **Contractor will submit the Fire recommendation from Local Fire officers before carrying out the Fire Fighting work and will submit the Fire NOC after completion of the work for handing over to the client department as official record.** The work shall be deemed to be completed only after receiving NOC from the Authority mentioned above. Statutory fee if any shall be paid by the contractor. Enabling all liaising work, arranging inspection of the local body shall be within the scope of the contractor. The contractor shall follow the following guidelines while designing and executing the work:

- NBC 2016 (India), Part 4 (Fire and Life Safety)
- NFPA 13 (Sections 11.3.3.1, 8.15.4.3.2)
- IBC 705.8.2 (International Building Code)

Scope of work include preparation of drawings, supply, installation, testing and commissioning of Downcomer system / supply of different motor pump set having higher efficiency highest BEE star rating, Multistage Terrace pump, piping networks and its necessary accessories, valves, hydrant (Internal & external), Hose pipe, Hose reel, GM Branch pipe, nozzle, fire service inlet, fire service connections, fire brigaded draw out collecting head, Air vessels, pressure gauge, pressure meter, Electrical Panel, cabling, earthing etc. complete as required to make the system fully functional. Approval from state fire department, handing over to client department in working conditions. In addition to above, portable fire extinguisher (ABC and CO₂) type shall also be installed at site.

2. The distribution pipe to be laid as per the relevant IS code and CPWD Specification Part V (Wet Riser & Sprinkler system) 2020 as amended and corrected up to date.
3. The provision of sleeves in the beams shall be kept for running the distribution range pipe if required.
4. **TECHNICAL SPECIFICATIONS: -**
 - a. **Down Comer System:** Type, rating, material construction accessories & installation work shall be as per schedule of work & relevant chapter of General specifications for electrical works Part- V (wet riser & sprinkler system) 2020, amended to date.
 - b. **Fire Extinguisher :** The same shall be supplied and installed as per relevant BIS.
 - c. **ELECTRICAL WORKS :** Electrical works associated with this work namely motors, switch boards, power cabling control wiring, earthing etc. shall be as per schedule of work & General specifications for electrical works. Part – I (Internal) 2023, Part II (External) 2023, Chapter 10 of Part – V 2020 amended to date.

LIST OF MATERIALS OF PREFERRED MAKE (ELECTRICAL WORK)

The materials of first/standard quality from the following preferred makes are to be used. In case it is established that the brands specified below are not available in the market, contractor shall submit alternative proposal to Engineer-in-Charge for the approval of NIT approving authority.

SN	List of Materials	Approved Make.
1.	FRLSH PVC insulated copper wire /Power cable / XLPE Cable / Telephone cable/ Coaxial cable / TV cable	Havells / KEI / Finolex/RRKabel / Polycab
2.	Communication cables	Beldon / Molex / Legrand / Commscope / Avaya / Amp/ Derwiser/ 3C3
3.	PVC Conduit (ISI Marked) with PVC conduit pipe accessories	BEC / AKG / Norpack / Precision/Welkm
4.	Modular Type Switch/Socket /Fan Regulator/Telephone Socket/ TV Socket/ Bell Push and GI Boxes etc (Same make GI Box and wiring accessories)	Legrand (Myrius Nextgen+)/ Schneider (LIVIA) / ABB(Tvisha) / Honeywell (Blenze Pro) / Havells (Murano)
5.	MCB/RCBO/Isolator /RCCB	Legrand(DX3) / Siemens (Betagard) / Lauritz Knudsen / (Schneider (Acti-9)/ ABB (SB-200M)/C&S(Wintrip)
6.	MCB DB's (Same make MCB DB and MCB's)	Legrand (Ekinox-3) / Siemens (Betagard) / Schneider (Acti-9) / ABB(Itus)/ C&S(Epitom)/ LK (L&T Exora)
7.	MCCB's	Legrand (DPX3) / Siemens (3VA) / LK (L&T) (D-sine) / LK (L&T) (D-sine) / ABB(XT) / C&S (Winbreak 1/2) / Schneider (NSX)/ C&S(Winbreak-I/II)
8.	ACB's	Legrand (DMX3)/ Siemens (3WA) / LK (L&T) (Omega -U power) / ABB (Emax2) / C&S (Winmaster3) / Schneider (MTZ)/
9.	LED Fittings/Compound light/ Street light/Post top Lantern/ Flood Light	Philips / Lighting Technology / Havells / Wipro / Crompton/Jaquar
10.	Ceiling fan/ Exhaust fan/Fresh air fan	Khaitan / Crompton/ Havells/ Orient / Usha
11.	GI Hot Deep Cable trays (perforated)	BEC / RMCON / Apex / Slotco / Steelways / Pilco / AKG / Indiana
12.	DLP Trucking / Floor Trunking (UPVC / GI)	Legrand / Schneider / MK/ OBO-Betterman
13.	Occupancy sensor for Light Control	ABB / Honeywell / Schneider / Siemens / Hager / Lutron.
14.	Decorative Ornamental Powder Coated metallic pole and fittings	K-lite / Bajaj/ Home Décor/ Hi-lite/ Jaquar/Havells/Crompton
15.	G.I. Octagonal Pole	Bajaj / Transrail / Valmont/ Crompton/ Nezone /B.P. Project/ Utkarsh/Hilite
16.	Weather proof Junction box	Hensel/ OBO Bettermann/ Cape Spelsberg/ Rittal/ Anchor/ Havells
17.	Cable lugs & Glands	Comet/Dowells/Gripwel/Raychem
18.	Fire Pumps	Grundfos/Kirloskar/Wilo/Beaconwier/ Xylem Mather&Platt
19.	Pressurization(Jockey Pump)	Grundfos/Kirloskar/Wilo/Beaconwier/ Xylem Mather&Platt
20.	Diesel Engine for Fire Pump	Cummins/ KOEL/ Caterpillar/Perkins /Ashok Leyland/ Mather&Platt/ Greaves
21.	Terrace Pump	Grundfos/Kirloskar/Wilo/Beaconwier/Xylem Mather&Platt

22.	ElectricMotors	Siemens/Kirloskar/Crompton/ ABB/Bharat Bijlee/ Mather&Platt/ Stamford.
23.	Anti-VibrationMounting	Resistoflex / Dunlop / Easy flex / Vimpa Flexionics
24.	Starters	Siemens/LK(L&T)/ABB/Schneider/Merlin Gerin/BCH.
25.	SluiceValve(ISI marked)	SANT/Kirloskar/Kartar/Audco/ Zoloto
26.	Gunmetal-GateValve/NRV(ISI marked)	SANT/Kirloskar/Kartar/Audco/ Zoloto
27.	CISluiceValve(ISI marked)	SANT/Kirloskar/Kartar/Audco/ Zoloto
28.	Valves/CheckValves(ISI marked)	SANT/Kirloskar/Kartar/Audco/ Zoloto
29.	ButterflyValve/ Air Release Valve(ISI marked)	SANT/Kirloskar/Kartar/Audco/ Zoloto
30.	Y-type Strainer	SANT/Kartar/Leader/Advance/Audco/ Zoloto/ Atasee
31.	GIPipes/ MS Pipes	Jindal(Hissar)/TATA/Sail (ISI Marked)
32.	Pressuregauge	HGuru/Fiebig / Danfoss/ Indfoss / Emerald
33.	HydrantValve	Life Guard / Minimax / Armor fire / Safeguard/Fire Shild/ Kartar / Atasee
34.	BranchPipe	Life Guard / Minimax / Armor fire / Safeguard /Kartar / Atasee
35.	DrumofHoseReel	Life Guard / Minimax / Armor fire / Safeguard /Fire Shild/ Kartar/ Atasee
36.	HoseCoupling	Life Guard / Minimax / Armor fire / Safeguard/Fire Shild/ Kartar/ Atasee
37.	FireHosePipe/ Hose Box	Life Guard / Minimax / Armor fire / Safeguard/ Fire Shild /Kartar/ Atasee
38.	First-AIDRubberReel	Life Guard / Minimax / Armor fire / Safeguard/ Fire Shild /Kartar / Atasee
39.	FirstAidHoseReel	Life Guard / Minimax / Armor fire / Safeguard/ Fire Shild/ Kartar / Atasee
40.	2way/4wayFBC	Life Guard / Minimax / Armor fire / Safeguard/ Fire Shild/ Kartar / Atasee
41.	SprinklerHeads	NewAge/Minimax / Armor fire / Fire shield / Tyco/HD.
42.	AlarmControlValve	HD/Omex/Viking/Tyco
43.	AnchorFastener	Fischer/Hilti/OBO
44.	FireExtinguisher	CeaseFire / Fire shield / ASES / Minimax/ Safex/ Life Guard / Atasee
45.	Pressure Switch	System Sensor/ Indfoss/Danfoss / Honeywell / Viking.
46.	LED signage	Hochiki/ Cooper lighting & Safety/ ASES / Aldo LED/ Bajaj / K lite.
47.	Pipe protection pypcoat (Aw4)wrapping	IWL/ Taxa/ Mac-polycoat
48.	Automatic fire Alarm system- SmokeDetectors/ optical cum ThermalDetectors/ ThermalDetectors/ ManualcallPoints/ Main FireAlarmControlPanelwithBattery Backup/Repeaterpanel/MimicPanel/ MonitorModule / ControlModule/ Responseindicator/ LowIntensityHooters	<u>Automatic fire Alarm system-</u> Siemens-Cerberus/ Bosch / ASES / Honeywell – Notifire / Edwards-EST3 <u>Manual Fire Alarm system</u> – ASES / System Sensor/ Appllo
49.	Public address components like amplifiers, gooseneck microphone, speakers	Bosch/JBL/ Crown / ASES / Honeywell

50.	Speaker cable	Krystal / JAD/ Belden/ DAC/ Monster
51.	Wall Mount Rack	Valrack / Rittal/APC/APW
52.	Lift	The OEM shall be selected as per guideline of CPWD vide DM No: DG/ SE(E)/TAS/ PPP- MII order/22 dt; 28/09/2020. The agency has to give at least 3 options of OEM as per above guidelines for lift and the department has right to select any one of them.
53.	Transformer	Shree Sai Electrical / Technovel / Prag / Power Maker-II / Raychem RPG Pvt. Ltd
54.	HT Panel	ABB/ Crompton/ Schneider-Electric/ Siemens/Mariana/LK(L&T) (Panel Shall be tested at OEM manufacturing plant)
55.	MVPanel Fire Fighting Panel /Outdoor feeder pillar / Street light panel/ VRF panel/ Pump panel/ Meter panel etc.	Siddhi Vinayak Power Solution / Brahmaputra Power & Control / Amit Project Powers & Controls/ Precision System Control/ R. P. Control / Kratos (The manufacturer must have CPRI test certificate of appropriate rating not older than 5 years from the date of call of tender)
56.	APFCRelay/Reactor/Thyristor module	LK (L&T)/Enercon/Siemens/SchneiderElectric
57.	Capacitor	LK (L&T)/Legrand /Siemens/ABB/ Schneider
58.	Sandwichbusductandaccessories(RisingMain/ Bus-duct)	Schneider /C & S/Legrand/ LK(L&T)/ ABB
59.	Buscoupler	SamemakeasACB
60.	RubberMat	Tata rubber/padam prabhu/Voltech India/ Jyoti/ Vardhman
61.	Multifunctionmeter/Digital Ammeter/ Voltmeter	Schneider/Conzerve /LK(L&T)/ Sceure/AE/ ABB/ Siemens
62.	SelectorSwitches	Kaycee/ LK(L&T)/AE/Legrand/Salzer/ Rass Control/ C&S
63.	CurrentTransformer, Potential transformer	AE/Kappa/L&T/ ABB/Siemens
64.	IndicatingLamp/PushButton/LED	LK(L&T)/RaasControl/Schneider/ C&S/ ABB/Siemens
65.	Contactors,Relays,Timer	LK(L&T)/Siemens/ABB/Siemens
66.	Lugs/Thimble	Dowell's/Comet/Braco /Raychem / Johnson
67.	CableGland/Termination	Dowell's/Comet/Braco /Raychem / Johnson
68.	DWC / HDPE PIPE	Sudhakar/ Finolex/ REX/ VIJAY /Ashirvad Precision/ Supreme / Astral/Sri Tulsi
69.	Dieselengine	Cummins/KOEL/Caterpillar/Perkins /TATA / Ashok Layland
70.	Alternator	Stamford/LeroySomer/CromptonGreaves/ Kirloskar/ Cooper
71.	DG set	OEM/OEA of above Makes of Diesel Engine.
72.	AMF panel	OEM / OEA of Diesel engine
73.	AcousticEnclosure	OEM / OEAOofDGSet
74.	AntiVibrationsMountings	Resistoflex / Dunlop / Easy flex / Vimpa Flexionics / Emerald.

75.	BatteriesforDGSet/ UPS	Exide/AmaraRaja/Amaron
76.	UPS	Schneider (APC)/ Numeric / Vertiv /Delta/Toshiba/ Power One
77.	Battery Mounting Rack	As per OEM of UPS
78.	CCTV Camera	Tyco/Bosch/ Honeywell (35/50 Series) (STQC Certified)
79.	NVR	Tyco/Bosch/ Honeywell (35/50 Series)
80.	All hardware's for CCTV Surveillance system	Tyco/Bosch/ Honeywell (35/50 Series)
81.	Professional Display	Panasonic / Sony/LG / Samsung
82.	OFC cable	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
83.	OFC Patch Cord and LIU	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
84.	Cat 6A / CAT 6 UTP cable	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
85.	Patch Panel	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
86.	CAT6A / Cat 6 UTP Patch Cord	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
87.	I/O Box and Face Plate	Beldon / Molex / Legrand / Commscope / Avaya / Amp / Derwiser/3C3/JAD
88.	Wall Mount Rack	Valrack / Rittal/APC/APW
89.	POE switches Layer 2/3	Cisco/Juniper/Arista/Allied Telesis
90.	Wi-Fi Access Point	Cisco/Juniper/Arista/ Allied Telesis
91.	Workstation	IBM / Lenovo / Dell / HP
92.	Solar PV Module	MNRE approved.
93.	ACDB & DCDB	As per OEM
94.	String combiner Box(S.C.B)/ String Monitoring Box	Solaris/Geeysys/ Hensel/ Syntex / Hensel / Statcon
95.	Data Logging system with remote monitoring	Statcon / Solaris / Dataglen / Aeron / Vortex
96.	P.C.U (Power Conditioning Unit)(Solar inverter)	Delta / Siemens / A.B.B / S.M.A (Germany) / Schneider-Electric / Havells
97.	Solar Water Heater	Racold / Tata solar/ Bosch/ V-Guard – MNRE Approved solar panel
98.	Insulation of Hot Water Pipes	K-Flex/ Armaflex/ Thermaflex
99.	Material for structure	Tata/Jindal Hissar/Sail
100.	Hydro Pneumatic Pump set	Grundfos/ Kirloskar / Mather & Platt / KSB/ Wilo /Xylem/Beacon
101.	Motorized Solenoid Valve	Advance/ Honeywell/ Belimo/ Danfoss
102.	Butterfly Valve/ Balancing Valve/ Isolation Valve/ Gate Valve/ Non-Return Valve etc. all other Valves	Belimo/Kirloskar/Advance/Audco/ Zoloto/Castle/Victaulic
103.	Liquid Level Controllers/ Indicators	Minilec/ Radar/ Advance/ Famac/ Switzer
104.	PLC system	Schneider/ Siemens/ ABB/ GE/ Honeywell/ Mitsubishi
105.	GI/MS/SS pipes (IS: 1239 and IS:3589)	TATA/Jindal Hissar/ SAIL
106.	GI/MS/SS pipes Fittings	Pot/Unik
107.	PVC Pipe Sch80/Sch40	Astral/Supreme/Finolex
108.	GM/ForgedBrassBallValves	Intervalve /Audco/Sant
109.	Sluice Valves	Kirlosakar/Ivc/Sant/Leader/Audco
110.	ButterflyValve	Audco/Intervalve/Bray/Sant
111.	WaferTypeCheckValve	Advance/Intervalve/Bray/Sant
112.	MultiportValve	Pharar(U.S.A)/Flack(U.S.A)/Initiative/Av entura
113.	IsolationBall/Gate/GlobeValve	Sant/Hawa/Honeywell/Lehry
114.	AirReleaseValve	Sant/Watts/Studor/Honeywell

115.	Y Strainer	Honeywell/ Emerald/ Sant / Vtm/Audco (LK)/Kirloskar
116.	SubmersiblePumps	Grundfos/Xylem/Wilo/Ebara/Pullen/KSB / Kirloskar
117.	SludgePumps/MBR feed pumps and other pumps	Johnson/Wilo/Ebara/Grundfos/ KSB/ Kirloskar
118.	Mixer	Wilo/Grundfos/Xylem
119.	ClearWaterPumps&HSCFPumps	Grundfos/Xylem/Suzler/Kirloskar/KSB
120.	Centrifuge	AlfaLevel/Hiller/Humbolt/ADINOTech nologies
121.	MechanicalSeal	Burgmann/Sealol
122.	AntiVibrationMounting	Dunlop/Resistoflex/Easyflex
123.	PressureGauge	Waree/Baumer/Ashcroft
124.	WaterMeter(MechanicalType)	Actaris.Capstan–Woltman/Kranti
125.	ElectromagneticFlowMeter	Emerson/E&H/Siemens/Jumo
126.	PressureTransmitter	Siemens/Emerson/E&H/Jumo
127.	DOTransmitter	Emerson/ABB/E&H/Hach
128.	TurbidityTransmitter	Emerson/ABB/E&H/Hach
129.	LevelSwitch/controller	Pune Techtrol/Nolta/ Jumo
130.	LevelIndicator	Levcon/Pune Techtrol/cirrus
131.	Paints	AsianPaints/Berger/ICI/Jotun
132.	F.R.PPressureVessel	Pentair/Structural/EquivalentFabricated
133.	UVunit	AlfaUV/Wallance&Tiernan/Aquatech/Su krut
134.	MBRModules	Toray/GE/Kubota/Ovivo / Hydronautics/ Coke Membrane/ Alfalaval
135.	DosingPumps	MiltonRoy/prominent/Grundfos/Kirloskar /KSB
136.	MSEPFILTERVessel	OEMFabricated
137.	MechanicalScreen	Ovivo/Aquaseptence/Jash/Auric
138.	HDPE Tanks	Reno/Sintex/Infra
139.	AirDiffusers	Ovivo/OTT/EDI
140.	AirFlowRotameter	EurekaInd/Aster/Tansa
141.	HDPEPipe	Noble/Reliance/ Astral / Supreme / Ashirvad
142.	FilterPress	Pharma/Royal/Thorat/Sachin/ADINOTec hnologies
143.	ScrewPumps/Filter Press feed pumps	Rotomac/Alfa/Roto/Minimax/Helyflow
144.	Agitator	Remi/Fluidyme
145.	AirCompressor	IngersolRand/ELGI
146.	ElectricalActuatorsValves	Cair/Jonson/Auma/Honeywell
147.	AirBlower	Aerzen/IngersolRand/TMVT/Everest/Bet a
148.	Fasteners	Hilti/Fisher/Wurth
149.	Motor	Siemens/Kirloskar/Crompton/ ABB/As per OEM standard
150.	VRF/VRV Indoor/ outdoor unit	Carrier / Mitsubishi / Daikin / Toshiba / Hitachi
151.	HI - WALL SPLIT A.C SYSTEMS	Carrier / Mitsubishi / Daikin / Toshiba/ Hitachi
152.	Indoor Units	Carrier / Mitsubishi / Daikin / Toshiba/ Hitachi
153.	TFU	Carrier / Mitsubishi / Daikin / Toshiba/ Hitachi
154.	Copper Tubes/ Pipe	Mexflow/ Rajco/ Mandev Tubes/ Jindal Refrigeration / RR Shramik

155.	Nitrile Rubber	Armaflex/ Aflex / K-Flex / Aerocell
156.	UPVC/ CPVC AC Drainage Pipe	Oriplast/ Finolex/ Supreme/ Ashirvad/Astral (ISI Marked)
157.	Delegate Unit/Chairman Unit/ Conference System Controller	OSL/Beyerdynamic/Shure/Sennheiser/Bose / Erthpot
158.	12 analog mic/line/ Wireless Handheld Microphone & Transmitter & associated Receiver /Wireless Handheld Receiver with Lapel micro phone	OSL/Beyerdynamic/Shure/Sennheiser/Bose /Yamaha
159.	Speaker/Digital Signal Processing Amplifier Systems/Amplifier	BRITISH ACOUSTICS/MARTIN AUDIO/ ASES / OHM/BOSE/Xilica
160.	PTZ conferencing camera	Lumens/Poly/Cisco/ OSL
161.	HDMI cables / Audio Cable / Snake Cable / Speaker Cable	Molex/Crestron / Kramer / Aten / Klotz /JAD/ Extron / Krystal / Belden
162.	Harddisk	WD/Segate
163.	Motirized Display	Albiral/Arthur Holm/Element One
164.	AV over IP Encoder/Decoder/HDMI Cable/AV Control processor/HDMI Switcher/HDMI Splitter	Aten / 4 the Wall / Lightware / Crestron / Extron
165.	Video Conferencing Camera/Media Station/ Capture Card	Lumens / Poly / Cisco / Arec
166.	HDMI cables / Audio Cable / Snake Cable / Speaker Cable	Milestone Pro / Extron / Kramer / Creston / Klotz / JAD / Extron / Krystal / Belden
167.	Touch pad	Apple / Samsung / Microsoft
168.	LAN Switches/Wireless Access Point/Wireless Controller	Cisco / Juniper / Rukus / HPE/Netgear
169.	All other items not covered above	As per approval of Engineer-in-charge

Note :-

1. When two or more alternative brands have been mentioned, the brand to be finally used shall be as decided by the Engineer-In-Charge. Nothing extra on this account is payable.
2. Article / Material / Brand which are not mentioned in the above list may be approved by the Chief Engineer on the request of Contractor / Agency provided that the Material / Article / Brand proposed by the contractor should have equivalent or better specifications and rates which are already mentioned in the list.
3. All other items shall be of ISI marked / as per approved sample kept at site of work.

SCHEDULE OF WORK (ELECTRICAL)

Name of Work:- “Renovation of Type-II, Type-III and Type-IV Quarters i/c E&M Services at Income Tax Residential Complex at, Beltola, Guwahati.”

Sl. No	Descriptions of Item Subhead & Nomenclature	Qty	Unit	Rates	Amount	
					DSR-25	MR
1	SH : I [Internal Electrical Installation]					
1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.					
1.1.1	Group A	586	Point	1,189.00	6,96,754.00	-----
1.1.2	Group B	56	Point	1,362.00	76,272.00	-----
1.2	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.					
1.2.1	Group A	1366	Point	687.00	9,38,442.00	
1.2.2	Group B	131	Point	752.00	98,512.00	-----
1.3	Wiring for twin control light point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.	37	Point	1,803.00	66,711.00	-----
1.4	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.					
1.4.1	3 x 1.5 sq. mm	4200	Meter	104.00	4,36,800.00	-----
1.4.2	3 x 4 sq. mm	15000	Meter	222.00	33,30,000.00	-----
1.4.3	6 x 4 sq. mm	3000	Meter	424.00	12,72,000.00	-----
1.4.4	2 X 10 sq. mm + 1 X 6 sq. mm earth wire	1100	Meter	863.00	-----	9,49,300.00
1.5	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.					
1.5.1	20 mm	8200	Meter	151.00	12,38,200.00	-----
1.5.2	25 mm	3000	Meter	168.00	5,04,000.00	-----

1.5.3	32 mm	400	Meter	209.00	83,600.00	-----
1.6	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
1.6.1	5/6 A switch	2139	Each	121.00	2,58,819.00	-----
1.6.2	15/16 A switch	150	Each	176.00	26,400.00	-----
1.6.3	6 pin 15/16 A socket outlet	385	Each	219.00	84,315.00	-----
1.6.4	Bell push	75	Each	159.00	11,925.00	-----
1.6.5	16 A, AC Starter	235	Each	1,029.00	-----	2,41,815.00
1.6.6	TV antenna socket outlet	75	Each	168.00	12,600.00	-----
1.7	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					
1.7.1	1 or 2 Module (75mmX75mm)	1100	Each	354.00	3,89,400.00	-----
1.7.2	3 Module (100mmX75mm)	300	Each	384.00	1,15,200.00	-----
1.7.3	4 Module (125mmX75mm)	150	Each	401.00	60,150.00	-----
1.7.4	6 Module (200mmX75mm)	150	Each	462.00	69,300.00	-----
1.7.5	8 Module (125mmX125mm)	225	Each	517.00	1,16,325.00	-----
1.8	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	275	Each	402.00	1,10,550.00	-----
1.9	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	545	Each	545.00	2,97,025.00	-----
1.10	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	800	Each	659.00	5,27,200.00	-----
1.11	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required.	80	Each	757.00	60,560.00	-----
	Total SH : I [Internal Electrical Installation]				1,08,81,060.00	11,91,115.00
2	SH : II [Fans & Fittings]					
2.1	LED Down lighter (SMD Type) (System lumen efficacy $\geq 105 < 120$ lm/Watt) Supplying, installation, Testing & Commissioning of LED Recessed/ surface Down lighter (Round/ square/ Rectangular) SMD type of following body material with PMMA and prismatic diffuser and construction as per IS: 10322 with driver as per the requirement with Driver efficiency $>85\%$, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F. ≥ 0.95 , IP20,					

	CRI ≥ 80 , UGR (Unified Glare Rating) < 19 , Flicker free (flicker should be below 5%), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) < 3 , Maximum power consumption should not more than the specified rating and Fixture shall be confirming to relevant BIS standards and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing Complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥ 105 < 120 lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast/ Extruded aluminium Body including trim.					
2.1.1	12 -15 watt	150	Each	715.00	1,07,250.00	-----
2.1.2	18 watt	294	Each	920.00	2,70,480.00	-----
2.2	Supplying, Installation, testing and commissioning of surface mounted LED batten (length 2') with LED fitting having Lumen efficacy ≥ 100 lm/watt, System Lumen output ≥ 1000 lm, CRI ≥ 80 , Power factor ≥ 0.9 having suitable diffuser and CCT in between 4000K to 6500 K (i/c both Limits), minimum life 50000 hours, complete with all accessories etc. directly on ceiling/wall including connection with 1.5 sq. mm FRLS/HFFR PVC insulated, copper conductor, single core cable and earthing etc. as required.	70	Each	671.00	-----	46,970.00
2.3	Supplying, Installation, Testing & commissioning of pressure die cast aluminium housing LED Bulk head fitting with lamp having minimum lumen out of ≥ 1000 lumen, minimum luminous efficacy ≥ 100 lumen / watt IP65 protection directly on wall including connection with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable & earthing etc. as reqd.	75	Each	934.00	-----	70,050.00
2.4	LED Batten light (System lumen efficacy ≥ 105 < 120 lm/Watt) Supplying, installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS: 10322 with driver (Replaceable) as per the requirement with Driver efficiency $> 85\%$, Operating voltage AC 140-270 Volt, freq 50/60					

	hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10% , P. F.≥0.95, IP20, CRI ≥80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with, 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥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)					
2.4.1	18-22 watt	350	Each	681.00	2,38,350.00	-----
2.5	Supplying, Installation, Testing and Commissioning of decorative Wall light having brushed nickel finish fixture with opal glass diffuser along with 9W LED lamp including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	470	Each	2,718.00	-----	12,77,460.00
2.6	Supplying, Installation, testing and commissioning of Skirting/Foot light in existing GI box i/c suitable for operation of 240 Volts 50Hz AC etc. as reqd.	155	Each	1,136.00	-----	1,76,080.00
2.7	Brush Less Direct Current (BLDC) Fan without Remote Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, suitable for operation with regulator for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 0C (max.), insulation resistance more than 2 mega ohm,					

	suitable for 230 V, 50 Hz, single phase AC supply, Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required.					
2.7.1	1200mm, service value > 6.0 CM/Min/watt, air delivery 210 CM/Min (Minimum)	275	Each	2,695.00	7,41,125.00	-----
2.8	Supply, Installation, testing & commissioning of 250 mm sweep exhaust (Ventilating) fan (PVC body) suitable for single phase 50 Hz AC supply in the existing hole including connection with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable & earthing etc. as reqd.	150	Each	1,731.00	-----	2,59,650.00
2.9	Supplying, installation, testing and commissioning of Heavy duty metal body 300 mm sweep exhaust fan with rpm not less than 900 and air flow not less than 700 cum/h in the existing opening i/c, connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as reqd.	75	Each	2,593.00	-----	1,94,475.00
	Total SH : II [Fans & Fittings]				13,57,205.00	20,24,685.00
3	SH : III [MCB DBs]					
3.1	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)					
3.1.1	16 way, Double door	75	Each	3,367.00	2,52,525.00	-----
3.2	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
3.2.1	Single pole	750	Each	285.00	2,13,750.00	-----
3.2.2	63A DP MCB	75	Each	1,709.00	-----	1,28,175.00
3.3	Supplying and fixing Cable End Box (Loose wire box) (IP 43) suitable for following single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with testing and commissioning etc. as required.					
3.3.1	For 14 way, Double door SPN MCBDB	75	Each	990.00	74,250.00	-----
	Total SH : III [MCB DBs]				5,40,525.00	1,28,175.00
4	SH : IV [Earthing & Lighting]					
4.1	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having	22	Set	7,658.00	1,68,476.00	-----

	locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.					
4.2	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	36	Set	8,351.00	3,00,636.00	
4.3	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	200.0	Metre	755.00	1,51,000.00	-----
4.4	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	200.0	Metre	287.00	57,400.00	-----
4.5	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	22	Each	609.00	13,398.00	-----
4.6	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	150	Each	139.00	20,850.00	-----
4.7	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	770.0	Metre	148.00	1,13,960.00	-----
4.8	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	330.0	Metre	238.00	78,540.00	-----
4.9	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.	22	Each	140.00	3,080.00	-----
4.10	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	170.0	Metre	221.00	37,570.00	-----
	Total SH : IV [Earthing & Lighting]				9,44,910.00	0.00
5	SH : V [Fire Extinguisher]					
5.1	Supplying and fixing of ISI marked Powder fire extinguisher ABC type fire extinguisher 6 kg. capacity conforming to IS-15683 : 2018 with IS 4308, ISI marked ABC Powder, complete with IS 4947 ISI marked Gas Cartridge with squeeze grip release valve, discharge pipe locking arrangement, operation manual and bracket suitable for operating between -30 degree centigrade to +60 degree centigrade complete as reqd.	22	Each	2,796.00	-----	61,512.00
5.2	Supplying and fixing of ISI marked CO2 type fire extinguisher of 4.5 Kg capacities conforming to IS: 2878 made from seamless cylinder conforming to IS: 7285, fitted with ISI marked controlled valve conforming to IS: 3224, high pressure 1 mtr. long discharge hose and horn	22	Each	7,455.00	-----	1,64,010.00

	complete with initial gas charging with carrying handle and wall mounting bracket and suitable for operating -30 Degree to +55 Degree etc. as required.					
	Total SH : V [Fire Extinguisher]				0.00	2,25,522.00
6	SH : VI [Feeder Pillars]					
	(Main Non Essential Panel)					
6.1	Supplying, installation , testing & commissioning of cubical type indoor LT Panel with Degree of protection IP:42 having in-built locking arrangement suitable for 415 V, 3 Phase, 4 Wire 50 Hz AC supply system fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 250 Amp capacity extensible type TPN aluminium alloy bus bars of high conductivity, DMC/SMC bus bar supports, bottom base channel of MS section not less than 100 mm X 50 mm X 5 mm thick, fabricated shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25 mm X 5 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of AL. bus bars and control wiring with sq. mm PVC insulated copper conductors S/C cable, cable alleys, cable glad plates in suitable section ,i/c Civil foundation i/c providing following switch gears :-					
	Incomer					
	500 A FP MCCB, 50 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle with ON,OFF and trip indicator lamp -- 1 Nos.					
	Digital multifunctional meter - 1 No					
	RYB indication lamp with 2 Amp SP MCB and 3 Nos. indication lamps					
	Outgoing					
	200 A TP MCCB, 25 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 1 Nos.					
	160 A TP MCCB, 25 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 7 Nos.					
	100 A TP MCCB, 25 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 2 Nos.					
	63 A TP MCCB, 16 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 1 Nos.	1	Job	4,93,553.00	-----	4,93,553.00
	(Sub Non Essential Feeder Pillar)					

6.2	Supplying, installation , testing & commissioning of cubical type Outdoor LT Panel with Degree of protection IP:54 having in-built locking arrangement suitable for 415 V, 3 Phase, 4 Wire 50 Hz AC supply system fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 200 Amp capacity extensible type TPN aluminium alloy bus bars of high conductivity, DMC/SMC bus bar supports, bottom base channel of MS section not less than 100 mm X 50 mm X 5 mm thick, fabricated shall be done in transportable sections, entire panel shall have a common copper earth bar of size 20 mm X 3 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of AL. bus bars and control wiring with sq. mm PVC insulated copper conductors S/C cable, cable alleys, cable glad plates in suitable section ,i/c Civil foundation i/c providing following switch gears :-					
	Incomer					
	160 A FP MCCB, 25 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle with ON,OFF and trip indicator lamp -- 1 Nos.					
	Digital multifunctional meter - 1 No					
	RYB indication lamp with 2 Amp SP MCB and 3 Nos. indication lamps					
	Outgoing					
	100 A TP MCCB, 25 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 4 Nos.					
	63 A TP MCCB, 16 KA breaking capacity with thermal maganetic release, spreader link and extended rotatry handle -- 1 Nos.	5	Job	1,72,865.00	-----	8,64,325.00
	(Street light Feeder Pillar)					
6.3	Supplying, installation , testing & commissioning of cubical type Outdoor LT Panel with Degree of protection IP:54 having in-built locking arrangement suitable for 415 V, 3 Phase, 4 Wire 50 Hz AC supply system fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 100 Amp capacity extensible type TPN aluminium alloy bus bars of high conductivity, DMC/SMC bus bar supports, bottom base channel of MS section not less than 100 mm X 50 mm X 5 mm thick, fabricated shall be done in transportable sections, entire panel shall have a					

	common copper earth bar of size 20 mm X 3 mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of AL. bus bars and control wiring with sq. mm PVC insulated copper conductors S/C cable, cable alleys, cable glad plates in suitable section ,i/c Civil foundation i/c providing following switch gears :-					
	Incomer					
	i) 63 A FP MCCB, 18 kA breaking capacity with thermal magnetic release, spreader link and extended rotary handle with R,Y,B indication lamp with 2 Amp 3 Nos. MCBs indicator lamp - 1 No.					
	ii) Digital voltmeter with VSS - 1 No.					
	iii) Digital ammeter, ASS along with CT 100/5 Amp Class - I - 1 Set.					
	Outgoings and Street Light Feeder					
	i) 6-32 A 'C' curve 10 kA breaking capacity DP MCB -- 10 Nos.	1	Job	87,209.00	-----	87,209.00
	Total SH : VI [Feeder Pillars]				0.00	14,45,087.00
7	SH : VII [Cable]					
7.1	Supplying of following sizes XLPE insulated and PVC sheathed aluminium/copper conductor armoured power cable of 1.1 KV grade conforming to IS 7098 (Part - I) / 1988 with amendment up to date etc as required.					
7.1.1	3½ X 300 sq. mm	50	Meter	3,817.00	-----	1,90,850.00
7.2	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.					
7.2.1	Above 185 sq. mm and upto 400 sq. mm	40	Meter	170.00	6,800.00	-----
7.3	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.					
7.3.1	Above 185 sq. mm and upto 400 sq. mm	10	Meter	146.00	1,460.00	-----
7.4	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.					
7.4.1	3½ X 300 sq. mm (70mm)	2	Each	1,336.00	2,672.00	-----
	Total SH : VII [Cable]				10,932.00	1,90,850.00
8	SH : VIII [Dismantle]					
8.1	Buyback the existing electrical material					

	including dismantle the same					
8.1.1	All size of copper wire	500	Kg	350.00	-----	-1,75,000.00
8.1.2	All switch and socket	515	Each	2.00	-----	-1,030.00
8.1.3	All size of DB's including MCB's	75	Each	100.00	-----	-7,500.00
8.1.4	All size of M.S. boxes	1000	Each	20.00	-----	-20,000.00
8.1.5	All size of LED fitting / Fluroscnt fittings	350	Each	50.00	-----	-17,500.00
8.1.6	Ceiling Fan	275	Each	30.00	-----	-8,250.00
8.1.7	Exhaust fan (Metal)	50	Each	200.00	-----	-10,000.00
8.1.8	Exhaust fan (PVC)	50	Each	150.00	-----	-7,500.00
8.1.9	MS conduit assorted	1800	Mtr	10.00	-----	-18,000.00
8.1.10	Main Panel (HRC Fuse type)	1	Each	8,000.00	---	-8,000.00
8.1.11	Sub feeder pillar (HRC Fuse type)	5	Each	4,500.00	---	-22,500.00
8.1.12	Street Light feeder pillar (HRC Fuse type)	1	Each	2,000.00	---	-2,000.00
	Total SH : VIII [Dismantle]				0.00	-2,97,280.00
	All SH i.e. SH : I to SH : VIII Total			Rs.	1,37,34,632.00	49,08,154.00
	Add Cost Index of Guwahati i.e. 119 based on PAR'23 (Base as 100) issued by ADG, Guwahati vide letter No. 17(6)/ ADG(G)/Works/ 2026/897 Dated 11.08.2026 Modified Cost Index on PAR'2025 / DPAR'25 (Base 100 on DPAR'25) [(119-100)/100x100] = 19.00% [Considered on Electrical DSR'25 Items]			Rs.	26,09,580.00	-----
	Total			Rs.	1,63,44,212.00	49,08,154.00
	Grand Total DSR'25 + MR			Rs.	2,12,52,366.00	