NIT NO. – 40/EE-DIB/2026-27

Name of Work: **Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.**

INDEX

Sl. No.	Description	Page No.
1.	**Index**	1
2.	**PART – A**	2
3.	CPWD-6 for e-tendering	3 – 8
4.	Receipt of deposition of original EMD	9
5.	Information and instructions for bidders for e-tendering forming part of bid document	10 – 11
6.	CPWD-7	12 – 13
7.	Form of Bank Guarantee for Earnest Money Deposit /performance	14 – 15
8.	Undertaking on structural stability and soundness as per "**Form F"**	16
9.	Undertaking for Association as per "**Annexure – A"**	17
10.	Proforma of schedules	18 – 24
11.	**PART – B**	25
12.	Additional conditions	26 – 34
13.	Additional specifications	35 – 52
14.	Guarantee bond to be executed by contractors for removal of defects after completion in respect of water proofing works	53 – 54
15.	List of materials of preferred make (Civil)	55 – 58
16.	Schedule of quantity (Civil)	59 – 60
17.	**PART – C**	61
18.	Proforma of schedules	62 – 66
19.	Memorandum of Understanding	67
20.	Jurisdiction of Courts	68
21.	General Terms and Conditions	69 – 77
22.	Form of Completion Certificate	78 – 79
23.	Eligibility Criteria for Major Components (E&M)	80 – 83
24.	Willingness Certificate (Annexure – C)	84
25.	Memorandum of Undertaking (MoU) (Annexure – D)	85 – 86
26.	List of acceptable makes of Electrical items	87
27.	Schedule of quantity (Electrical)	88 – 91

Certified that this N.I.T. amounting to Rs. 14,85,627.00 (Rupees fourteen lakh eighty-five thousand six hundred twenty-seven) only contains 01 to 91 pages only, in chronological order.

Executive Engineer (C)
Dibrugarh Division
CPWD, Dibrugarh-12

Correction...Nil Deletion... Nil Insertion...Nil Overwriting... Nil AE (C)AE(E)EE(C)

PART – " A "

CPWD-6 FOR e-TENDERING

Percentage rate bids are invited by Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12 on behalf of President of India from approved and eligible contractors of CPWD for the Work of **Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.** 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 estimated cost of work is **₹14,85,627.00** (Civil Rs.11,83,875.00 + Electrical Rs.3,01,752.00) **(Rupees fourteen lakh eighty five thousand six hundred twenty seven)** only.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.

2 Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7** which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in.** Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

3 The time allowed for carrying out the work will be **2 (Two) months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4 The site for the work is available.

5 The architectural and structural drawings shall be made available in phased manner, as per requirement of site and as per approved programme of completion submitted by the contractor after award of work. 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** at free of cost.

6 After submission of the bid, the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

7 While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.

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.29,713/-** in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks **(Drawn in favour of Executive Engineer, Dibrugarh Division, CPWD,Dibrugarh-12, payable at Dibrugarh)** shall be scanned and

uploaded to the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of 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 lakh, whichever is less, shall have to be deposited in shape prescribed above, and balance may be accepted in shape of Bank Guarantee of any Commercial bank having validity for a period of 90 (ninety) days 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 tenders except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period of 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 the 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 press notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only along with physical EMD of the scanned copy of EMD uploaded within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at **3:30 PM on 03-12-2026**

10 The bid submitted shall become invalid and e-Tender processing fee 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 as mentioned Scheduled E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance surety bonds, Account payee Demand Draft, Fix Deposit Receipt or Bank Guarantee from any of the Commercial bank 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:

Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI. Intending bidders are advisedto 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 have full knowledge of the site before uploading tender. He has to upload GPS photographs of work site including bidders photographs in a sheet so that it can be ascertained that he is well aware of site before uploading of tender**. **If photographs of bidder at site will not be uploaded then the tender will not be opened for that bidder**. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

13 The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

14 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

15 The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

16 The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

17 No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

18 The bids for the work shall remain open for acceptance for a period of **Thirty (30) days** from the date of opening of bids.

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

(ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right 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) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.

19 This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

(a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

(b) GCC 2023 for Maintenance Works with up to date corrections slips issued till last date of submission of bid.

20. 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 (**Phone No. +919485116516, e-mail-id:- eedibgcpwd@gmail.com**) or ERP help line no. 18001803286) or e-mail id cpwd.support@techmahindra.com. The e-tendering bidder are also advised not to raise any issues till the last date of submission of bid in their own interest.

21 **For Composite Bids**

21.1.1 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 estimate cost put to tender for the composite bid.

21.1.2 The bid document will include following three components:

Part A:-CPWD-6, CPWD-7 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2020 for construction works, 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.

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

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

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

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

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

21.1.8 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).

21.1.9 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.

21.1.10 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.

21.1.11 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.

21.1.12.A The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components. The CMB shall be maintained independently by Engineer-in-charge of major and minor components.

21.1.12.B 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.

RECEIPT OF DEPOSITION OF ORIGINAL EMD

(Receipt No. …… Date …….)

Name of work:- Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.

1. **NIT No. 40/EE-DIB/2026-27**
2. **Estimated Cost: Rs. 14,85,627/-**
3. **Amount of Earnest Money Deposit. Rs.29,713/-**
4. **Last date of submission of bid: 03-12-2026**

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

Signature, Name and Designation of EMD Receiving officer (EE/AE(P)/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, Dibrugarh Division, CPWD, Dibrugarh-12** on behalf of President of India invites online percentage rate bids from approved and eligible contractors of CPWD for the following work(s):

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 bids
1	2	3	4	5	6	7	8
1	40/EE-DIB/2026-27	**Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.**	**Rs. 14,85,627/-**	**Rs.29,713/-** In favor of EE, Dibrugarh Division, Dibrugarh-12	**2 (Two)Months**	**Up to 3.00 P.M. on 03-12-2026**	**Date 03-12-2026 at 3:30 P.M.**

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website **https://etender.cpwd.gov.in** free of cost.
4. 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 Bankers Cheque or Fixed Deposit Receipts or and Bank Guarantee (for balance amount as prescribed)from any of the commercial Banks 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),CPWD and other documents as specified.
5. Those contractors not registered on the website mentioned above, are required to get registered before and. If needed they can be imparted training on online bidding process as per details available on the website.
6. The intending bidder must have valid class-III digital signature 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 eM signer 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 pink 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. Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt against EMD.

II. Receipt of deposition of original EMD.

III. Copy of Enlistment Order of the Contractor.

IV. GST Registration Certificate, if already obtained by the bidder. GST registration certificate is required for the place where work is situated. Otherwise please upload undertaking.

If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents.

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

V. 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, l/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 l/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".

VI. Certificate of ERP training for contractor issued by the competent authority of any RTI of CPWD all over India.

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

VIII. Contractor has to visit site before upload of tender and he has to upload GPS photograph of bidder at site of work.

IX. 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:-

"Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI"

(i) To be uploaded by **15:00 hours on 03-12-2026** in the office of Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12.

(ii) To be opened in presence of tenderers who may be present at **15:30 hours on 03-12-2026** in the office of Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12.

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 30days from the due date of its opening in case of single bid system and not to make any modification in its terms and conditions.

A copy of earnest money of **Rs.29,713/-** in receipt Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed) from any of the Commercial Banks 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 and he will be suspended for one year and shall not be eligible bid for CPWD tenders from the date of issue suspension order.

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 .....

Correction...Nil Deletion... Nil Insertion...Nil Overwriting... Nil AE (C)AE(E)EE(C)

On Non-Judicial stamp paper of minimum Rs. 100

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

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

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 for Rs. ..... (Rupees…….. only) valid up to ..... (date)*..... as **Earnest Money Deposit** from ..... (name and address of contractor) ……(hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

   OR**

   Whereas the Executive Engineer…….. (name of division)…… CPWD on behalf of the President of India (hereinafter called "The Government,) has entered into an agreement bearing number……. with .....(name and address of the contractor). (hereinafter called "the Contractor,") for execution of work..... ... (name of work)……..... The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. ..... (Rupees ..... only) valid up-to ..... (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 being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the contractor shall have no claim against us for making such payment.

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

   Date……..

   Witnesses:

   1. Signature……
   2. Name and Address

   Authorized Signatory
   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 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: **"Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI."**

NIT No.: 40/EE-DIB/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).

*****

ANNEXURE – A

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

AFFIDAVIT

Name of Work:"Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI."

NIT No.: 40/EE-DIB/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 **59 – 60**

SCHEDULE 'D'

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

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	:	**Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including lEI**
Estimated cost of work	:	**Rs. 14,85,627.00**
1) Earnest money	:	**Rs.29,713.00**
2) Performance Guarantee	:	(a) PG: 5% of Tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). (b) APG: Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT) the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount. (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, Dibrugarh Division, CPWD, Dibrugarh-12

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, Dibrugarh Division, CPWD, Dibrugarh-12
2(viii)	Accepting Authority	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12
2(x)	Percentage on cost of materials and labourer to cover all overheads and profits.	:	15%
	Standard Schedule of Rates	:	**DSR-2023 with cost index**
2(xi)	Department	:	Central Public Works Department
9(ii)	Standard CPWD contract Form GCC 2023 (**Maintenance work**), C.P.W.D Form **7 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.	:	7(Seven) Days
(ii)	Maximum allowable extension with late fee @ 0.10% Per day of Performance Guarantee amount beyond the period provided in (i) above	:	3 (three) Days with late fee @ 0.10% Per day of PG amount.

Clause 2

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

Clause 5

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

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

~~Mile Stone Break up~~			
~~Sl. No.~~	~~Description of Milestone~~	~~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 foundation work up to plinth level i/c earth filling work, or financial progress~~	~~1 month `~~	~~1%~~
~~2.~~	~~Complete work in all respect i/c cleaning the site and handed over to the client department~~	~~2 Months~~	~~1%~~
Time allowed for execution of work.	:	**2 (Two)months**.	

Authority to decide:

(i)	Extension of time under clause 5	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12
(ii)	Rescheduling of mile stones	:	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-35.

Clause 5.1 (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**

~~**Recovery for delay in submission of program chart and monthly progress report ;**~~

~~**Sl.No**~~	~~**Delay of submission**~~	~~**Recovery (Rupees)**~~
~~**i.**~~	~~**Program chart as per Clause 5.1.b (i) of GCC**~~	~~**Rs.5,000/- per week**~~
~~**ii.**~~	~~**Monthly progress report as per Clause 5.1.b (iv) of GCC**~~	~~**Rs.2,000/- per week**~~

Clause 6

Mode of Measurement Book (CMB) / Electronic Measurement Book (EMB)	**:**	**EMB / CMB**

Clause 7

Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such Payment for being eligible for interim payment.	:	**Rs.5.00 Lakh**

Clause 7A

Whether applicable or not applicable	:	**Yes Applicable**

Clause 8A

Authority to decide compensation on account if contractor fails to submit completion plans	:	Chief Engineer, Guwahati CPWD,Guwahati-35.

Clause 10A

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

Equipment's for conducting necessary tests (as per CPWD Specifications2019 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 set up at site laboratory:-

Sl. No.	Equipment	Numbers
1	Balances	
	(i) 7kg to 10 kg capacity, semi-self indicative type-accuracy 10 gm	1 No.
	(ii) 500 gm capacity , semi-self indicative type-accuracy 1 gm	1 No.
	(iii) Pan balance-5 kg. capacity- accuracy 10 gms	1 No.
2	Sieves : as per IS 460-1962	
	(i) I.s sieves-450 mm internal dia, of sizes 100 mm,80 mm,63mm,50 mm,40mm,20mm,12.5mm,10mm,4.75 mm, complete with lid and pan	1 set
	(ii) IS sieves -200mm/300mm internal dia (brass frame) consisting of12.5 mm, 10 mm,4.75 mm,2.36 mm,1.18 mm,600 microns, ,300 microns,150 mm with lid and pan	1 set
3	Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly	1No.
4	Equipment for slump test- Slump cone, steel plate, tamping rod, steel scale, scoop	1 set
5	Dial gauges ,25mm travel-0.1 mm/division least count	1 No.
6	100MT compression testing machine, electrical-cum-manually operated)	1 No.
7	Graduated measuring cylinders 200 ml capacity	1No.
8	Cube mould 150mmx150mmx150mm	12 nos
9	Enamel trays (for efflorescence test for bricks)	

	(i) 300mmx250mmx40mm	1Nos.
	(ii) Circular plates of 250 mm dia	1Nos.
10	Steel tapes-3 m	1 No.
11	Vernier calipers	1 No.
12	Micrometer screw 25mm gauge	1 No.
13	A good quality plumb bob	1 No.
14	Spirit level, minimum 30cms long with 3 bubbles for horizontal vertical	1 No.
15	Wire gauge (circular type) disc	1 No.
16	Foot rule	1 No.
17	Long nylon thread	1 No.
18	Magnifying glass	1 No.
19	Screw driver 30 cm long	1 No.
20	Ball pin hammer,100 gm	1 No.
21	Plastic bags for taking samples	3 Nos.
22.	Depth Gauge	1 No.
23.	Straight edge	2 Nos.
24	Any other equipment for site tests as outlined in BIS codes and as directed by Engineer-in-charge.	As per requirement

C**lause 10-B (ii)**

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

Clause 10 C : Not Applicable

Component of labour expressed as percentage of value of work	:	~~25%~~
Clause 10 CA	:	**Not Applicable**

Clause 10 CC	**:**	**Not Applicable**
Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column		**NA**
Schedule of component of other materials, labour etc. for price escalation.		
Component of Civil (except materials covered under clause 10 CA) construction value of work (Xm)	**:**	**NA**
Component of labour Expressed as percent of total value of work.(Y)	**:**	**NA**

Clause 11

Specifications to be followed for execution of work	:	CPWD specifications 2019 Volume I and II, modified / corrected up to last date of submission of bid.

Clause 12	:	
Nature of work		**Maintenance Work**

Clause 12.2 and 12.3

Deviation limit beyond which clause 12.2 &12.3 shall apply for building work.	:	No limit

Clause 12.5

(i) Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation work.	:	No limit

Clause 16

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

Clause 18

Sl. No.	Equipment	Numbers
1.	Centralized concrete Batch mix plant of minimum capacity of 15 cum per hour (fully automatic with computer control) (In case of RMC is not procured)	1
2	Concrete hopper type mixer machine of full bag cement capacity	1 Nos.
3	Excavator cum loader (JCB 3D model or equivalent).	As per requirement
4.	Needle Vibrators.	2
5.	Reinforcement cutting machine.	1
6.	Water pump set for curing	1set
7	Welding machine 400 Ampere	1
8.	Shuttering with necessary props	As per requirement
9.	Granite cutting machine	1
10.	Ceramic tile cutting machine	1
11.	Granite polishing machine	1
12.	Granite hand polishing machine	1
13	Any other machinery required for completion of the work as per decision of Engineer-in-charge.	As per requirement

Note:
The above list is only indicative and not exhaustive. The Bidder may be required to deploy more T&P as per requirement of work so that work may be completed on time.

All the above plants & equipment's are to be deployed as and when required or directed by Engineer-in-Charge.

Clause 19 C	Authority to decide penalty for each default	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12
Clause 19 D	Authority to decide penalty for each default	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12
Clause 19 G	Authority to decide penalty for each default	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12
Clause 19 K	Authority to decide penalty for each default	:	Executive Engineer, Dibrugarh Division, CPWD, Dibrugarh-12

Clause 25

Conciliator	ADG(RG)
Arbitrator Appointing Authority	CE, Guwahati
Place of Arbitration	Guwahati

~~**Clause 32**~~

~~Requirement of Technical Representative (s) & recovery Rate~~

~~Sl. No~~	~~Minimum Qualification of Technical representative~~	~~Number (of Major + Minor component)~~	~~Minimum Experience(years)~~	~~Designation (Principal Technical / Technical representative~~	~~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 or Diploma Engineer~~	~~1 of major component~~	~~2 or 5 respectively~~	~~Project Manager cum planning/ quality /Site/ 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 2021 modified / 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 "

ADDITIONALCONDITIONS

1. Unless otherwise provided in the Schedule of quantities the rates quoted by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building, working in or under water and/ or foul conditions and nothing extra shall be payable to him on this account. Payment for centring, shuttering, however if required to be done for floor to floor heights greater than 3.5 m shall be admissible at rates arrived at in accordance with clause-12 of the agreement if not already specified.

2. TEMPORARY WATER/ ELECTRICITY/ TELEPHONE CONNECTION

i) Arrangement of temporary telephone connection, water and electricity required by him, shall be made by the Contractor at his own cost and also necessary permissions shall be obtained by him directly from concerned authorities, under intimation to the Department. Also, all initial cost and running charges, and security deposit, if any, in this regard shall be borne by him. The Contractor shall abide by all the rules/ bye laws applicable in this regard and he shall be solely responsible for any penalty on account of violation of any of the rules / byelaws in this regard. Nothing extra shall be payable on this account.

ii) The Contractor shall be responsible for maintenance and watch and ward of the complete installation and water / electricity meter and shall also be responsible for any pilferage, theft, damage, penalty etc. in this regard. The Contractor shall indemnify the Department against any claim arising out of pilferage, theft, damage, penalty etc. whatsoever on this account. Security deposit for the work shall be released only after No Dues Certificates are obtained from the local Authorities from whom temporary electric/ water / telephone connection have been obtained by the Contractor. Nothing extra shall be payable on this account.

iii) The Department shall in no way be responsible for either any delay in getting electric and/or water and/or telephone connections for carrying out the work or not getting connections at all. No claim of delay or any other kind, whatsoever, on this account shall be entertained from the Contractor. Also, contingency arrangement of stand-by water & electric supply shall be made by the Contractor for commencement and smooth progress of the work so that work does not suffer on account of power failure or disconnection or not getting connection at all. No claim of any kind whatsoever shall be entertained on this account from the Contractor. Nothing extra shall be payable on this account.

3. Other agencies doing works related with this project will also simultaneously execute the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for other agencies. Conduits for electrical wiring/cables will be laid in a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same.

4. Some restrictions may be imposed by the client department on the working and for movement of labour, materials etc. the contractor shall be bound to follow all such restriction/ instructions and nothing extra shall be payable on this account.

5. (a) The building work will be carried out in the manner complying in all respects with the requirements of relevant by laws of the local body under the jurisdiction

of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra will be paid on this account.

(b)Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to bye-laws and specifications of the Municipal Body/ Corporation where C.P.W.D. specifications are not available. The contractor should engage licensed plumbers for the work and get the materials (fixtures/fittings) tested by the Municipal Body/ Corporation Authorities wherever required at his own cost.

(c) The contractor shall comply with legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable.

6. The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

7. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been in built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.

8. Testing of materials: Samples of various materials required for testing from approved labs shall be provided free of charge by the contractor. All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.

9. The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy, the same may be got rectified before execution.

10. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department or procured by the contractor and nothing extra shall be payable to the contractor on their accounts.

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

12. The bidder shall abide by the rules and regulations under relevant GST, as amended from time to time and deductions shall be made from the gross value of the work done from all bills as per the provisions of above stated Acts. Nothing extra on account of this deduction shall be paid.

13. The contractor will have to work according to the program of the work given by the contractor and/ or decided by the Engineer-in-Charge. The contractor shall also construct a sample unit complete in all respect within time specified by the Engineer-in-Charge and this sample unit shall be got approved from the Engineer-in-charge before mass construction is taken up. No extra claim what so ever beyond the payments due at agreement rates will be entertained from the Contractor on this account.

14. The contractor shall take instructions from the Engineer-in-Charge for stacking of materials in any place. No excavated earth or building material shall be stacked

on areas where other buildings, roads, services of compound walls are to be constructed.

15. If as per municipal rules or client requirement, the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide such accommodation as is acceptable to local bodies and client and nothing extra shall be paid on this account.

16. Cement bags shall be stored in separate godowns to be constructed by contractor at his own cost as per sketch which is only indicative and actual size will depend on the site requirements as per CPWD Specification 2009 (Vol. I) with correction slips up to last date of submission of bid and R.C.C. work in pursuance (IS: 456-2000) with weather proof roof and walls. Each godown shall be provided with a single door with two locks.

17. The contractor shall be fully responsible for the safe custody of the materials even if the materials are under double lock system.

18. Contractor shall bear all incidental charges for cartage, storage and safe custody of materials and shall construct suitable godowns, yards at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.

19. All materials shall be got checked by the Engineer-in-Charge or his representative of the works on receipt of the same at site before use.

20. Royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle, sand and bajri etc. collected by him for the execution of the work, direct to the Revenue Authority or authorized agent of the State Government concerned or Central Government.

21. Drilling holes to secure fastener/ screws in walls and chase cutting in the walls wherever necessary shall be done by mechanical means i.e. by hammer drill machine & the chase cutting machine respectively for which nothing extra will be paid to the contractor.

22. The Contractor shall prepare and supply three sets of the completion drawings of all the external and internal plumbing, water supply, sanitary, drainage, electrical and other specialized works including all other services and completion plan of the building on completion of the services, to the Engineer-in-charge. One soft copy or hard copy of the relevant Architectural drawing for enabling the contractor to prepare the completion drawings shall be made available by the Engineer-in-Charge.

23. Brand and trade name of the paint to be used in the work shall be got approved in writing from the Engineer-in-Charge before application of the samples of different shades. After the written approval of the Engineer-in-Charge about brand, trade name, sample and shades of the paints the contractor shall make bulk procurement of the paint. Before start of the item of painting, the original purchase vouchers, delivery challan of purchase of full quantity of paint materials shall have to be produced by the contractor to the Engineer-in-Charge. The contractor shall bring full quantity of required painting material at site and get it inspected from the Engineer-in-Charge before start of the item of painting.

24. Cutting of centrifugal cast (spun) iron pipes wherever required shall be done by electric machine. Pipes of different lengths as required will be brought to site.

25. Element of reinforcement as per standard design is included in the item of brick masonry manholes. Therefore, the reinforcement used in the manholes shall not be separately measured for payment under the item of reinforcement.

26. TESTING OF MATERIAL

(a) The contractor shall procure all the materials in advance so that there is sufficient time for testing, approving of the material and clearance of the same before use in work.

(b) In case of concrete and reinforced concrete work, the contractor shall be required to make arrangement for carrying out compression strength tests at his own cost. He shall render all assistance for the preparation of cubes, safe custody of the same proper curing and carriage up to the laboratory where the test is to be performed. The cube tests can be performed at any laboratory approved by the Engineer-in-Charge.

27. Time allowed for execution of the work provided in clause 5 of Schedule 'F' is inclusive of the time required for any kind of testing of materials and preparation of Design mix of cement concrete for all R.C.C. work, time required for initial load testing / routine load testing of piles and time required for testing of weld etc.

28. Third Party Quality Assurance

The department may decide to engage third party quality assurance system and the contractor shall render all the necessary assistance and render arrangement for the inspection of work similar to clause 16 of agreement. Contractor shall be responsible to attend defect pointed out by CPWD/Third Party Inspection/Client through CPWD even after declaring the building completed. Contractor is responsible to attend the defects pointed out by CPWD or client during defect liability period/guarantee period.

29. Special conditions for Q.A. Plan.

Maintenance of Register of Tests:-

(i) All the registers of tests carried out at Construction site or in outside laboratories is to be maintained by the contractor which will be issued to the contractor by Engineer-in-charge.

(ii) All Samples of materials including cement concrete cubes shall be taken jointly with contractor by JE. Out of this at least 50% samples shall be taken in presence of JE/AE in charge. If there is no JE, all Samples of materials including cement concrete cubes shall be taken by AE jointly with contractor. All the necessary assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he/see shall be responsible for safe custody of samples to be tested at site.

(iii) All the test in field lab setup at construction site shall be carried out by the Engineering Staff deployed by the contractor which shall be 50% witnessed by JE/AE/EE.

(iv) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same will be regularly reviewed by JE/AE/EE. Contractor shall be responsible for safe custody of all the test registers.

(v) Agency has to maintained pile pour card standard Performa No pile should be casted without filling of this card.

30. <u>Submission of authenticated copies of itemized bills of materials.</u>

Contractor will submit authenticated copies of itemized bill of mines materials along with each running bill.

Contractor will also submit authenticated copies of all major items along with each running bill. Contractor to also submit authenticated copies of any other materials demanded by Engineer-in-charge.

31. Earth cutting permission for execution of work from the local administration will be the responsibility of the contractor.

32. Forest clearance permission for execution of work from the local administration will be the responsibility of the contractor.

33. If any supply of earth is involved in execution of work the necessary permission for royalty and cutting etc. at source will be the responsibility of the contractor.

33. The contractor shall procure & submit the samples of all Civil & Electrical items i/c granite stone for the approval of Engineer-in-charge prior to the execution of items.

34. The contractor shall submit final as-built drawings for Civil & Electrical work.

35. The contractor shall be responsible for behaviors & conduct of his worker. No worker with doubtful integrity having a bad record shall be engaged by the contractor.

36. Hinderance such as rain, festival bandh etc. will not be considered for granting extension of time. Contractor may study rain pattern and festivals of this area and deploy resources accordingly including working in two shifts to compensate loss of time due to these reasons.

37. CLEANLINESS OF SITE

i) The Contractor shall not stack building material / malba / muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So, the muck, rubbish etc. shall be removed periodically, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material / malba as stated above, the Contractor shall be liable to pay the stacking charges / penalty as may be levied by the local body or any other authority and also to face penal action as

per the rules, regulations and bye-laws of such body or authority. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

ii) The contractor shall take instructions from the Engineer-In-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed.

iii) The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The wastewater, slush etc. shall not be allowed to be collected at site. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

iv) It is the responsibility of contractor to keep building neat and clean. The contractor shall spray the chemicals fumigate site area to check the mosquitoes at frequent interval or as directed by the Engineer in charge. The contractor shall also make lighting and temporary ventilation arrangement in basement. The contractor shall provide submersible pumps with automatic on/off system in each sump in basement to bail out the water accumulated. The contractor shall quote rates after considering the above sated conditions and nothing extra shall be paid on this account.

v) The contractor shall not wash the drum of TM (transit mixture) at site and shall avoid the spread of leach ate / cement slurry to be spread at the site of work and all care shall be taken to keep the site neat and clean at his own cost.

38. INSPECTION OF WORK

i) In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by Senior Officers of CPWD & the representative of the Consultants. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

a The consultant and third-party quality assurance agency appointed by CPWD, shall be inspecting the works including workshops and fabrication factory to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract. Their observations shall be communicated by CPWD engineering staff and compliance is to be reported to CPWD.

b Senior Officers of CPWD, Dignitaries from **RMRC** Authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing.

i) Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.

ii) Keep entrance and surrounding area clean.

iii) Display layout plan key plan, building drawings including plans, elevations and sections.

iv) Up to date displays of Bar chart, CPM and PERT etc.

v) Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.

vi) Keep plastic / cloth mounted one sets of building drawings.

vii) Set of Helmets and safety shoes for exclusive use for officers/dignitaries visiting at site.

39. The site of work is in a restricted area with limited availability of space left out for accommodation, stores, field office, batching plant etc. The contractor may be allowed to erect labour huts, site office, stores, field office, batching plant within site/plot without disturbing the construction area. However, the contractor shall make his own arrangements to provide for additional requirement (in addition to available area at site), as per the rules of the local bodies. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained.

40. Prevention of Nuisance and pollution.

The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment's for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge

41. Information to be provided by contractor:

i. **Warning/Caution Boards:** All temporary warning/ caution boards/ glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades, barricading as required from environmental protection view as per NGT etc. shall be provided and displayed by the Contractor, wherever required. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also, he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. Nothing extra shall be payable on this account.

ii. **Sign Boards:** The Contractor shall provide and erect a display board of size and shape as required and paint over it, ineligible and work man like manner, the details about the salient features of the project, as required by the Engineer-in- Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Client/ Owner, Engineer-in-charge, Structural Consultants, Department etc.

besides providing space for names of other Contractors, Sub-Contractors and specialized agencies within 15 days from issue of award letter. Nothing extra shall be payable on this account.

iii. Necessary protective and safety equipment shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.

iv. All signage shall be dismantled and taken away by the contractor after completion of the work with the approval of Engineer-in-charge. No payment shall be made on this account.

v. No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules/ instructions issued by the relevant authorities and as per the direction of Engineer-in-Charge in this regard. Also, all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

41. <u>Personal Safety, Hygiene Measures for Labour:</u>

i. Contractor will provide the following items for safety of workers employed by contractor and associate agencies:

ii. Protective footwear and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/ sewer line.

iii. Welder's protective eye-shields to workers who are engaged in welding works.

iv. Safety helmets and safety harnesses or belts must be provided to workers at the construction site.

v. Adequate sanitation and safety facilities must be provided for construction workers to ensure their health and safety during construction, including basic facilities such as sanitation, drinking water, and safety equipment or machinery.

vi. All workers must wear helmets and safety shoes at all times while working on the site.

vii. Masks and gloves must be worn whenever and wherever required to ensure worker safety.

viii. Adequate drinking water facilities must be provided at the site, and a sufficient number of decentralized latrines and urinals must be arranged for construction workers.

ix. If full-time workers are residing on site, they must be provided with clean and adequate temporary hutments.

x. A first-aid facility must also be available at the construction site.

xi. Overhead lifting of heavy materials should be avoided, and barrow wheels and hand-lift boxes should be used to transport materials on the site.

xii. Tobacco and cigarette smoking must be strictly prohibited on the construction site.

xiii. All dangerous parts of machinery must be properly guarded, and necessary precautions must be taken while operating machinery.

xiv. Hoists, lifts, lifting machines, chains, ropes, and other lifting equipment must be maintained in good condition, and safety nets of adequate strength must be installed to prevent falling materials.

xv. Durable and reusable formwork systems should be used instead of timber formwork, and all formwork must be properly maintained. Walking surfaces or boards at height must be of sound construction and provided with safety rails and belts, and protective equipment such as helmets must be provided.

xvi. Proper measures must be taken to prevent fire, including the provision of fire extinguishers and buckets of sand in fire-prone and other necessary areas.
xvii. Sufficient and suitable lighting must be provided for construction activities carried out during night hours.
xviii. Necessary measures must be taken to protect workers from hazards related to construction materials, transportation, storage, and other health risks.
xix. The construction firm, division, or company must have well-defined and effective safety policies.
xx. All safety procedures, norms, and guidelines outlined in the National Building Code of India 2016 must be followed.
xxi. Additional best practices and prescribed norms mentioned in the National Building Code of India 2016 should also be adopted.

xxii. Agency has to follow the COVID – 19 SOP issued by the Government of Assam and Government of India time to time.

43. A site laboratory with the minimum equipment's as specified in CPWD specifications/in this tender document shall be established, made functional and maintained within three months from the commencement date or date of start without any extra cost to the department.

44. The Contractor shall maintain all the work in good condition till the completion of entire work. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department/ authority / persons concerned, by the Contractor at his own cost.

45. The Contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge.

ADDITIONAL SPECIFICATIONS

1.1 GENERAL

1.2 The order of preference in case of any discrepancy as indicated in condition No. 8.1 under "Conditions of Contract" give in standard CPWD contract form may be read as the following:

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

1.3 Wherever any reference to any Indian Standard Specifications of BIS or other international standards of ASTM / BS / EN occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued there-to or revisions thereof, if any, up to the date of receipt of tenders.

1.4 The work shall be executed and measured as per metric dimensions given in the Schedule of quantities, drawings etc. (F.P.S. units wherever indicated are for guidance only).

1.5 The following modifications in the above specifications and some additional specifications shall however apply:

i) All stone aggregate and stone ballast shall be of hard stone variety to be obtained from approved quarries or any other source to be got approved by the Engineer-in-Charge.
ii) Sand to be used for cement concrete work, mortar for masonry and plaster work shall be of standard quality. Sand shall be obtained from approved source or any other source to be got approved from the Engineer-in-Charge and screened as required. The same shall consist of hard siliceous material. It shall be clean sand.

1.6 Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract the same shall be inclusive of all amendments issued there to revision thereof if, any, up to the date.

2.0 Unless otherwise specified in the schedule of quantities the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source, such as rains, floods, and sub-soil water level being high due to any other cause whatsoever.

3.0 Mix design.

A. The contractor shall carry out design mixes for each class of concrete meeting the requirements as per specification.

B. The contractor shall submit proposal of mix designs, one month in advance to commencement of concreting work and charges for design mix shall be borne by the contractor.

C. Wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. The Design Mix Concrete will be designated based on the principles given in IS: 456, 10262 & SP 23. The condition and specifications stated herein shall have precedence overall conditions and specifications stated in relevant I.S codes/CPWD specifications. Foundation shall be Pile foundation using specified grade of concrete. The foundation level shown in the structural & architectural

drawings are for supporting the foundation on firm strata as per SBC specified therein. However, care shall be taken to ensure to support the footings on firm strata as per minimum SBC specified in structural drawings. Geotechnical/soil investigation shall be performed by contractor to establish the SBC of the soil. The mandatory tests required in accordance 115 with IS 10042 need to be carried out during construction by the contractor. The contractor shall carry out the soil investigation of entire site, as per relevant Indian standards, before taking up the foundation work. Subsurface conditions encountered during construction may vary somewhat from the conditions encountered during site investigation. There is likelihood of encountering localized clay seams in the type of formation that exists at site. Therefore, it is essential to examine the founding levels very carefully during excavation and remove the same if met with till firm strata is ensured prior to laying of PCC. It should be ensured that at foundation level, no voids are there, if voids are observed the same shall be grouted. Necessary soil stabilization measures shall be implemented by the contractor to achieve the bearing capacity as specified in structural drawings. Any deviation in earth work, concrete work, RCC work, or any other items of works will be ignored and nothing extra shall be paid on account of varying foundation level (in order to ensure supporting of foundation on firm strata and at minimum SBC specified in structural drawings). The contractor shall quote the rate accordingly. RCC retaining/breast wall shall be provided as per drawings and site condition. Unless specified otherwise, all structural members like footings, Columns, Beams, slabs etc. shall be provided with specified grades of concrete as per structural design.

a. Coarse Aggregate: -As per CPWD Specifications - 2019 - Vol.I& Vol. II with upto date correction slips

b. Fine Aggregate: -As per CPWD Specifications - 2019 - Vol.I& Vol. II with upto date correction slips.

c. Water: -It shall confirm to requirements laid down in IS: 456-2000 / CPWD Specifications - 2019 - Vol.I& Vol. II with upto date correction slips.

d. Cement: -OPC grade 43 / PPC shall be used for design mix concrete. However, if higher grade of cement is used by the contractor nothing extra shall be paid on this account.

e. Admixtures/ Plasticizers: -The admixture shall confirm to IS: 9103, wherein required, the admixture of approved quality and approved make only shall be used to attain the required workability. Nothing extra shall be paid for use of admixtures.

f. Grade of Concrete: - The compressive strength of various grades of concrete shall be given as below: -

Grade Designation	Compressive strength on cubes min. 7 days (N/ mm2)	Specified Characteristic Compressive Strength At 28 Days At (N/ mm2)	Maximum Water Cement Ratio
M-20	As Per Design	20	0.50
M-25	As Per Design	25	0.50
M-30	As Per Design	30	0.45
M-35	As Per Design	35	0.45
M-40	As Per Design	40	0.45

Water cement ratio and slump shall be as per IS: 456-2000

NOTE: -

a. In the designation of a Concrete mix letter M refers to the mix and the number of the specified characteristic compressive strength of 15 cm-Cube at 28 days expressed in N/mm2.

C.1 The Contractor shall engage one of the following approved laboratories / test houses for designing the concrete mix in accordance with relevant IS Code and to conduct laboratory tests to ensure the target strength & workability criteria for a given grade of concrete: -

i. IIT, Guwahati.

ii. NTH, Guwahati.

iii. Any other laboratory with prior approval of the Engineer in Charge.

C.2 The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-Charge and the samples of such aggregates sent shall be preserved at site by the department.

C.3 The contractor shall submit the report on design mix from any of above approved laboratories for approval of Engineer-in-Charge within 45 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the design mix is approved. In case of white Portland cement and the likely use of admixtures in concrete with ordinary Portland/white Portland cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and / or admixtures also, for which nothing extra shall be payable

C.4 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised laboratory mix design report conducted at laboratory established at site shall be submitted by the contractor as per the direction of the Engineer-in-Charge.

C.5 Trial Batches

i. The designed mix proportion shall be checked for target mean compressive strength by means of trial batches.

ii. The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.

iii. The workability of trial mix No. 1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.

iv. With the modified water content, the mix pro-portions shall be recalculated by keeping with water cement ratio unchanged. The mix proportions, as modified, shall form the Trial Mix No. 2 and tested for the specified strength and workability.

v. In addition, trial mix No. 3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio + 10 percent of the specified value and tested for their design characteristics.

C.6 All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix wherever required and directed by Engineer-in-Charge.

C.7 Design mix concrete conditions and requirements: -

The mix design for a specified grade of concrete shall be done for a target mean compressive strength.

$$Tck = Fck + 1.65s$$

Where Fck = Characteristic compressive strength at 28 days.
S = Standard deviation which depends on degree of quality control.

The degree of quality control for this work is "good" for which the standard deviation (s) obtained for different grades of concrete shall be as follows: -

GRADE OF CONCRETE	STANDARD DEVIATION(S)
M-10	3.5
M-15	3.5
M-20	4.0
M-25	4.0
M-30	5.0
M-35	5.0
M-40	5.0
M-45	5.0
M-50	5.0
M-55	5.0
M-60	5.0

Minimum three sets of separate preliminary test shall be carried out for each trial batch of concrete mix. Each test shall comprise six specimens and only one test set of six specimens shall be made on any particular day. Out of the six specimens of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days. The design mix shall be approved only on the basis of test strength of 28 days. The design mix shall be considered satisfactory and approval if at least three preliminary test-sets individually satisfy the following strength and workability criteria.

a. The average strength of each test sets is not less than the specified target means compressive strength (TCK).

b. The strength of any specimen cube is not less than 0.85 Tck.

c. The concrete mix is required degree of workability and acceptance concrete finish.

All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the Contractor.

C.7.1 WORK STRENGTH TEST: -

a. **TEST SPECIMEN:** -
Work strength test shall be conducted in accordance with IS: 516 on random sampling. Each test shall be conducted on six specimens, three of which shall be tested at 7 days and remaining three at 28 days.

b. **TEST RESULTS OF SAMPLES:** -
The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than + 15% percent of the average. If variation is more, the test results shall be treated as invalid. 80% of the total tests shall be done at the laboratory established at site by the contractor and remaining 20% in the laboratory of IITs and NITs or in any other laboratory as directed by the Engineer-in-Charge.

c. **LOT SIZE: -**

The minimum frequency of sampling of concrete of each grade shall be in accordance with the following: -

QUANTITY OF CONCRETE IN THE WORK (CUBIC METRE PER DAY).	NUMBER OF SAMPLES
1-5	1
6-15	2
16-30	3
31-50	4
51 & above	4 Plus one additional sample for each additional 50 cubic metre of part thereof

NOTE: At least one sample shall be taken from each shift.

C.8 **STANDARD OF ACCEPTANCE**: -

i) In case the test results of all the samples are above the characteristic compressive strength, the concrete shall be accepted.

ii) In case the test result of one or more samples fails to meet the requirement (i) above, it shall be accepted if both the following conditions are met: -

a) Any individual test result is not less than (Fck - 3) N/mm2.

b) The mean of test results from any group of four Non-overlapping consecutive samples is more than (Fck + 3) or Fck + 0.825 x established standard deviation (rounded off to nearest 0.5 N/mm^2.

iii) Concrete of each grade shall be assessed separately.

iv) Concrete is liable to be rejected, if it is porous or honeycombed, its placing has been interrupted without providing a proper construction joint, the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met.

C.9 Ultrasonic Pulse Velocity Method of Test for RCC

i. The underlying principle of assessing the quality of concrete is that comparatively higher velocities are obtained when the quality of concrete in terms of density, homogeneity and uniformly is good. The consistency of the concrete as regards its general quality gets established. In case of poorer quality lower velocities are obtained. If there are cracks, voids or flaws inside the concrete which come in the way of transmission of pulse, lower velocities are obtained.

ii. The quality of concrete in terms of uniformity, incidence or absence of internal flaws, cracks and segregation etc. indicative of the level of workmanship employed, can thus be assessed using the guidance given in table below, which have been evolved for characterizing the quality concrete in structure in term of the ultrasonic pulse velocity.

iii. Velocity criterion for Concrete Quality Grading.

Sl. No.	Pulse velocity by Cross Probing	Concrete Quality Grading
1	Above 4.5	Excellent
2	4.5 to 3.5	Good
3	3.5 to 3.0	Medium
4	Below 3.0	Doubtful

iv. Pulse velocity method of test of concrete is to be conducted for CPWD works as a routine test. The acceptance criteria as per the above table will be applicable which is as per IS 13311 (part-1): 1992. From the above “Good” and “Excellent” grading are acceptable and below these grading the concrete will not be acceptable.

v. 5% of the total number of RCC members in each category i.e. beam, column, slab and footing may be tested by UPV test method for establishing quality of concrete. It is suggested that test be conducted on RCC beam near joint with column, on RCC column near joint with beam, on RCC footings and rafts. On RCC rafts a suitable grid can be worked out for determining number of tests. In addition, doubtful areas such as honeycombed locations, locations, where continuous seepage is observed, construction joints and visible loose pockets will also be tested.

vi. The test results are to be examined in view of the above acceptance criteria “Good” and “Excellent” and wherever concrete is found with less than required quality as per acceptance criteria, repairs to concrete will be made. Honeycombed areas and loose pockets will be repaired by grouting using Portland Cement Mortar/Polymer Modified Cement Mortar /Epoxy Mortar, etc. after chipping loose concrete in appropriate manner. In areas where concrete is found below acceptance criteria and defects are not apparently visible on surface, injecting approved grout in appropriate proportion using epoxy grout /acrylic Polymer modified cements slurry made with shrinkage compensating cement / plain cement slurry etc. will be resorted to for repairs.(refer relevant chapters from CPWD Hand Book on Repairs and Rehabilitation of RCC Buildings).Repair to concrete will be done till satisfactory results are obtained as per the acceptance criteria by retesting of the repaired area. If satisfactory results are not obtained dismantling and relaying of concrete will be done.

C.10 The contractor has to arrange at site centering and shuttering for as per schedule-F within two months from stipulated date of start of work. Only M.S. centering / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor as approved by the Engineer-in-Charge.

C.11 The rate quoted by the tenderer also include cost of special type of centering and shuttering e.g. circular in shape or of any other architectural design.

C.12 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the Contractor.

C.13 As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 25 mm lower than general floors shuttering should be adjusted accordingly and slabs should be laid with towards the drainage point. Nothing extra is payable on this account.

C.14 Production of Concrete

If the site for the work is congested. then the contractor has to arrange the site / land for installation of batching plant outside the site, if required so. All concrete shall be produced through fully computerized weigh-batching plant of suitable capacity (not less than 15 cum/hr.) conforming to IS: 4925 with the arrangements for automatic dispensing of admixture and having facility of giving print out indicating weight / details of all ingredient of concrete in each lot/ batch and variations from the approved design mix if any. Fully automatic batching and mixing plant having capacity not less than 15 cum/ hour shall be installed at the arranged

site by the contractor as the construction site is congested & space for installation for batching plant is not available at construction site. Nothing extra for carriage of concrete from the batching plant shall be entertained. The batching and mixing plants shall be dedicated plants for this project. Contractor shall make his own arrangements for the necessary infrastructure for installation of batching plant and other machineries. However, if due to any reason, contractor wishes to procure the concrete from Ready Mix Concrete (RMC) supplier, he is permitted to procure the same from the source approved by the Engineer-in-charge at his own cost. In such a situation nothing extra shall be paid to the contractor. All technical requirements such as cement type and minimum cement quantity, w/c ratio, slump, admixture etc. shall be conveyed to RMC supplier by the contractor and contractor shall be wholly responsible for ensuring the property of concrete as required at site, nothing extra shall be paid to the contractor.

The contractor may take some time to install his own batching plants at the arranged site and till the batching plants are installed, the contractor is permitted to procure concrete from approved Ready-Mix Concrete (RMC) supplier for a period 3 months from date of start of work or the period as agreed by Engineer-in-Charge. Similarly, when the work is nearing completion and daily requirement of concrete is very less, if agreed by the Engineer-in-Charge, the contractor may be permitted to procure the concrete from approved Ready-Mix Concrete (RMC) supplier and nothing extra shall be paid to the contractor on this account.

C.15 Land for Temporary Use

The land for labour camps and batching plant shall be arranged by the contractor. The lease/rent charges shall be borne by the contractor. The Engineer-in-Charge shall extend necessary help and issue necessary recommendations etc. to the concerned department for temporary allotment of land during construction period.

The batching and mixing plant shall be fully automatic of suitable capacity not less than 15cum/hour. Automatic batcher shall be charged by devices which when actuated by a single starter switch will automatically start the weighing operation of each material and stop automatically when the designated weight of each material is fed in the mixer. The batching plant shall have automatic arrangement for dispensing the admixture and shall be capable of discharging water in more than one stage. A batching plant essentially shall consist of the following components:

Separate storage bins for different sizes of aggregates, silo for cement and fly-ash, water storage tank.

Batching equipment, Mixers, Control Panels, Mechanical material feeding and elevating arrangements

The compartments of storage bins for aggregates shall be approximately of equal size. The cement compartment shall be centrally located in the batching plant. It shall be water tight and provided with necessary air vent, aeration fittings for proper flow of cement & emergency cut off gate. The aggregate and sand shall be charged by power operated centrally revolving chute. The entire plant from mixer floor upward shall be enclosed and insulated. The batch bins shall be constructed so as to be self-cleansing during draw-down. The batch bins shall in general conform to the requirements of IS: 4925.

The batching equipment shall be capable of determining and controlling the prescribed quantities of various constituent materials for concrete accurately i.e. water, cement, sand, individual size of coarse aggregates etc. The accuracy of measuring devices shall fall within the following limits.

Measurement of Cement:	+ 2% of the quantity of cement in each batch
Measurement of Water:	+ 3% of the quantity of water in each batch
Measurement of Aggregate:	+ 3% of the quantity of aggregate in each batch
Measurement of Admixture:	+ 3% of the quantity of admixture in each batch

The batching and mixing plant shall have the provision of adjusting the plus / minus quantity of various ingredients in the next batch so that there is no variation in quantity of ingredients from design mix in a lot consisting of 5 to 6 batches.

The mixer in the batching plant shall be so arranged that mixing action in the mixer can be observed from the operator's station. The mixer shall be equipped with a mechanically or electrically operated timing, signalling and metering device which will indicate and assure completion of the required mixing period. The mixer shall have all other components as specified in IS: 4925.

C.16 Transportation, Placing and Compaction of Concrete

Mixed concrete from the RMC / Batching plant shall be transported to the point of placement by transit mixers and placed in position through concrete pumps and/or steel closed bottom buckets capable of carrying minimum 0.6 cum concrete. In case the concrete is proposed to be transported by transit mixer, the mixing speed shall not be less than 4 rev/min. of the drum nor greater than a speed resulting in a peripheral velocity of the drum 70 m/minutes at its largest diameter. The agitating speed of the agitator shall be not less than 2 rev/min nor more than 6 rev/min of the drum. The number of revolutions of the mixing drum or blades at mixing speed shall be 70 to 100 revolutions for uniform mixes, after all ingredients, have been charged into the drum. Unless tempering water is added, all rotation after 100 revolutions shall be at agitating speed of 2 to 6 rev/min and the number of such rotations shall not exceed 250. The general construction of transit mixer and another requirement shall conform to IS: 5892.

In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of mortar through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents at all stages. Special precaution shall be taken that surrounding temperature during concreting shall not exceed 30 degree centigrade.

Except where otherwise agreed to by the Engineer in Charge, concrete shall be deposited in horizontal layers to a compacted depth of not more than 450 mm. Unless agreed to by the Engineer in Charge, concrete shall not be dropped into place from a height exceeding 1.5m. In order to avoid such situations chutes, tremie pipe or closed bottom buckets shall be used. These shall be kept clean and used in such a way as to avoid segregation. Slope of the chute shall be so adjusted that concrete flows without the use of excessive quantity of water. The delivery end of chute shall be as close as possible to the point of deposit. The chute shall be thoroughly flushed with water before and after each working period and the water used for this purpose shall be discharged outside the formwork. The concrete shall be compacted by using immersion type vibrators. When the concrete is being continuously deposited to a uniform depth along a member, vibrator shall not be operated within one meter of free end of the advancing concrete. Every effort shall be made to keep the surface of the previously placed layer of concrete alive so that the succeeding layer can be amalgamated with it by the vibration process. In case the concrete in underlying layer has hardened to such an extent that it cannot be penetrated by the vibrator but is still fresh (that is, just after

initial set), un-imposed bond shall be achieved between the top and underlying layer by first scarifying the lower layer before the new concrete is placed by systematically and thoroughly vibrating the new concrete. The points of insertion of vibrator in the concrete shall be so spaced that the range of action overlap to some extent and the freshly filled concrete is sufficiently consolidated at all locations. The spacing between the dipping positions of vibrator shall be maintained uniformly throughout the surface of concrete so that concrete is uniformly vibrated. The vibrating head shall be regularly and uniformly inserted in the concrete so that it penetrates of its own accord and shall be withdrawn slowly whilst running so as to allow redistribution of concrete in its way and allow the concrete to flow back into the hole behind the vibrator. The vibrator head shall be kept in one position till the concrete within its influence is completely consolidated. Vibration shall be continued until the coarse aggregate particle have blended into the surface but have not disappeared. The contractor shall keep at least one additional vibrator in serviceable condition to be used in the event of breakdowns and maintenance problems.

The vibrator head shall not be brought more than 200 mm near to the formwork as this may cause formation of water stagnations. The formwork shall be strong and great care shall be exercised in its assembly. It shall be designed to take up increased pressure of concrete and pressure variations caused in the neighbourhood of vibrating head, which may result in excessive local stress on the formwork. The joints of the formwork shall be made and maintained tight and close enough to prevent the squeezing out slurry or sucking in of air during vibration. The formwork to receive concrete shall be cleaned and made free from standing water, dust, etc. The contractor shall keep provision for screed and shutter vibrators at site.

No concrete shall be placed in any part of the structure until the approval of Engineer-in-Charge has been obtained. If concreting is not started within 24 hours of the approval being given, it shall have to be obtained again from the Engineer-in-Charge. Concreting shall be done continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joint is formed. When concreting has to be resumed on a surface which has hardened, it shall be roughened, swept, clean, thoroughly wetted and covered with a 13 mm thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. The 13 mm layer of mortar shall be freshly mixed and placed immediately before placing of new concrete.

Where concrete is not fully hardened, all latency shall be removed by scrubbing the wet surface with wire or bristle brushes. Care shall be taken to avoid dislodgement of particles of coarse aggregate. The surface shall then be thoroughly wetted, all free water removed and then coated with neat cement grout. Particular attention shall be given to corners and close spots.

In case of rejection of concrete on account of unacceptable compressive strength, governed by Para “Standard of Acceptance” as above, the work for which samples have failed shall be redone at the cost of contractor. However, the Engineer-in-Charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure on part of structure, etc) to be carried out at the cost of contractor to ascertain if the portion of structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The Contractor shall take remedial measures necessary to retain the structure as approved by the Engineer-in-Charge without any extra cost.

4.0 Outside/Independent Testing Facilities

a) These laboratories shall be in the Government sector, Semi Government or private sector. **All govt. Institutes, Central and State research Centers, Central and State funded laboratories stands approved. No approval is required for testing in these laboratories/institutes.**

b) However, the outside private laboratories shall be approved by Chief Engineer, Guwahati.

4.1 In case of rejection of concrete on account of unacceptable compressive strength, governed by the Para "Standard of Acceptance" as above, the work for which samples have failed shall be redone at the cost of contractors. However, the Engineer- in- Charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure, or on part of structure, etc.) to be carried out at the cost of contractor to ascertain if the portion of the structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The contractor shall take remedial measures necessary to retain the structure as approved by the Engineer-in-Charge without any extra cost. However, for payment, the basis of rate payable to the contractor shall be governed by the 28 days cube test results and reduced rates shall be regulated in accordance as per provision in CPWD specifications and conditions cited in this bid document.

5.0 STEEL WORK:

6.0 The steel doors, windows, ventilators and composite units shall be got fabricated in Work shop approved by the Chief Engineer concerned.

7.0 VARIATION IN CONSUMPTION OF MATERIALS

The variation in consumption of material shall be governed as per CPWD specification 2019 Vol. I & II with correction slips up to date and clauses of the contract to the extent applicable. The following specific clauses shall govern the variation in consumption of pig lead.

8.0 WATER PROOFING ON TERRACE:

The contractor must associate himself with the specialized firm to be approved by the Engineer-in-Charge in writing, for chemical based water proofing treatment as per manufacture specifications on roofs etc. **Five years Guarantee Bond to be given by the agency from the date of completion in prescribed proforma.** In addition to normal security deposit, 10% (ten percent) of the cost of these items shall be retained as guarantee money to watch the performance of the work done. 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.

Before execution of the items of water proofing treatment, the contractor must submit the following details and get the same approved by the Engineer-in-Charge.

a) The name of the specialized firm
b) The trade names of the product which could be used;
c) List of works where this treatment has been used.

d) Quantity of chlorides and sulphides used in the product.

9.0 MARBLE/GRANITE STONE SLABWORK

9.1 In the event of non-availability of 18mm thick marble stone for flooring, 16mm thick marble stone can be permitted. In that event, 22mm thick base cement mortar shall have to be provided in place of 20mm thick base cement mortar for which nothing extra shall be paid. However deduction for the less thickness of marble stone slab shall be made.

9.2 Flooring work is to be executed as per flooring pattern shown in Arch. drawings and as per direction of Engineer-in-Charge for which nothing extra will be paid.

9.3 The size of tiles/marble stone/Granite stone in dado/skirting is to be provided as shown in Architectural drawings.

9.4 For providing granite stone in counters, window sills, kitchen platforms and other similar locations, the rate shall deemed to include mirror polished of the free/ exposed edges which shall have to be done and nothing extra shall be paid on this account. Further for granite stone up to 2 meter, for treads of steps and risers, kitchen counters, window sills and any other locations wherever decided by the Engineer-in-Charge, single stone shall be used for which nothing extra shall be paid.

9.5 The colour and shade of the granite and granite tiles shall be decided by the Engineer-in-Charge. No epoxy / colour coated granite shall be permitted.

10.0 CONDITIONS FOR CEMENT

i) The contractor shall procure Ordinary Portland Cement (OPC) 43 Grade as per IS 8112 : 1989/ Portland Pozzolana Cement (PPC) [conforming to IS:1489 (Part-I)], as required in the work, from reputed manufacturers as per given in preferred make list in Chapter D of this NIT. Supply of cement shall be taken in 50 Kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.

ii) PPC (Portland Pozzolana Cement) shall be used in RCC structures in accordance with the circular issued by the Directorate General of Works vide No. CDO/SE(RR)/Fly Ash (Main)/102 dt.09.04.2009. The use of PPC shall be regulated as per the following conditions stipulated in the circular dt.09.04.2009: -

a. IS:456-2000 Code of Practice for Plain and Reinforced Concrete (as amended upto date) shall be followed in regard to Concrete Mix Portion and its production as under:

i) The concrete mix design shall be done as "Design Mix Concrete" as prescribed in clause-9 of IS: 456 mentioned above.

ii) Concrete shall be manufactured in accordance with clause 10 of above mentioned IS:456 covering quality assurance measures both technical and organizational, which shall also necessarily require a qualified Concrete Technologist to be available during manufacture of concrete for certification of quality of concrete.

b. Minimum M30 grade of concrete shall be used in all structural elements made with RCC both in load bearing and framed structure.

i. The mechanical properties such as modulus of elasticity, tensile strength, creep and shrinkage of fly ash mixed concrete or concrete using fly ash blended cements (PPCs) are not likely to be significantly different and their values are to be taken same as those used for concrete made with OPC.

ii. To control higher rate of carbonation in early ages of concrete both in fly ash admixed as well as PPC based concrete, water/binder ratio shall be kept as low as possible, which shall be closely monitored during concrete manufacture.

If necessitated due to low water/binder ratio, required workability shall be achieved by use of chloride free chemical admixtures conforming to IS: 9103. The compatibility of chemical admixtures and super plasticizers with each set OPC, fly ash and /or PPC received from different sources shall be ensured by trails.

iii. In environment subjected to aggressive chloride or sulphate attack in particular, use of fly ash admixed or PPC based concrete is recommended. In case, where structural concrete is exposed to excessive magnesium sulphate, fly ash substitution/content shall be limited to 18% by weight. Special type of cement with low C3A content may also be alternatively used. Durability criteria like minimum binder content and maximum water/binder ratio also need to be given due consideration is such environment.

iv. Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot & arid regions, the minimum curing period shall be 14 days or its equivalent.

v. Subject to General Guidelines detailed out as above, PPC manufactured conforming to IS: 1489 (Part-I) shall be treated at par with OPC for manufacture of Design Mix Concrete for structural use in RCC.

vi. Till the time, BIS makes it mandatory to print the %age of fly ash on each bag of cement, the certificate from the PPC manufacturer indicating the same shall be insisted upon before allowing use of such cements in works.

vii. While using PPC for structural concrete work, no further admixing of fly ash shall be permitted.

viii. The cement shall be brought at site in bulk supply of approximately 50 tones or as decided by the Engineer-in-charge.

ix. The cement godown of the capacity to store a minimum of 2000 bags of cement shall be constructed by the contractor at the site of work for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-charge at any time.

x. The cement shall be got tested by Engineer-in-charge and shall be used on work only after test results have been received. The contractor shall supply free of charge the cement required for testing. The cost of tests shall be borne by the contractor.

xi. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions therein.

xii. Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

xiii. Damaged cement shall be removed from site immediately by the contractor on receipt of notice in writing from the Engineer-in-charge. If he does not do so within three days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

xiv. Cement should be kept in godowns and its consumption account invariably maintained, whether the cement is supplied departmentally or arranged by the contractor. A register should be maintained at the site. This register should contain the columns as shown in Annexure-30 of SOP for CPWD Works Manual 2022.

xv. The pages of the register should be machined numbered and each page initialed by the EE. The cement godown and the register are required to be checked by the AE/EE in-charge of the work as per following schedule-

a. At least weekly or fortnightly, respectively in case of works at the Headquarters of AE/EE

b. Whenever they visit the site located at RMRC, Lahoal Dibrugarh, Campus.

11. Additional & special conditions for Steel Reinforcement

11.1 The Steel reinforcement bars should be minimum Fe500D of manufacturers as per given in preferred make list of this NIT.

11.2 The contractor shall obtain manufacturers certificate stating the process of manufacture, chemical composition and test sheet giving results of each mechanical test applicable to the material purchased and submit it to Engineer-in-charge. Each test certificate shall indicate the number of the cast to which it applies, corresponding to the number or identification mark to be found on the material.

11.3 Chief Engineer/CPM/PM shall approve the steel manufactures for projects under their jurisdiction

i. The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

ii. The Engineer-in-charge shall get each consignment tested for both chemical composition and physical properties (including bend and re-bend test) as specified in IS:1786 from NABL accredited laboratory or any Government laboratory. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.

iii. The steel reinforcement bars shall be brought to the site in bulk supply of ten tonnes or more as decided by the Engineer-in-charge.

iv. The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

v. For checking nominal mass, tensile strength, bend test, re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10mm dia. bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10mm to16mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof

Over 16mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

vi. The contractor shall supply free of charge the steel required for testing including transportation to testing laboratories. The cost of tests shall be borne by the contractor.

vii. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as procedure prescribed in clause 38 of the GCC and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment needs to be made.

viii. Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

ix. Steel should be kept in steel yard and its consumption account invariably maintained. A register should be maintained for this purpose at the site. This register should contain the columns as shown in Annexure-64 of SOP for CPWD Works Manual 2022.

x. On receipt of each and every lot of steel, sample weight shall be recorded by taking at least 3 samples for each dia of steel. This shall be recorded in a separate register and shall be got verified by the JE & AE of the site and 50% samples shall be checked by EE. These samples be retained at site till the completion the work.

xi. The following procedure should be followed in case of removal of rejected/sub-standard materials from the site of work.

a. Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the site order book under the signature of the AE/AEE giving approximate quantity of such materials.

b. As soon as the material is removed, a certificate to that effect may be recorded by the AE/AEE against the original entry, giving the date of removal a mode of removal i.e. whether by truck, carts or by manual labour. If removal is by truck, the registration number of the truck should be recorded.

c. When it is not possible for the AE/AEE to be present at the site of work at the time of actual removal of the rejected/sub-standard materials from the site the required certificate should be recorded by the Junior Engineer and the AE/AEE should countersign the certificate recorded by the Junior Engineer.

11.4 REINFORCEMENT:

The reinforcement work shall be done as per CPWD Specifications 2019, Volume-I & II with revisions/ amendments / correction slips upto last date of bid submission (including extensions if any).

Reinforcement work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.

The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as mentioned in the drawings. Spacer blocks of required shape and size, chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. To ensure proper cover, factory made round / rectangular type cover blocks will be used to avoid displacement of bars in any. Couplers shall be used for splicing of reinforcement bars.

Reinforcement TMT bars, to be used for the work, shall be TMT bars of grade Fe 500D.

11.5 Bar Bending Schedule:

The agency shall prepare bar bending schedule as per structural drawings and submit to Engineer-in-Charge in advance for approval. The bar bending schedule shall conform to Indian Standard IS 2502-Code of Practice for Bending and Fixing of bars for Concrete Reinforcement. Before execution of work, two copies of these bar bending schedules including revision will be submitted to Engineer-in-Charge for approval. Keeping in view the quantum of the work, the BBS shall preferably be prepared with software and one person acquainted with preparing BBS with software shall be deputed at site to speed up the work.

12. The MAS Register should include following details at the time of supply / issue of the plants and other materials:

(i) The details of bills / challans in respect of supply of the plants and other materials.

(ii) The details about transportation of the materials / plants at site like Vehicle / Lorry registration no.

(iii) Specific location where materials / plants displayed / delivered / issued.

(iv) Proforma for MAS Register is given :

1. Section / Sub-Division : _____
2. Name of Work : : _____
3. Name of Article / Item : _____
4. Estimated Requirements : _____
5. Issue Rate:_____

Sl. No.	Date of Receipt (Details of Challan / Bills, Specific location where Plants and Materials received / Vehicle No.	Received from / Issue to	Quantity Received	Date of issue	Specific location where Plants & Materials Displayed / Delivered / Issued	Quantity issued	Balance Quantity	JE/SO (H)/AE/AD(H) (or equivalent) initials	Remarks
1.									

13. HARDWARE FOR DOORS/WINDOWS:

All the hardware's, locks, SS hinges of required thickness & size as per CPWD specifications and other fittings like tower bolts, sliding bolts, handle door stopers, click plates etc. shall be provided of SS grade 304 as per requirement in the door/window shutters as per CPWD specifications and as per direction of Engineer-in-charge.

14. uPVC WINDOWS & VENTILATORS:

a. Profile: As per CPWD specifications 2019 with up-to date correction slips.
b. Fabrication of Windows &Doors:- As per CPWD specifications 2019 with up-to date correction slips.
c. Reinforcement:- As per CPWD specifications 2019 with up-to date correction slips.
d. Glazing/Wire Mesh :- As per CPWD specifications 2019 with up-to date correction

slips.

e. Glazing gasket & weather Pile Strip/Wool Pile:- As per CPWD specifications 2019 with up-to date correction slips.
f. Window/Door hardware &fittings:- As per CPWD specifications 2019 with up-to date correction slips.
g. Installation:- As per CPWD specifications 2019 with up-to date correction slips.
h. Precautions taken before installation of uPVC window &doors:- As per CPWD specifications 2019 with up-to date correction slips.
i. Design Methodology for uPVC window:- As per CPWD specifications 2019 with up-to date correction slips.
j. Quality Control &testing(Criteria for conformity):- As per CPWD specifications 2019 with up-to date correction slips.

15. Earth work:

15.1 The work shall be done in accordance with CPWD Specifications - 2019 - Vol. -I & Vol. II and National Building Code 2016 with up-to date correction slips.

15.2 Excavation shall be undertaken to the width of the Basement / Retaining wall footing including necessary margins for construction operation as per drawing or directed otherwise. Where the nature of soil or the depth of the trench and season of the year, do not permit vertical sides, the contractor at his own expense shall put up the necessary shoring, strutting and planking or cut slopes with or without steps, to a safer angle or both with due regard to the safety of personnel and works and to the satisfaction of the Engineer. Nothing extra shall be paid for making steps and slopes etc. as required.

15.3 As per approved structural and architectural drawings, foundation of the building shall be excavated with most secured and advance method. Contractor shall use all safety equipment and measures during excavation of the foundation. The contractor shall make at his own cost all necessary arrangements for maintaining water level, in the area where works are under execution low enough so as not to cause any harm to the works or problems in carrying out with the execution and the rates for all items of work shall be considered as inclusive of pumping out or bailing out water, if required, for which no extra payment shall be made. This will include water coming from any source, such as rains, accumulated rain water, floods, leakages from sewer and water mains, subsoil water table being high or due to any other cause whatsoever. During and after excavation, if the sub soil water, rain water, and water from any source percolate in the foundation trench, then contractor shall arrange most suitable method to bail out of this water to the nearest drain. The contractor shall make necessary provision of pumping, dredging, and bailing out water coming from all above sources and excavation and other works shall be kept free of water by providing suitable system approved by the Engineer-in-charge.

15.4 The contractor shall at his own cost make all necessary arrangements for stabilization of slope, construction of temporary retaining structure e.g. diaphragm wall, cofferdam, anchor pile, shoring or Shuttering required for retaining of earth during excavation.

15.5 All the major excavation shall be carried out by mechanical excavator. No extra payment shall be made for that.

16. **MASONRY WORK:** Common Burnt clay bricks of grade 7.5 with CM 1:6 (1 Cement :6 Coarse sand) to be provided up-to plinth level as per agreement item of SOQ. For superstructure AAC Block masonry shall be done as per item of SOQ.

The masonry work shall be done as per CPWD Specifications 2019, Volume-I & II with revisions / amendments / correction slips up-to last date of bid

submission (including extensions if any). In case of conflict or contradiction between detailing shown in drawings and specification mentioned herein under this subhead, the specification mentioned herein under this subhead will be followed.

AAC blocks masonry shall be of Grade I and of oven dry density 551-650 kg/cum with polymer modified adhesive mortar above plinth level except wet areas. The polymer modified adhesive mortar shall be provided @ 30 kg per cum. AAC Block confirming the IS Code – 2185 (Part-3) 1984 (Reaffirmed 2005) shall be used.

i. Dimensions & Tolerances: Autoclave Aerated Concrete Block shall be made in sizes and shapes to fit different needs.

ii. The maximum variation in the length of the Autoclave Aerated Concrete Block shall not be more than plus/minus 5mm and maximum variation in the height and width of Autoclave Aerated Concrete Block, not more than plus/minus3mm.

iii. The faces of Autoclave Aerated Concrete Block shall be flat & Rectangular, opposite faces shall be parallel and all arises shall be square. The bedding surfaces shall be at right angle to the face of the Blocks. The Autoclave Aerated Concrete Block with special faces shall be manufactured and supplied if so required.

iv. The autoclaved Autoclave Aerated Concrete Block shall be classified in two grades according to their compressive strength as indicated in table below:

Sl. No.	Density in Oven dry Condition (Kg/m3)	Compressive Strength(N/mm2)		Thermal Conductivity in air dry condition (W/m. k)
		Grade I	Grade II	
1	451 to 550	2.00	1.50	0.21
2	551 to 650	4.00	3.00	0.24
3	651 to 750	5.00	4.00	0.30
4	751 to 850	6.00	5.00	0.37
5	851 to 1000	7.00	6.00	0.42

v. All Autoclave Aerated Concrete Block shall be sound, free of cracks or other defects which interfere with the proper placing of block units impair the strength or performance of the construction. Where block units are to be used in exposed wall construction, the face or faces that are to be exposed shall be free of chips, cracks or other imperfections except that if not more than 5% of a consignment contains slight cracks or small chippings not larger than 25mm, this shall not be deemed grounds for rejection.

vi. Block Density – The Block density shall conform to the requirements specified in above table, when tested accordance with IS 6441 (Part-1) -1972.

vii. Compressive Strength – The min. compressive strength being the average of twelve block units shall be as prescribed in above table, when tested accordance with accordance with IS 6441 (Part-5)-1972.

viii. Thermal Conductivity – The thermal conductivity shall not exceed the values specified in above table when tested accordance with IS 3346-1980.

ix. Drying Shrinkage – The drying shrinkage shall be not more than 0 .05% for grade –1 block and 0.10% for grade-2 block when tested accordance with IS 6441 (Part-2)-1972.

x. Number of tests: A sample of 24 blocks shall be selected at random. All the 24 Blocks shall be checked for dimensions and inspected for visual defects. Out of the 24 blocks, 12 blocks shall be subjected to the test for compressive strength, 3 blocks to the test for density, 3 blocks to the test for thermal conductivity and 3 blocks to the test for drying shrinkage. The remaining 3 blocks shall be reserved for re-test for drying shrinkage if a need arises.

xi. The samples of AAC blocks (each sample consisting of 6 specimen) shall be chosen randomly from the lot procured and tested for various parameters specified as above. One samples shall be tested for every 200 cum or part thereof. However, minimum one sample shall be tested from each lot received at site if the quantity procured in the lot is less than 200 cum. If required, Engineer-in-Charge or his authorized representative shall inspect the factory during production of the material for this work and also collect samples (of materials used for making AAC blocks and precast AAC blocks) from the factory itself. The contractor shall consider this contingency also while placing the order with one of the approved firms. Nothing extra shall be payable on this account.

xii. Criteria for conformity: The number of blocks with dimensions outside the tolerance limit and or with visual defects, among those inspected, shall not be more than two. For density, the mean value shall be within the range as specified in above Table. For compressive strength, the mean value, say X shall be determined. The test results shall be grouped into groups of 4, individual values of ranges shall be determined, the average range a calculated from these values and shall satisfy the following condition: X - 0.6 R >minimum value specified in above Table. For thermal conductivity, the mean value shall be equal to or less than the value specified in above Table. For drying shrinkage, all the test specimens shall satisfy the requirements of the test. If one or more specimens fail to satisfy the requirements, the remaining 3 blocks shall be subjected to these tests. All these blocks shall satisfy the requirements.

xiii. Manufacturer's Certificate: The manufacturer shall satisfy him that the masonry units conform to the requirements of this specification and, if requested, shall supply a certificate to this effect to the purchaser or his representative.

17. All works carried out as per CPWD Specifications 2019 Vol – I, Vol - II & DSR Vol I, Vol II in roads works MoRTH specification also be followed.

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..... son of .....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

1.

LIST OF MATERIALS OF PREFERRED MAKE

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 ate not available in the market, contractor shall submit alternative proposal to Engineer-in-Charge for the approval of NIT approving authority.

Sl No.	Materials	Brand / Manufacturer Name
1.	(i) Ordinary Portland Cement – 43 Grade	ACC, Ultratech, Ambuja Cement, J.K. Cement, Jaypee Cement, Dalmia Cement.
	(ii)Portland Pozzolona Cement	ACC, Ultratech, Ambuja Cement, J.K. Cement, Jaypee Cement, Dalmia Cement
	(ii) White Cement	Birla White, J.K. White
2.	Reinforcement Steel	SAIL, Tata Steel Ltd., RINL, JSW, Jindal steel power ltd.
3.	Water Proofing Compounds, ,	Fosroc, Pidilite Industries, Sika, ArdexEndura.
4	Admixtures, Plasticizer, Super Plasticizer,	Fosroc, Pidilite Industries, Sika, ArdexEndura
5	Curing Compounds	Fosroc, Pidilite Industries, Sika, ChoksyChemical ,CICO.
6.	Integral Water Proofing compound with cement (For Plaster & Mortar)	Fosroc :Conplast 421, Dr. Fixit : LW+ Sika :Sikacin Masterproof IWP 1 ArdexEndura Choksy Chemical, CICO.
7.	Water proofing for roof/bathroom/toilet/ balcony, tanks & other wet areas	Choksy Chemical, Fosroc : Brush Bond Techforce 2K Stromg Dr. Fixit : Pidifine 2K Sika :Nito Bond ArdexEndura
8.	Crystalline water proofing compound	ChoksyChemical ,CICO.
9	Waterproofing HDPE Membrane for raft and retaining wall	Pidilite, Fosroc
10	Waterproofing for self-adhesive membrane (retaining wall)	Pidilite, Sika, Choksy Chemical, CICO.
11	Waterproofing of roof and podiums with PU/Polyisoprene	Pidilite, Sika, Choksy Chemical, CICO
12	Food Grade epoxy for tanks	Pidilite, Sika, Choksy Chemical, CICO
13	Coal Tar Epoxy	CICO, Pidilite, Fossor, Shalimar.
14	Grouts, Tile Adhesive	Latecrete, Kerokoal, ArdexEndura, Ferrous Crete.
15.	Structural Steel	SAIL, Tata Steel, RashtriyaIspat Nigam Ltd. (RINL) and JSW Steel Ltd., Jindal Steel & Power Ltd.
16	Steel door frames as per design	Apollo steel pipes, Jindal,Tata or equivalent
17	Polycarbonate sheet	GE Plastic, LEXAN, DPI Daylighting

18	Profile steel sheet (Precoated)	Ezydeck of TATA, Lloyd Superdeck, JSW/Jindal India Limited, Spectrum roofing.
19	Particle Board	Kitply, Action TESA, Greenlam, Merino.
20	WPC (Wood Polymer Composite) board	ALSTONE, GREEN PLY, Tata pravesh, Vardhman,
21	Laminated Particle Board/Laminates	Kitply, Action TESA, Greenlam, Century Ply, Merino
22	Flush door shutters	Merino, Duro, Kitply Industries (Swastik), Century, Durian, Green Ply, Jayna.
23	Fire Rated Doors	Signum Fire Protection, Shakti Metdoor, NAVAIR, Adhunik Technology, Sukri, Promat International.
24	False Ceiling System	Armstrong, Hunter Douglas, USG Boral, Saint Gobain, Aerolite, Durlum, Interarch.
25	Plywood/Veneer	Green Ply, Century, Merino, Kitply, Jayna, Rajshri
26	Melamine Polish	Asian Paints Melamine Gold, Wudfin of Pidilite, Timbertone of ICI Dulux.
27	Modular kitchen and furniture items	Godrej, Jindal Stainless Steel, Mettas Life Style, Hermon Miller, Howarth
28	Floor Spring & Door Closure	Godrej, Dorma, Hafele, Geze, AssaAbloy, Global ,Yale
29	(a) Aluminium Section	Hindalco, Jindal, Indian Aluminium Co.
	(b)AnodisedAluminium Hardware (Heavy Duty)	Kilong, Alualpha, Classic, Ebco, Global
	(c) Aluminium sliding door roller etc.	TPI, Classic or equivalent
30	Clear/Float/Frosted/Reflective/ Coated Glass	Saint Gobain, AIS, Modiguard
31	Stainless Steel Railing, Accessories etc.	TATA, JINDAL, Dorma, Giesse, Godrej, Hardwyn
32	S.S. Door & Window Fittings	Jindal, Dorma, Dorset, Godrej, Ozone.
33	Aluminum Door & Window Fittings	Global,Jindal,Dorma, Doorset,
34	Silicon based water repellant/Weather sealant	G.E. Plastics, Dow Corning, (Wacker), BASF, Pidilite (Dr. Fixit/Roff)
35	Poly-Sulphide Sealant	Fosroc, Pidilite , Sika,
36	Mosaic tiles/Chequered Tiles	Ultra Tiles, NITCO, Kajaria, Johnson
37	Ceramic Tiles	Kajaria, RAK, Somany, Jhonson.
38	Vitrified Tiles (Antiskid/Matt/Glazed)	Kajaria, RAK, Somany, Jhonson.
39	Dash/Anchoring Fasteners	HILTI, Fischer, Bosch, Wurth
40	Cement Based Wall Putty	Birla wall care, JK White, Berger, Asian Paints
41	Oil Bound Washable Distemper/Dry Distemper	Asian Paints (Professional Acrylic Distemper),Nerolac : Beauty Acrylic Distemper Berger : Bison Acrylic Distemper Dulux ICI :Maxilite
42	1st Quality Acrylic Distemper (washable/Ready Mix/Low VOC)	Asian Paints (Tractor Aqua Lock Paint) Berger :Commando , Dulux, Nerolac
43	Premium Acrylic Emulsion Paints (Interior)	Asian Paints (Royale Luxury Emulsion Nerolac : Impression

		Berger : Silk Dulux : Velvet touch
44	Textured Exterior Paint	Asian Paints, Nerolac, Berger Paints
45	Premium Acrylic Smooth Exterior Paint with silicon additive	Asian Paints : (Apex Ultima) Nerolac : XL Total Berger : Weather Coat all guard Dulux : Weather Shield max
46	Synthetic Enamel Paint	Asian (Apcolite Premium gloss enamel), Nerolac : Synthetic Hi gloss Berger :Luxol Hi gloss Dulux : Gloss Synthetic enamel
47	Cement Primer	Nerolac, Berger, BP White (Berger), Decoprime WT (Asian), White Primer, Dulux.
48.	Steel Primer (Red Oxide Zinc Chromate Primer)	Asian Paints, Nerolac, Berger, Dulux.
49.	Wood Primer	Asian Paints (Wood Primer- White/Pink), Berger ,Dulux, Nerolac.
50.	Epoxy Paint	Asian Nerolac, Berger, Dulux, Kansai Akzo Nobel,
51.	Fire Paint	Asian Paint, Akzo Nobel Coatings India Ltd. PROMAT, Jotun
52.	G.I./M.S. Pipe	Tata, Jindal (Hisar)
53.	G.I. Fittings	Unik, AVAR, Zoloto, Leader
54.	HDPE Pipes	Reliance, Jain Pipes, ORIPLAST, Supreme
55.	DI Pipes	Electosteel, Jindal, Tata Ductura, Kesoram, kpilanger
56.	DI Fittings	Electosteel, Jindal, Tata Ductura, kapilangle, Kesoram,kpilanger
57.	uPVC pipe and fittings	Astral, Supreme, Ashirwad, Fusion
58.	Centrifugally Cast (spun) Iron pipes & fittings	NECO, Electrosteel, HEPCO, RPMF
59.	C.I. Manhole covers, frames & GI gratings	NECO, RAJ Iron Foundary Agra, SKF, kpilanger
60.	SFRC Manhole covers & gratings	KK, JAIN, PARGATI,Dalal or equivalent
61.	CP Brass fittings	Jaquar, Grohe, Roka, Kerovit, Kohler.
62.	Sanitary ware, Fittings & accessories	Jaquar, Kohler, Glocera,Kerovit, Toto
63.	Mirror Glass	Atul, Modi Guard, Golden Fish, Saint-Gobain
64.	CPVC pipe & Fitting	Astral, Supreme, Ashirwad, Fusion, Prince.
65.	Stainless Steel Sink	Neelkanth, Jyna
66.	uPVC doors & Windows	VEKA, Fenesta, Kommerling, Aluplast, Duroplast, Deotch, Alupast.
60	uPVC doors and window hardwares	Oben, Kinlong, Cotswold, GU, Rotto
68.	Extruded Polystyrene Insulation Board	Dowcorning, Supreme, Taxas, Analco
69.	Heat Resistant Tiles	Swastik, Thermatek,Dalal
70.	Gypsum Plaster	Ferrous Crete, Gyproc Saint-Gobain, J.K.
71.	External plaster (Polymer modified white cement based matt finish putty)	Birla white levelplast, J.K. Coarse Putty

72.	Floor hardener	Ironite, Ferrok, Hardonate
73.	Modular expansion joint	Herculus, Sanfield India Ltd. Vexcolt, VSIL, DECG International or equivalent
74.	Glass Wool	Dow Corning, U.P. Twiga, Isover
75.	AAC Block Adhesive	Ultratech, ArdexEndura, Ferrous Crete
76.	Stainless Steel pipe for water supply and fittings	Jindal, J-Press, Geberit, Viega
77.	AAC Block	Ultratech, Max or equivalent, Green AAC Block,Briko-o-lit, TAJ ACC Blocks, AUSTIN
78.	Cement bonded wood Particle Board	Bison (NCL), Century or equivalent
79.	Spider Fittings	Dorma, Godrej or equivalent
80.	RIGID cellular GEOFOAM	Modi Foam, Vishalfoam or equivalent
81.	Modular toilet Cubical	Merino or equivalent
82.	Glass Shower enclosure	Jaquar, Ozone, Dorma or equivalent
83.	EPDM & Silicon Gasket	Amee Rubber, Osaka, Eltech, Avigiri
84.	Backer Rod	Supreme Industries
85.	Paver Blocks	Basant Batten, Pavers India Pvt. Ltd., Pavitcement ,Dalal or equivalent
86.	Garbage chute system	Unitech, Sigma or equivalent
87.	Glass fiber mesh	Gyproc, Shri Aradhya or equivalent
88.	SS curtain rod with fittings	Vista, Marvel or equivalent
89.	PPR Pipes	KPT, Fusion or equivalent
90.	Thermoplastic Road Marking	Prime Line of Prime roads or equivalent.
91.	PVC water storage tank	Sintex, Supreme, Polycone.
92.	FRP Door frames	Jaina,Fiberways, Rajshree.
93.	High Pressure Laminate (HPL)	Greenlam,Eurobond ,Reynoarch or equivalent.
94.	Signage	3M, or equivalent.
95.	Aluminium Composite Panel (ACP)	Aludecor and equivalent.
96.	PVC door and frame	Jaina, Fiberways, Rajshree.

Note:-

(a) The contractor shall provide the materials as per the Make or Brand indicated above, any change in the brand mentioned above is to be approved by Chief Engineer before taking supply at site

(b) 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.

(c) All other items shall be of ISI marked/as per approved sample kept at site of work.

SCHEDULE OF WORK(Civil)

Name of Work:- Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.

Sl. No.	Description of Item	Quantity	Unit	Rate	Amount(Rs)
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	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	47.00	Cum	7878.50	370290.00
1.2	1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size)	19.00	Cum	6189.65	117603.00
2	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.				
2.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	54.00	sqm	3653.20	197273.00
3	Providing and fixing ball bearing for rolling shutters.	6.00	each	492.35	2954.00
4	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
4.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	110.00	sqm	226.25	24888.00
5	Distempering with 1st quality acrylic distemper (ready mixed) having VOC (Volatile Organic Compound) content less than 50 gram/ litre, of approved brand and manufacturer including applying additional coats wherever required to achieve even shade and colour				
5.1	Old work (one or more coats)	640.00	Sqm	62.70	40128.00
6.0	Painting with aluminium paint of approved brand and manufacture to give an even shade				
6.1	One or more coats on old work	332.00	sqm	96.00	31872.00

7	Finishing walls with Acrylic Smooth exterior paint of required shade :				
7.1	Old work (Two or more coat applied @ 1.67 ltr/ 10 sqm) on existing cement paint surface).	210.00	Sqm	120.75	25358.00
8	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 within 50 metres lead :				
8.1	With cement mortar 1:4 (1cement: 4 coarse sand).	15.00	Sqm	560.50	8408.00
9	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
9.1	Of area beyond 3 sq. metres	6.00	each	502.75	3017.00
10	Providing and laying 80mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	182.00	sqm	972.00	176904.00
				Total	**9,98,695.00**
	Modified Estimated Cost after using Correction factor of 0.973 on DSR'2023 issued vide e file No:- 9158977 dated 08-08-2024,	**998695.00**		**0.973**	**9,71,730.00**
	Add cost index @22.43% over DSR 2023	971730.00		22.43%	2,17,959.04
				Total	**11,89,689.04**
11	Deduct for the credit on account of cost of dismantled unserviceable material/articles including removal and disposal from the site (the dismantled unserviceable material shall become the contractors property), cleaning the site all complete as per direction of engineer in charge (Dismantle rolling shutter).	350.00	kg	-16.61	-5814.00
				Total	**₹ 11,83,875.04**
				Say	**₹ 11,83,875.00**

Executive Engineer - Dibrugarh

PART – C

PERFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities (as per PWD-3)	:	Attached

SCHEDULE 'D'

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

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	:	Provision of Special Repairs of Vehicle Garage at RMRC, Dibrugarh (Electrical Work).
Estimated cost of work	:	**Rs.** 3,01,752/-
1) Earnest money	:	**As per Part A**
2) Performance Guarantee	:	**As per Part A**
3) Security Deposit	:	**As per Part A**

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS:

Officer Inviting Tender	:	As per major component
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 or successor thereof.
2(viii)	Accepting Authority	:	As per major component
2(x)	Percentage on cost of materials and labour to cover all overheads and profits.	:	15%
2(xi)	Standard Schedule of Rates	:	**DSR - 25 & Market Rates**
2(xii)	Department	:	Central Public Works Department
9(ii)	Standard CPWD contract Form GCC 2023(**Maintenance work**), C.P.W.D Form **7 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.	:	As per Part A

(ii)	Maximum allowable extension with late fee @ 0.10% 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	:	Chief Engineer, Guwahati CPWD, Guwahati- 781035 or successor thereof.

Clause 2 A

Applicable clause 2/ Clause 2A	:	Clause 2A

Clause 5

Number of days from the date of issue of letter of acceptance of work for reckoning date of start	:	As per Part A

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)~~
~~1.~~	~~Financial Progress of work 25%~~	~~1.0 months~~	~~1.50%~~
~~2.~~	~~Financial Progress of work 50%~~	~~2.0 months~~	~~1.50 %~~
~~4~~	~~Financial Progress of work 100%~~	~~3.0 months~~	~~2.00 %~~

Time allowed for execution of work	:	As per Part A

Authority to decide:

(i)	Extension of time under clause 5	:	As per major component
(ii)	Rescheduling of mile stones	:	As per major component
(iii)	Shifting of date of start in case of delay in handing over of site.	:	As per major component

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
Part B	Portion with encumbrances	**Nil**	**NA**
Part C	Portions dependent on work of other agencies	**NA**	**NA**

Clause 5	:	Applicable clause 5/ ~~Clause 5A~~

Clause 6

Mode of Measurement Book (CMB) / Electronic Measurement Book (EMB)	:	Computerized Measurement Book (CMB)/ ~~Electronic Measurement Book (EMB)~~

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.	:	As per major component

Clause 7A

Whether applicable or not applicable	:	**Yes Applicable**

Clause 10A		Not Applicable
List of testing equipment to be provided by the contractor at site lab	**:**	**1.** …… **2.** …… **3.** …… **4.** …… **5.** …… **6.** ……

Clause 10-B (ii)

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

Clause 10 C **: Not Applicable**

Component of labour expressed as percentage of value of work	:	85%

Clause 10 CC	**:**	Not Applicable
~~Schedule of component of other Materials,~~ Labour etc. for price escalation. Component of civil (except materials covered under clause 10CA) /Electrical construction value of work. –		Xm ..... %
Component of Labour - expressed as percent of total value of work.	**:**	Y ....%

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

Clause 11

Specifications to be followed for execution of work	:	CPWD Electrical Specifications Internal - 2023,CPWD Electrical Specifications External- 2023, Additional Specifications attached with this NIT document.

Clause 12	:	
Nature of work		**Maintenance Work**

Clause 12.2

Deviation limit beyond which clause 12.2 shall apply for building work.	:	100%

Clause 16

Competent Authority for deciding reduced rates	:	Chief Engineer, Guwahati CPWD, Guwahati-35 or successor thereof.

Clause 18

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

All tools and tackles required for successfully maintained the installation.

Clause 19 C	Authority to decide penalty for each default	:	As per part A
Clause 19 D	Authority to decide penalty for each default	:	As per part A
Clause 19 G	Authority to decide penalty for each default	:	As per part A
Clause 19 K	Authority to decide penalty for each default	:	As per part A

Clause 25

Conciliator	ADG (Guwahati) or successor thereof.
Arbitrator Appointing Authority	CE, Guwahati or successor thereof.
Place of Arbitration	Guwahati

Clause 32

Requirement of Technical Representative (s) & recovery Rate

~~Sl. No~~	~~Minimum Qualification of Technical~~	~~Number~~	~~Minimum Experience (years)~~	~~Designation (Principal Technical / Technical representative~~	~~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 or Diploma Engineer~~	~~1~~	~~2 or 5 respectively~~	~~Project Manager cum Planning/Quality Engineer (Electrical)~~	~~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.

(MEMORANDUM OF UNDERSTANDING)
(Separate for each specialized work)

This MOU made at …… on …… between the …… and the terms "Main Agency" shall mean and include its administrators, executors and assignee on ONE PART.

AND

Associate agency having its office at ……OTHER PART.

WHERAS, the Main agency has agreed to entrust the work/project relating to ……(name of work) at …… hereinafter referred as "Project" to Associate agency on the terms and condition set forth hereinafter and where as Associate agency has agreed to undertake and complete the work/project accordingly.

NOW, IT IS HEREBY AGREED BETWEEN THE PARTIES AS UNDER: -

1. The associated work contractor will execute all works in the wholesome manner as per terms &conditions of the agreement. Any type of internal transaction between the associate contractor and main contractor shall be as per their convenience and mutual understanding without involving the department. Security deposit shall be deducted as per agreement.
2. The work contractor shall be liable for disciplinary action and other legal actions as per agreement if he fails to discharge obligation as per this agreement besides forfeiture of the security deposit.
3.All the machinery and Equipment, tools and tackles required for execution of the E & M works, as per agreement shall be the responsibility of the associate contractor.

SIGNATURE OF MAIN CONTRACTOR	SIGNATURE OF ASSOCIATED CONTRACTOR
Date : Place:-	Date: Place:-

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.

GENERAL TERMS AND CONDITIONS

1. **Location**

   Vehicle garage at RMRC, Dibrugarh.

2. **Related Documents**

   These additional specifications are to be read in conjunction with the specification given in the tender. In case any item/items or part thereof are not covered under these specifications, the same shall be carried out as per relevant part of the CPWD **General Specification for Electrical Works Part-I Internal -2023, Part -II External -2023, Part VII D.G. Sets - 2013, Sub station equipment – 2013 as amended upto date,** relevant I.E. rules, BIS/IEC and as per direction of Engineer-in-Charge. These additional specifications are to be read in conjunction with above and in case of variations; specifications given in this additional condition shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read along with schedule of quantities for the work. In addition to this if required the instruction of Government of Assam shall be followed for execution of work. Such as DG set, H.T. line, sub-station, Lift etc. In case of discrepancy among the specifications/conditions as mentioned above the precedence given in general condition of contract shall be followed.

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) Additional and Commercial Conditions
   (iii) Technical specifications specified in the tender
   (iv) General Conditions of Contract for CPWD Works
   (v) Drawings
   (vi) CPWD General Specifications
   (vii) Relevant IS or any other International code in case IS code is not available.

5. **Site Information**

i) The work will be installed at **Vehicle garage at RMRC, Dibrugarh.** The tenderer should, in his own interest, visit the site and familiarize himself with the site conditions before tendering.

ii) 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 in 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) Due to security constraints, all the working personal may not be allowed to carry the mobile phone or any other electronic gadgets. The instruction of security personal in this regard shall be followed religiously.

j) Therefore in view of the situation explained under above paragraphs the tenderer must visit the site and must get himself acquainted with the proposed site of work, study specifications and conditions carefully before tendering rates. Nothing extra shall be paid on account of compliance of any of these clauses. The hindrance due to security constraints shall be not be accounted towards adjustment of completion time mentioned in the tender document.

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

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 Specification for C.P.W.D. general Specification Part-I (Internal) 2023, General CPWD specification for Electrical works (External) Part-II – 2023, General CPWD specification for Electrical works Part – IV (Sub Station) – 2013, with up to date correction slips.

7. Safety Codes and Labour Regulations

i) In respect of all labour employed directly or indirectly on the work for the execution of the Motor pump set, DG set, sub-station & Transformer, public address and integrated management system contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provision, B.I.S.

recommendations, factory act, and workman's compensation act. CPWD code and instructions issued form 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 form 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 form during the execution of work. The contractor to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.

8. Works to be Arranged by the department

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

ii) 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 as "Annexure-III". 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 latter 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 of CPWD-7 shall be given priority.

iii) Submission of Drawings

The contractor shall submit the drawings for cubical panel board according to site conditions to the Engineer-in-Charge for approval before dispatch of material from the factory.

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 contactor shall dispatch material to site in consultation with the Engineer-in-Charge after approval of drawings as mentioned above. The arrangement to make storage of materials etc. and Watch and ward shall be responsibility of the contractor. Program of dispatch of material shall be framed keeping in view of

progress of work. Safe custody of all machinery and equipment supplied by the contractor shall be the responsibility of the contactor 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 major items covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in detail in the tender documents in connection with this contract as this is a turnkey job.

17. Compliance with Regulations and Indian Standards:

a. 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. ECBC 2017
vii. NBC 2016

b. 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.

c. 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 DISPATCH**~~

~~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.~~

23. 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.

22. 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.

23. 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.

24. 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.

25. QUALITY ASSURANCE PLANS

A) 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 to be checked.

E&M Services should strictly follow quality Assurance policy & checklist for E&M services published by CPWD in 2013. Final Inspection and testing will be done by the Engineer-in-Charge or his representative.

Note :- All the testing plans should be followed as per Chapter 5 of quality assurance policy for E&M works.

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 ~~& High Mast Pole)~~ / 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 contactor 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 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 contactor 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. LED fittings i/c driver as a whole shall be guaranteed for 5 years.

(iii) 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.

(iv) **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.

29. (a) Statutory deduction of GST, Tax as applicable shall be deducted at source from each running /final bill payment. A certificate of TDS shall be issued by the department to the contractor.

(b) Further @ 2% Royalty of minor mineral shall be deducted at source from each running /final bill payment as per Finance Department, Guwahati vide order No. FEB.28/2016/pt/25 dated 01/11/2021 and notification of Assam Minor Mineral Concession (Amendment) rule 2021 vide No. PEM.130/2021/40 dated 07/10/2021.
(c) Furthermore @ 1% labour cess shall be deducted at source from each running /final bill payment.

30. Terms of Payments:

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	All items
1.	After initial inspection (wherever specified) and delivery at site in good condition on pro-rata basis.	60%
2.	On completion of installation in all respect on pro-rata basis.	25%
3.	On testing, Commissioning, Obtaining Clearance from Local Body and handing over to the department for beneficial use.	15%

Executive Engineer(E)
Guwahati Electrical Division
CPWD, Bamunimaidan, Guwahati-21

"Annexure-I"

FORM OF COMPLETION CERTIFICATE

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) (i) Type & description of overhead line.
(ii) Total length and no. of spans.
(iii) No. of street lights and its description.

(b) (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 between the phase conductor and neutral
Between Phase R and neutral – Mega
ohms Between Phase Yand neutral – Mega
ohms Between Phase B and neutral – Megaohms

(ii) 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) Earth electrode resistance
Resistance of each earth Electrode

(i) Ohms
(ii) Ohms

(iii) Ohms
(iv) Ohms

(c) 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.

(d) Illumination level at ground.

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

Signature and Name of
Contractor

ELIGIBILITY CRITERIA FOR MAJOR COMPONENTS (E&M)

1. The successful bidder shall have to associate the Electrical license agency/ Specialized agencies / firms for carrying out work each Specialized sub head separately. Eligibility criteria for each of E & M works. However, if the contractor himself satisfies the eligibility criteria for any sub head, then the firm may carry out that work after getting the approval from the concerned Engineer-in-Charge. The submission of documents for association and willingness shall be made as per **Annexure C (Willingness)** & **Annexure D** (**MoU**). Joint ventures are not accepted.
2. Specialized agency with experience of having successfully completed similar work during last seven years, ending last day of the month previous to the one in which tenders are invited.

(i) One similar work of value not less than 80% of the estimated cost (rounded off to two decimal place) of corresponding Sub head mentioned below.

Or

(ii) Two similar works each of value not less than 60% of the estimated cost (rounded off to two decimal place) of corresponding Sub head mentioned below.

Or

(iii) Three similar works each of value not less than 40% of the estimated cost (rounded off to two decimal place) of corresponding Sub Head mentioned below.

3. Specialized agency with experience of having successfully completed similar work during last seven years, ending last day of the month previous to the one in which tenders are invited. **For Electrical Installation, the agency shall have valid Electrical license or associate the agency who is having electrical license.**
4. The value of executed works shall be brought to current costing level by enhancing the value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for bids. The BOQ/SOQ concerned with similar work only will be considered for finding the value of completed works.
5. 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.
6. The Composite Contractor and the associated **Electrical license agency/ specialized agencies** are to give required affidavit to confirm their association. Tender accepting authority approves the change of Sub-Agency in case it is required during the currency of the contract but the proposed agency shall also meets eligibility criteria.

7. 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).

8. 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.
9. 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 associates 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.

10. 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.

11. The associate agency shall attend the inspection of the work by the Engineer-in-Charge as and when required.

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. 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.

20. 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.

21. 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).

22. The associate contractor shall attend the inspection of the work by the Engineer –in-charge of E&M works as and when required.

23. No change of Electrical Contractor will be allowed without prior approval.

24. 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.

25. 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.

26. 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, otherwise a penalty of Rs 5000.00 per service per week shall be levied.

27. 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.

28. 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.

Annexure 'C'

WILLINGNESS CERTIFICATE

Name of Work: - Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.

NIT No. : **40/EE-DIB/2026-27**

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

I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-in-charge. Also, I will employee 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

Correction...Nil Deletion... Nil Insertion...Nil Overwriting... Nil AE (C)AE(E)EE(C)

Annexure 'D'

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 Contactor]

Name of Work:- Repair of the institute vehicle garage near NIV at ICMR-NIHR, Dibrugarh including IEI.

NIT No.- 40/EE-DIB/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 sub head 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

Annexure - III

LIST OF ACCEPTABLE MAKES OF ELECTRICAL ITEMS

Name of Work :- "Provision of Special Repairs of Vehicle Garrage at RMRC, Dibrugarh (Electrical Work)".

Sl.No	ITEM	Name of Manufacturers
1.	FRLS PVC insulated copper wire /Power cable / XLPE Cable	Finolex/ Havells/ RR Kabel/ GRG/ V- Mark/ Rajanigandha/ Greatwhite/Fort Gloster
2.	Modular Type Switch/Socket/GI Box/ Bell Push/blanking plate/Motor Starter/call bell/fan regulator	Legrand (Myrius Nextgen) /Schneider (Opale)/ Lauritz Knudsen Electrical and Automation Formally (L&T Englaze) /ABB(Tvisha)/North West (Nowa)/ Honeywell (Blenze Pro)/Havells(Murano)/ Greatwhite (Arcus)
3.	PVC Conduit(ISI Marked) with PVC conduit pipe accessories	Welkm/ BEC / Richa/ Polycab/CAMA
4.	LED Fittings/Compound light/ Street light/Post top Lantern/ Flood Light	Philips / Lighting Technology / Havells/ Regent/ Wipro/ Insta Power/ Jaquar/Crompton/Bajaj
5.	Ceiling fan/ Exhaust fan/Fresh air fan	Crompton/ Havells/ Orient / Usha / Polar/Atomberg
6.	Prewired MCB DB and loose wire box / GI box	Legrand (Ekinox^3) / Siemens (Equivalent) / ABB(Itus)/ Schneider (Acti9) / Lauritz Knudsen Electrical and Automation Formally (L&T Exora)/ C & S/Havells
7.	MCB /RCCB/RCBO and sheet metal enclosed industrial socket with plug top	Lauritz Knudsen Electrical and Automation (Formally L&T) / ABB (SB 200M)/ Schneider (Acti9)/ Siemens (Equivalent) /C & S/Havells
8.	MCCB /ACB (Ics=Icu = 100%)	ABB (Formula) (E-Max2)/ Schneider (CVS)(MVS)/ LK/L&T-(D-sine) (U Power omega)/ Siemens (3VA) (3WT) /C & S/Havells
9.	GI Pipe/ MS Pipe (ISI Marked)	Jindal(Hissar) / Tata /Bansal/Sail/Nezone/Utkarsh
10.	Lugs/Thimble	Dowell's / Comet / Braco / Raychem / Johnson
11.	Cable Gland / Termination	Dowell's / Comet / Braco / Raychem / Johnson
12.	All other items not covered above	As per approval of Engineer-in-charge

NOTES:-

1. 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 ate not available in the market, contractor shall submit alternative proposal to Engineer-in-Charge for the approval of NIT approving authority.
2. 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.
3. 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.
4. All other items shall be of ISI marked / as per approved sample kept at site of work.

Executive Engineer(E)

Schedule of work

Name of work :- Provision of Special Repairs of Vehicle Garrage at RMRC, Dibrugarh (Electrical Work).

Sl. No.	Description	Qty	Unit	Rate	Amount	
					DSR-25	MR
	S.H.-I (WIRING)					
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.					
a)	Group A	32	Point	1189.00	38048.00	------
1.2	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit along with 1 No. 4 sq. Mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	100	Metre	373.00	37300.00	------
1.3	Wiring for light/ power plug with 4X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit along with 2 Nos. 4 sq. Mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	50	Metre	587.00	29350.00	------
1.4	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.					
(a)	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	100	Metre	267.00	26700.00	------
(b)	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	50	Metre	482.00	24100.00	------
1.5	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.					
a)	3 x 1.5 sq. mm	30	Metre	104.00	3120.00	------
b)	3 x 4 sq. mm	40	Metre	222.00	8880.00	------

1.6	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.					
a)	20 mm	100	Metre	151.00	15100.00	------
b)	25 mm	50	Metre	168.00	8400.00	------
1.7	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 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	8	Each	659.00	5272.00	------
	Sub-Head-2 (Fittings and Fixtures)					
2.1	Supplying, installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range-5 0C to 40 0C, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P.F.≥0.95, IP20, CRI >80, Flicker free (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥120 <135 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)					

(a)	36 watt	8	Each	760	6080.00	------
2.2	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.					
(a)	1200mm, service value ≥ 6.0 CM/Min/Watt, air delivery 210CM/Min (Minimum)	8	Each	2695.00	21560.00	------
2.3	Supplying and fixing brass batten/ angle holder including connection etc. as required.	8	Each	154.00	1232.00	------
2.4	Supplying, Installation, testing and commissioning of Bulk Head LED fitting having lumen efficay ≥ 100lm/watt, System Lumen output ≥ 1000 lm, Metal housing Confirming to IP 65 & IK 08 , CRI ≥ 70, Power factor ≥ 0.9, having suitable diffuser and CCT in between 4000K to 6500 K (i/c both Limits) complete with all accessories etc. directly on ceiling/wall including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	8	Each	900.00	------	7200.00
	S.H.-3 (Boards and 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)					
a)	16 way, Double door	1	Each	3367.00	3367.00	------

3.2	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a)	Single pole	14	Each	285.00	3990.00	------
3.3	Supplying and fixing following rating, 240/415 volts "C" curve miniature circuit breaker suitable for inductive load of following four poles in the existing MCB DB complete with connections testing and commissioning etc. as required.					
a)	40 amps DP	1	Each	1603.00	------	1603.00
	Sub Total				**232499.00**	**8803.00**
	Add Cost Index of "C" Area i.e. 126 based on DPAR'25 (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) [(126-100)/100x100] = 26.00% [Considered on DPAR'25 Items]				60450.00	------
	Total				**292949.00**	**8803.00**
	Total of DSR'25 +MR				**301752.00**	

Executive Engineer(E)

Correction...Nil Deletion... Nil Insertion...Nil Overwriting... Nil AE (C)AE(E)EE(C)