

Government of India
Central Public Works Department

NIT No.		**97/CE/EE(C)-1/CPWD/Dehradun/2026-27**
Name Of Work		**Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Estimated Cost Put To Tender		**Rs. 1,93,09,653/-(Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/- (Total)**
Earnest Money		**Rs. 3,90,500/-(EMD** Deposit Receipt **as per Annexure-I)**
Time Allowed		**08 (Eight)** Months
Last Date of Online Submission of Bid		**13.11.2026 upto 3:00 PM**
Date of Online opening of Bid		**13.11.2026 upto 03:30 PM**

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

1.0

INDEX
&
GLOSSARY

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
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1.1 INDEX

Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

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NIT amounting to Rs. 1,95,24,580/- (Rupees One Crore Ninety Five Lakh Twenty Four Thousand Five Hundred & Eighty) only is hereby approved. This NIT contains pages marked as 1 to 181.

Assistant Engineer(P) Elect. CPWD, Dehradun	Assistant Engineer (P) Civil CPWD, Dehradun	Executive Engineer(C) CPWD, Dehradun

Chief Engineer-Dehradun
CPWD, Dehradun

Corrections	NIL	Insertions	NIL
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1.2 GLOSSARY

KV	KENDRIYA VIDYALAYA
CPWD	Central Public Works Department
CE	Chief Engineer
EE(C)	Executive Engineer(Civil)
EE(E)	Executive Engineer(Electrical)
AE/AEE	Assistant Engineer / Assistant Executive Engineer
GCC 2023 For Construction Works	General Conditions of Contract for Construction Works 2023
EM	Earnest Money
DLP	Defects Liability Period
B & R	Building and Road
BIM	Building Information Management
BIS	Bureau of Indian Standards
C & D Waste	Construction & Demolition Waste
COA	Council of Architecture
CPI	Consumer Price Index
GRIHA	Green Rating for Integrated Habitat Assessment
SHE	Safety Health & Environment
IGBC	Indian Green Building Council
IPC	Interim Payment Certificate
IS	Indian Standard
MAS	Material at Site
MEP	Mechanical Electrical Plumbing
MT	Metric Ton
MTC	Material Testing Certificate
NBC	National Building Code
NGT	National Green Tribunal
NIT	Notice Inviting Tender
OEM	Original Equipment Manufacturer
PPE	Personal Protection Equipment
SAP	Safety Action Plan
SOP	Schedule of Payment/Standard operating procedure
STP	Sewage Treatment Plant
TDS	Tax Deduction at Source
TPQA	Third Party Quality Assurance
WPI	Wholesale Price Index
WTP	Water Treatment Plant

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
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2.0
NOTICE INVITING e-TENDER

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

NOTICE INVITING e-TENDER

The Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in) on behalf of the President of India invites online percentage rate composite bids from approved and eligible contractors of CPWD registered in appropriate class in Building & Road (erstwhile Composite/Building/Infrastructure)" category for the following work:

Name of work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

NIT No.: **97/CE/EE(C)-1/CPWD/Dehradun/2026-27**

Estimated Cost put toTender	**Rs. 1,93,09,653/-(Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/-(Total)**
Earnest Money	**Rs. 3,90,500/-(EMD** Deposit Receipt **as per Annexure-I)**
Period of Completion	**08 (Eight)** Months
Last Date &Time of Online submission of Bid	**13.11.2026 upto 03:00 PM**
Date &Time of Online opening of Bid	**13.11.2026 upto 03:30 PM**

The tender forms and other details can be obtained fromthe website https :/ /etender.cpwd.gov.in Press notice is also available on http://www.eprocure.gov.in.

Executive Engineer (C)

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
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PART-A

GENERAL INFORMATION

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

3.1 INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF THE BID DOCUMENTS

The Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in) on behalf of the President of India invites online percentage rate composite bids from approved and eligible contractors of CPWD registered in appropriate class in "Building & Road (erstwhile Composite/Building/Infrastructure)" category for the following work:

NIT No.	**:**	**97/CE/EE(C)-1/CPWD/Dehradun/2026-27**
Name of Work	:	**Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Location	**:**	**Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Estimated cost put to bid	**:**	**Rs. 1,93,09,653/-(Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/-(Total)**
Earnest Money	**:**	**Rs. 3,90,500/-(EMD** Deposit Receipt **as per Annexure-I)**
Period of Completion	**:**	**08 (Eight)** 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.	**:**	**13.11.2026 upto 03:00 PM**
Date and time of Opening of Bid	**:**	**13.11.2026 upto at 03:30 PM**

Criteria for Association of Agencies for Specialized Works for the Building & Road((erstwhile Composite/Building/Infrastructure))" category CPWD contractors:

The CPWD B&R/ composite category contractors shall have to associate other agency(s) for execution of each of the specialized work(s), which fulfils the eligibility criteria as defined alongwith taking prior-approval. The CPWD B&R/Composite Contractors and the associated specialized agencies shall give required affidavit to confirm their association. Tender accepting authority may approve change of sub agency in case it is required during the currency of contract. However, the CPWD B&R/composite category shall also be eligible to carry out himself any or all of these works without associating any other agency provided: -

I. He fulfills the prescribed eligibility criteria respectively for these work(s).

Or

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II.	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.	
S. No.	Specialized work(s) / item of work(s)	Criteria of associated agencies
1.	All types of Waterproofing Works	Experience of having successfully completed works during last seven years ending previous day of last date of submission of bid. (i) One work of financial value not less than 80% of ECPT of Waterproofing Sub-head works put to tender. OR (ii) Two works each of financial value not less than 60% of ECPT of Waterproofing Sub-head works put to tender. OR (iii) Three works each of financial value not less than 40% of ECPT of Waterproofing Sub-head works put to tender. Similar work means "Completion of Waterproofing works."
2.	Plumbing and Sanitary Installations i/c fixtures	Experience of having successfully completed works during last seven years ending previous day of last date of submission of bid. (j) One work of financial value not less than 80% of ECPT of Plumbing and Sanitary Installations i/c fixtures Sub-head works put to tender. OR (iv) Two works each of financial value not less than 60% of ECPT of Plumbing and Sanitary Installations i/c fixtures Sub-head works put to tender. OR (v) Three works each of financial value not less than 40% of ECPT of Plumbing and Sanitary Installations i/c fixtures Sub- head works put to tender. Similar work means "Completion of Plumbing and Sanitary Installations i/c fixtures."

A) Applicable for CPWD contractors

For specialized components of civil and E & M works (Components of work for particular specialized work shall only be considered while calculating the cost of specialized work). The specialized agency should have satisfactorily completed the said specialized work of amount as mentioned in NIT during the last 7 (seven) years. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7%

per annum, calculated from the date of completion: The bidder should either himself meet the eligibility conditions as mentioned in the table below or otherwise he will have to associate with an agency meeting the eligibility requirements for specialized work. The bidder shall submit details of such agency(s) as given below to the Executive Engineer of concerned component within 30 days of award of work.

i. Name of Firm.
ii. List of works
iii. Performance certificate from the Client.
iv. Availability of manpower and machineries.

Names of the agency(s) to be associated shall be approved by the Engineer-in-Charge of concerned component.

Specialized Agencies: The bidder should either himself meet the eligibility conditions as mentioned or otherwise he will have to associate with an agency meeting the eligibility requirements for specialized work. The tenderer whose tender is accepted shall indicate the name(s) of his associated specialized agencies those fulfilling the eligibility criteria laid down below after award of work within 30 days of award of work for the approval of the Engineer-in-Charge of that component, whose decision shall be final and binding. If the tenderer, having valid electrical license if applicable for E.I. works, himself fulfills the eligibility criteria laid down below for associated specialized agencies, then the tenderer shall not require to associate with himself the associated specialized agency.

It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialized Agencies without any time & cost overrun to the Department. The main contractor shall be solely responsible for settling any dispute / litigation arising out of his agreement with the Specialized Agencies. The contractor shall ensure that the work shall not suffer on account of litigation/ dispute between him and the specialized agencies / sub- contractor(s). No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialized Agencies.

(B) <u>Eligibility Criteria:-</u>

CPWD enlisted contractors of appropriate class in B&R/composite category shall be required to fulfill following eligibility criteria :-

Bidding Capacity :

(i) The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

Bidding Capacity = [(A x N X 1.5)-B]

where,

A= Maximum turnover in Maintenance works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of annual turnover shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

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N= Number of years prescribed for completion of work for which bids have been invited. The value of N shall be taken as 1 (one), where the completion period is less than one year.

B=Value of existing commitments and ongoing works to be completed during the period of completion of work for which bid has been invited.

(ii) The bidder should submit bidding capacity as per Form 'B'.

Bidding capacity formula, for CPWD contractors who are enlisted based on rule 6.1.7 of Enlistment Rules-2026 i.e. government retired engineer/ architect for three years from the date of issue of enlistment order, is as follows:-

Bidding Capacity =[(AxNx1.5)-B]

Where,

A = Banker certificate figure as submitted by applicant (i.e. government retired engineer/ architect) at the time of enlistment for first year of enlistment and subsequent fresh bankers certificate for second and third year respectively. Value of A for first year will be mentioned in the enlistment order by the member secretary of advisory Engineer-In-Charge for enlisting authority.

N = Number of years prescribed for completion of work for which bids have been invited. The value of N shall be taken as 1 (one), where the completion period is less than one year.

B = Value of existing commitments and on-going works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity. Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses. (vi). Bidding capacity, for CPWD contractors who are enlisted based on rules 9.6.3 & 9.6.4 of Enlistment Rules-2026 i.e. new entity based on previously enlisted entity for three years from date of issue of enlistment order, is as follows:

Bidding Capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules -2026 shall be as follows :-

Bidding Capacity=[('A'xNx1.5)-B]

Where,

'A' = Proportionate share of newly enlisted director/partner in originally enlisted company/firm multiplied by the factor A, as given below. Value of A' will be mentioned in the enlistment order by member secretary of Advisory Engineer-In-Charge for Enlistment Authority, it will remain same for three years.

A = Maximum turnover in Maintenance works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7% per annum. This value is of originally enlisted entity at the time of enlistment of newly enlisted entity.

N = Number of years prescribed for completion of work for which bids have been invited. The value of N shall be taken as 1 (one), where the completion period is less than one year. B

Corrections	NIL	Insertions	NIL
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= Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited.

Intending bidders submitting the tender should read the schedule of quantities, additional conditions, additional specifications, particular specifications, CPWD-6 and other terms and conditions given in the NIT and drawings carefully. The bidder should also read the General Conditions of Contract 2023 for CPWD Maintenance Works with up-to-date correction slips, which is available as Government of India Publications; however, provisions included in the tender document shall prevail over the provisions contained in the standard form.The set of drawings and NIT shall be available in the office of Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in)

1. The contractor should also visit the site of work and acquaint himself with the site conditions before tendering. He should only submit his tender if he considers himself eligible and he is in possession of all the required documents.

The following conditions, which already form part of the tender conditions, are specially brought to his notice for compliance while submitting the tender online. They are requested to comply following instructions:

(a) Tenders with any condition including that of conditional rebates shall be rejected forthwith.

(b) The successful bidder shall be required to submit a (i) Performance Guarantee of 5% (Five percent) of the Tendered Value or Estimated Cost put to Tender (ECPT) (Whichever is higher). (ii) 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 (i) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount. The performance Guarantee shall be submitted as mentioned above within 7 days of issue of letter of intent. This period can be further extended by Engineer-in-Charge upto a maximum period of 3 days on the written request of the contractor and with late fee as defined in Schedule “F”.

(c) GST, Labour-Cess etc. as applicable shall be borne by the contractor himself. The contractor shall quote his rates considering all such taxes and hence their quoted rates should be inclusive of all the tax components.

(d) It will be obligatory on part of the contractor/bidder to tender for and sign the tender documents for all the component parts. The department reserves right to accept tender in full or in part without assigning any reasons.

2. Information and Instructions for bidders posted on website shall form of bid document.

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

Corrections	NIL	Insertions	NIL
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4. 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 in the office Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in) on all working days between 11.00 AM to 4.00 PM except Sunday and public holidays and downloaded from website www.etender.cpwd.gov.in or www.cpwd.gov.in or www.eprocure.gov.infree of cost.

5. 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 Banker's Cheque of a Commercial Bank, Account Payee Demand Draft of a Commercial Bank, Fixed Deposit Receipt (FDR) of a Commercial Bank, Insurance Surety Bonds & Bank Guarantee including e-Bank Guarantee (for balance amount as prescribed in NIT) from a Commercial Bank towards EMD in favour of **"Executive Engineer, Dehradun Central Division- I, CPWD, Dehradun"** as mentioned in NIT, receipt of deposition of original EMD to division office of any Executive Engineer, CPWD and other documents elsewhere mentioned in NIT.

6. **Bids will be submitted online upto 03.00 PM on 13.11.2026. The bids shall be opened online at 03:30 PM on 13.11.2026.**

7. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

8. The intending bidder must have valid class-III digital signature to submit the bid.

9. The Executive Engineer of all divisions of CPWD should receive the original EMD for tender of other division.

10. Copy of Enlistment Order and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of tender submission.
Online bid documents submitted by intending bidders shall be opened only of those bidders, **whose all documents scanned and uploaded are found in order including receipt of Deposition of EMD.**

11. On opening date, the contracotr can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.

12. Contractor can upload documents in the form of JPG format and PDF format.

13. Contractor must ensure to quote percentage rate of each item. The column meant for quoting percentage rate in figures appear 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).**

14. 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

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percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

15. No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable as submitted by the Bidder to the Engineer-in Charge.

16. The department reserves the right to reject any prospective application without assigning any reason thereof and to restrict the list of qualified bidders to any number deemed suitable by it, if too many bids are received satisfying the laid down criteria.

17. The main contractor shall execute the minor component(s) also. He should be either an eligible contractor himself or associate with himself an eligible agency(s) for execution of electrical work as per CPWD-6 for e-tendering. The contractor shall indicate the names of upto three such agencies within prescribed time as "**Minor component agencies**". In case the details of electrical agency are not submitted by the bidder or are not proper then these shall be submitted before acceptance of the bid.

18. After acceptance of the tender 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. **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.

19. The main contractor has to enter into agreement with the contractor(s) associated by him for execution of minor component(s). Copy of such agreement shall be submitted to EE/DDH in charge of minor component as well as to EE in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.

20. Tenders with any condition including that of conditional rebates in the tender document shall be rejected forthwith.

21. The **online percentage rate** (s) must be quoted in decimal coinage. Amount shall be calculated and rounded in full rupees by ignoring fifty paisa and considering more than fifty paisa as rupee one.

22. The successful bidder shall be required to submit a (i) Performance Guarantee of 5% (Five percent) of the Tendered Value or Estimated Cost put to Tender (ECPT) (Whichever is higher). (ii) 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 (i) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount. The performance Guarantee shall be submitted as mentioned above within a period of issue of letter of acceptance as specified in schedule 'F'.

23. The contractor shall have to execute guarantee bonds in respect of specialized works mentioned in bid document.

Corrections	NIL	Insertions	NIL
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24. GST on materials as applicable shall be paid by the contractor himself. The contractor shall quote his rates considering all such prevailing taxes.

25. Intending bidder may submit detailed activities/programme chart on the basis of their resources and methodology alongwith performance guaranteeas indicated in the "Schedule F".

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

For CPWD Contractors

1.	Scanned copy of Banker's Cheque of a Commercial Bank, Account Payee Demand Draft of a Commercial Bank, Fixed Deposit Receipt (FDR) of a Commercial Bank, Insurance Surety Bonds & Bank Guarantee including e-Bank Guarantee (for balance amount as prescribed in NIT) from a Commercial Bank against EMD
2.	Scanned Copy of receipt of deposition of original EMD **(Annexure-I)**
3.	Scanned Copy of valid enlistment order of CPWD contractors who are enlisted in appropriate class of "Building & Road"/composite category.
4.	Declaration about Site inspection in **Form "A"**
5.	Form for bidder's bidding capacity **Form "B"**
6.	Permanent Account Number (PAN) as issued by the Income Tax Department.
7.	GST Registration certificate in the state of Uttarakhand, if already obtained by the bidder. If the bidder has not obtained GST registration in the state in which the work is to be taken up**, or as required by GST authorities,** then in such a case the bidder shall **scan and upload** following undertaking **along** with **other** bid documents. "*If work is awarded to me, I/we shall obtain GST registration Certificate* of the *as applicable within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard*."
8.	Uploading of valid electrical license of eligible class Or Uploading of following undertaking if not having electrical license of eligible class. "If work is awarded to me, I/we shall obtain valid electrical license at the time of execution of electrical work or associate of Contractor having valid electrical license of eligible class."

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9.	Undertaking of association of agencies for specialized items of work: "If work is awarded to me, I/we shall associate agencies (having desired credentials as mentioned in NIT) for specialized items of work, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD."
10.	Copy of certificate for compulsory ERP training issued through LMS or ERP obtained by enlisted contractor either by him or his authorized representative.
11.	Any other document as specified in the NIT.

Note: If any document not scanned and uploaded while submitting bid, the bid submitted shall become invalid and will not be considered in e-Tender process and the bid shall be summarily rejected.

Executive Engineer
(For and on behalf of President of India)

Corrections	NIL	Insertions	NIL
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AE(P) C	AE (P) E	EE (P)	

Annexure-I

3.2 Performa for Earnest Money Deposit Receipt

Receipt of deposition of original EMD **(Receipt No. ……./ date ……..)**
Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun. NIT No. : **97/CE/EE(C)-1/CPWD/Dehradun/2026-27** 1. Estimated Cost: **Rs. 1,93,09,653/-(Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/-(Total)** 2. Amount of Earnest Money Deposit: **Rs. 3,90,500/-** 3. Last date of submission of online Bid: **13.11.2026 upto 03:00 PM** (* To be filled by NIT approving authority/EE at the time of issue of NIT and uploaded along with NIT)
1. Name of Contractor: ……#..... 2. Form of EMD ……..#..... 3. Amount of Earnest Money Deposit ……#..... 4. Date of submission of EMD …….# …… Signature, Name and Designation of EMD receiving officer (EE/AE(P)/AAO) along with Officer stamp (# to be filled by EMD receiving EE or NIT issuing EE as the case may be)

(i) The Executive Engineer of all divisions including NIT issuing division of CPWD should receive the original EMD for tender of other divisions.

(ii) The NIT approving authority /EE at the time of issue of NIT shall also fill and upload the above mentioned prescribed format of receipt of deposition of original EMD along with NIT.

(iii) The Executive Engineer receiving EMD in original form shall examine the EMD deposited by the bidder and shall issue a receipt of deposition of earnest money to the agency in a given format uploaded by tender inviting EE. The receipt may be issued by the AE(P)/AAO.

(iv) The Executive Engineer receiving original EMD shall also intimate tender inviting Executive Engineer about deposition of EMD by the agency by email/fax/telephonically.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

(v) The original EMD receiving Executive Engineer shall release the EMD after verification from the e-tendering portal website (https://etender.cpwd.gov.in) that the particular contractor is not L-1 tenderer and work is awarded.

(vi) The tender inviting Executive Engineer will call for original EMD of the L-1 tenderer from EMD receiving Executive Engineer immediately.

Executive Engineer

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

3.3 CPWD–6 FOR e-TENDERING

सत्यमेव जयते	**GOVERNMENT OF INDIA** **CENTRAL PUBLIC WORK DEPARTMENT**	केंद्रीय लोक निर्माण विभाग CPWD

The Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in) on behalf of the President of India invites online percentage rate composite bids from approved and eligible contractors of CPWD registered in appropriate class in "Building & Road"/composite category for the following work:

Name of work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

NIT No.: 97/CE/EE(C)-1/CPWD/Dehradun/2026-27

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 the contractor should be valid on
the original date of submission of bids.

1. The work is estimated to cost as under:
   Rs. 1,93,09,653/-(Civil Works)
   Rs. 2,14,927/-(E&M Works)
   Rs. 1,95,24,580/-(Total)

2. This estimate, however, is given merely as a roughguide.

3. 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. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

4. 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.

5. The time allowed for carrying out the work will be **08 (Eight)** Months from the date of start as defined in Schedule 'F' or from the first date of handing over of the site, which ever is later, in accordance with the phasing, if any, indicated in the bid documents.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6. **The site for the work is available.**
The architectural (GFC) Drawings shall be made available in phased manner according to schedule of execution of individual components and as per requirement of the same as per approved programme of completion submitted by the contractor after award of work. However, architectural drawings are available in the O/o Executive Engineer (C-1), CPWD, Dehradun (Telephone- 8447848032 email ID: eedcd1cpwd@yahoo.co.in) which may be seen all working days between 11:00 AM to 05:00 PM except holidays.

7. Any other drawing required by contractor during the execution of work, shall be issued to him in phased manner as per approved programme for completion of work submitted by the contractor alongwith performance guarantee.

8. The bid document consisting of plans, specifications, the schedule of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website **https://etender.cpwd.gov.in** or **www.cpwd.gov.in** or http://**www.eprocure.gov.in** free of cost.

9. After submission of the bid the contractor can re-submit revised bid any number of times or withdraw it before last date and time of submission of bid as notified. No post-tender modification is allowed by the tenderers except through negotiations. if required in case, any tenderer does so, the tender will be rejected and the tenderer will be debarred future tendering in CPWD for two years by the concerned enlisting authority (in case of CPWD enlisted contractor) and by the concerned CE/SE (in case of non-enlisted contractor).

10. 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.

11. Earnest Money of **Rs. 3,90,500/-**in the form of Banker's Cheque of a Commercial Bank, Account Payee Demand Draft of a Commercial Bank, Fixed Deposit Receipt (FDR) of a Commercial Bank, Insurance Surety Bonds & Bank Guarantee including e-Bank Guarantee (for batance amount as prescribed in NIT) from a Commercial Bank issued in favour of **"Executive Engineer, Dehradun Central Division- I, CPWD, Dehradun"** alongwith tender documents shall be scanned and uploaded to the e-tendering website within the period of bids submission. **The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, (including NIT issuing EE/AE), CPWD within the period of bid submission.**

12. **The EMD receiving Executive Engineer shall issue a receipt of deposition of Earnest Money deposit to the bidder in the following prescribed format (enclosed as Annexure-I) uploaded by tender inviting EE in the NIT.The receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.**

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

13. A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any Commercial bank having validity for six months or more from the last date of receipt of bids which is also to be scanned and uploaded by the intending bidders.

    The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder whichever is earlier.
14. But the bid can only be submitted after **deposition of original EMD in favour of "Executive Engineer, Dehradun Central Division- I, CPWD, Dehradun" in the form prescribed in NIT and** uploading the mandatory scanned documents such as receipt for deposition of EMD and other documents asspecified.

15. Copy of enlistment order and other documents as specified in the bid document shall be scanned and uploaded to the e-tendering website within the period of bid submission.

16. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose Earnest Money Deposit Receipt issued by any division of CPWD and other documents scanned anduploaded are found in order.
17. The bids so submitted, shall be opened on **13.11.2026 at 03:30 PM.**

18. The bid submitted shall become invalid and e-Tender processing fee (if applicable) shall not be refunded if:

(i) The bidder is found ineligible.

(ii) The bidder does not upload the Earnest Money Deposit Receipt duly filled in and signed.

(iii) The bidder does not upload scanned copies of all the documents stipulated in the bid document

(iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the bidders in the office of bid opening authority (hard copy to be submitted within a week from last date of submission of bid).

(v) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/ subhead in percentage rate tender, the tender shall be treateds in valid and will not be considered as lowest tenderer.

19. The contractor, whose bid is accepted, will be required to furnish The successful bidder shall be required to submit a (i) Performance Guarantee of 5% (Five percent) of the Tendered Value or Estimated Cost put to Tender (ECPT) (Whichever is higher). (ii) 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 (i) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount. The performance Guarantee shall be submitted within the period as specified in Schedule F. This guarantee shall be in the form of Banker's Cheque of a Commercial Bank OR Account Payee Demand Draft of a Commercial Bank OR Fixed Deposit Receipt (FDR of a Commercial Bank or Insurance Surety Bonds OR Bank Guarantee of a 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 tender shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within the period specified in Schedule F.

20. The description of the work is as under:

Name of work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.
NIT No.: 97/CE/EE(C)-1/CPWD/Dehradun/2026-27

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

21. 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.
22. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.
23. 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.
24. 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.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

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

26. The bid for the works shall remain open for acceptance for a period of **30 (Thirty) days** from the date of opening of bids. Further

(i) If any tenderer withdraws his tender within 7 days after last date and time (24 hours basis) fo submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

(ii) If any tenderer withdraws his tender after expiry of 7 days after last date and time (24 hours basis) of submission of the bid, then the Government without prejudice to any othe rright or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

(iii) Withdrawal of the tender, by the tenderer, shall only be made through e-tnder portal. Any other method i.e, through letter/e-mail etc. shall not be considered.

(iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, bidders shall not be allowed to participate in the rebidding process of the same work.

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

a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, ifany, 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 togetherwith any correspondence leading thereto.

b) Standard C.P.W.D. Form-7 or other Standard C.P.W.D. Form as applicable.

28. **For Composite Bids:**

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

(ii) In case of composite tenders, the contractor submitting the tender should read all the five Parts of the tender viz. Part-A, B, C, D & E, which are containing schedule of quantities, additional & special conditions, additional specifications, particular specification and other terms and conditions given in the NIT and drawings for Major as well as Minor component of work. Details of these parts are summarized as under:

Part A:-Information & Instructions for Bidders for E-Tendering, CPWD-6, CPWD–7 including schedule A to F for both major and minor component of the work

Part B: - General conditions, Special conditions, Particular specifications, Technical specifications, List of Preferred Makes for Major componenet of works, List of specialized works & Guarantee bonds

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Part C: - General conditions, Technical specifications, List of Preferred Makes for major & minor componenet of works, List of specialized works & Guarantee bonds
Part D: - Schedule of quantities applicable to major and minor component of the work.
Part E: - Standard General Conditions of Contract Maintenance Works 2023 as amended/ modified up to previous day of last date of submission of bid.

The **Major** Component of work is **Civil** Work and **Minor** Component of work is **Electrical** Work.

(iii) The bidder must associate himself with agencies of the appropriate class eligible to bid for each of the minor component individually as per NIT conditions.

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

(v) After acceptance of the bid by competent authority, the EE in charge of Civil 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 civil component and has also to sign two more copies of agreement for EE of electrical components respectively. One such signed set of agreement shall be handed over to EE of electrical components. EE of civil component will operate Part A, Part B and Part E of the agreement. EE in-charge of electrical components shall operate Part C along with Part A and Part E of the agreement.

(vi) Entire work under the scope of composite bid including major and all minor Components shall be executed under one agreement.

(vii) Security Deposit will be worked out separately for each component corresponding to the Gross value of work done of the respective component of works.

(viii) 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).

(ix) 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.

(x) 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.

(xi) The main contractor has to enter into MOU with agencies contractor(s) associated by him. Copy of such MOU shall be submitted to Executive Engineer & Senior Manager in charge of each relevant component as well as to Executive Engineer & Senior Manager in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.

(xii) Running payment for the major component shall be made by Executive Engineer & Senior Manager of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor. The CMB shall be maintained independently by Engineer-in-Charge of major and minor components.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

(xiii) 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.

(xiv) Final bill of whole work shall be finalized and paid by the Executive Engineer & Senior Manager 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.

29. 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 bid. Any issue related to updating profile/uploading tender can be resolved through concerned the Executive Engineer/Assistant Engineer or ERP helpline no. 18001803286 or e-mail Id cpwd.support@techmahindra.com. The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

30. **List of documents to be scanned and uploaded within the period of bid submission:**

(a) For CPWD Contractors

1.	Scanned copy of Banker's Cheque of a Commercial Bank, Account Payee Demand Draft of a Commercial Bank, Fixed Deposit Receipt (FDR) of a Commercial Bank, Insurance Surety Bonds & Bank Guarantee including e-Bank Guarantee (for balance amount as prescribed in NIT) from a Commercial Bank against EMD
2.	Scanned Copy of receipt of deposition of original EMD (Annexure-I)
3.	Scanned Copy of valid enlistment order of CPWD contractors who are enlisted in appropriate class of "Building & Road"/composite category.
4.	Declaration about Site inspection in **Form "A"**
5.	Form for bidder's bidding capacity **Form "B"**
6.	Permanent Account Number (PAN) as issued by the Income Tax Department.
7.	GST Registration certificate in the state of Uttarakhand, if already obtained by the bidder. If the bidder has not obtained GST registration in the state in which the work is to be taken up, or as required by GST authorities, then in such a case the bidder shall scan and upload following undertaking along with other bid documents.
8.	Uploading of valid electrical license of eligible class Or Uploading of following undertaking if not having electrical license of eligible class. "If work is awarded to me, I/we shall obtain valid electrical license at the time of execution of electrical work or associate of Contractor having valid electrical license of eligible class."
9.	Undertaking of association of agencies for specialized items of work: "If work is awarded to me, I/we shall associate agencies (having desired credentials as mentioned in NIT) for specialized items of work, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD."

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

10.	Copy of certificate for compulsory ERP training issued through LMS or ERP obtained by enlisted contractor either by him or his authorized representative.
11.	Any other document as specified in the NIT.

Note: If any document not scanned and uploaded while submitting bid, the bid submitted shall become invalid and will not be considered in e-Tender process and the bid shall be summarily rejected.

Executive Engineer
(For and on behalf of President of India)

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

4.0

Scope of Work

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

SECTION-I

4.1 BROAD SCOPE OF THE WORK

Salient details of the work for which bids are invited are as under:

Name of Work	**Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Estimated cost put to tender	**Rs. 1,93,09,653/-(Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/-(Total)**
Earnest Money Deposit	**Rs. 3,90,500/-**EMD Deposit Receipt as per Annexure-I)
Time allowed for Completion	**08 (Eight)** Months
Type of Building	Maintenance Works

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

4.2 BARRICADING WORK AND WORKER HOUSING

BARRICADING WORK:

The agency will provide 3.5m high barricade around construction site. The barricade shall be strong enough to withstand peak wind pressure in stated area of construction. Barricade shall be provided in pre-painted profile sheet of appropriate size and supported on Mild Steel structural members(vertical, horizontal & inclined bracing) of suitable size and shall be approved by Engineer-in-charge. in this regard, nothing extra shall be paid for barricading work.

WORKERS' HOUSING:

The contractor shall specify and limit construction activity in pre-planned/ designated areas and shall start construction work after securing the approval for the same from the Engineer- in-Charge. This shall include areas of construction, storage of materials, and material and personnel movement.

a. The bidder himself shall construct clean hygienic and well ventilated labour housing with adequate water supply, electrical, sanitation facilities, etc as per "Model Rules for the Protection of Health and Sanitary Arrangement for the Workers Employed by the Contractors" of General Conditions of Contract, or applicable Labour Regulations.
b. These housing units can be inspected by CPWD officials. Contractor will be allowed to take up main work only after satisfactory completion of these units. However, activities related to earth work only can be started from the date of start of work.
c. No extra payment shall be made for construction of such labour housing and facilities / Amenities provided therein.
d. Due to space restrictions at site, space for Labour Housing can not be allowed at site.

4.3 Defects Liability Period (DLP)

a. Defects liability period shall be taken as **Twelve months** to be reckoned after the date of completion of the work as a whole, wherein all the defects shall be rectified by the contractor at his own cost.

b. Defects of serious nature causing inconvenience such as leakage, reverse floor slopes affecting the drainage (ponding of water), warping and opening of joints in doors and window shutters, etc, shall be undertaken by the contractor immediately on receipt of the complaint but not exceeding one week time, failing which the defects will be got removed at his risk and cost plus 25% as supervision and establishment charges.

c. All other defects notified to the contractor during the DLP shall be rectified to the entire satisfaction of Engineer-in-Charge or item replaced as soon as possible but not beyond one month failing which Engineer-in-Charge shall get it done at his cost plus 25% as supervision and establishment charges after final notice of 10 days. The decision of Engineer-in-Charge regarding a defect being of serious nature or otherwise shall be final and binding.

d. Adequate number of skilled workmen such as plumbers, carpenters, masons, electrician etc. shall be placed to rectify defects after completion of work.

e. During this period, the defects noticed in the work shall be rectified by the contractor at his own cost. In case he fails to do so after intimation to him in writing by the Engineer-in-charge, the same shall be carried out by the Department at his risk and cost. However, maintenance of other building activities such as cleaning, sweeping of pocket & desilting of sewer lines, S.W. Drain shall be done only once, at the time prior to handing over the building.

f. Defects of serious nature causing inconvenience such as leakage, reverse floor slopes affecting the drainage (ponding of water), warping and opening of joints in doors and window shutters etc. shall be undertaken by the contractor immediately not exceeding one week time, failing which the defects will be got removed at his risk and cost.

g. The contractor is to submit the **Guarantee bonds of required amounts** for items of specialized nature for specified period as mentioned elsewhere in bid document.

4.4 QUALITY ASSURANCE

a. Quality of work is of paramount importance. Contractor will be required to engage well-experienced supervisors, engineers, skilled labour and deploy modern T&P and other equipment to execute the work in a time bound manner.

(i) Many items like exposed finish form work, specialized flooring work, factory made door-window shutters, proper slope maintaining in toilet units, sanitary- water supply installation, textured finishing, aluminum & glass work and water proofing treatment will specially require engagement of skilled workers having experience particularly in execution of such items.

(ii) The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately. If any material, even though approved by Engineer-in-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

(iii) In addition to the supervision of work by CPWD engineers, the Consultants / third party quality assurance representatives / Quality Assurance Team of CPWD representatives shall also be carrying out regular and periodic inspections of the on-going activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by Engineer-in-charge to the contractor. Upon receipt of instructions from Engineer-in-Charge these are also to be made good by necessary improvement, rectification, replacement up to his complete satisfaction.

b. Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering,
rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non- hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of Plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth and up keeping of quality assurance shall be of paramount importance.

c. **Method Statement:** The Contractor shall submit within 15 (fifteen) days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance. All the materials to be used in the work to give the finished work complete in all respects, shall comply with the requirements of the specifications and shall pass all the tests required as per specifications as applicable or such specifications / standards as directed by the Engineer-in-Charge. However,

keeping the Quality Assurance in mind, the Contractor shall submit, on request from the Engineer-in-Charge, his own Quality Assurance procedures for basic materials and such items, to be followed during the execution of the work, for approval of the Engineer-in-Charge.

d. **Checklist**: As and when any important item is taken up for execution, the Contractor shall invariably make a checklist. This checklist should be got approved from the Engineer-in-charge and should be shown to the inspecting officers. The important items inter-alia include foundation work, including reinforcement and shuttering, structural steel work, masonry/ Brick work, doors & windows, plumbing, including water supply, sanitary and sewer pipe lines, roof treatment, earth filling, false ceiling etc. which are a few illustrative items for check list purpose.

   Sample checklists for items of concrete for foundation, columns/beams/slabs, water supply lines, masonry/ Brick work and plastering are given in CPWD Specification 2019 with revisions/amendments / correction slip up to last date of submission of bid. In addition to this all other important items such as flooring, door windows, sanitary, painting etc. shall be made on these guidelines in consultation with Engineer-in- Charge.

e. Not less than 90% tests for material be performed at site lab with above stated equipment, however at least 10% testing of materials shall be got done from external laboratories.The tests, as necessary, shall be conducted in the Govt./Approved laboratory. The samples shall be taken for carrying out all or any of the tests stipulated in the particular specifications and as directed by the Engineer –in-Charge or his authorized representative and cost of their safe cartage shall be borne by Contractor.

f. Samples of all materials required for testing is included in the cost of work. Frequency of testing of material will be as per frequency laid down in CPWD Specification or otherwise specified. Cost of sample of material to be provided by Contractor for testing shall not be reimbursed. Reimbursement of testing charges shall be Governed as per para 30 below.

g. All the registers of tests carried out at Construction Site or in outside laboratories and all material at site (MAS) registers including cement register shall be maintained by the contractor which shall be issued to the contractor by Engineer- in-Charge. All the entries in the relevant registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by JE/AE/AEE/ EE&SM / SE & PD of CPWD. Contractor shall be responsible for safe custody of all the registers.

h. The Contractor shall at his own risk and cost make all arrangements and shall provide free of cost all such facilities including material and labour, the Engineer- in- Charge may require for collecting, preparing, forwarding the required number of samples for testing as per the frequency of test stipulated in the contract specifications or as considered necessary by the Engineer-in-Charge, at such time and to such places, as directed by the Engineer-in-Charge. Nothing extra shall be payable for the above.

i. The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor. The Contractor or his authorized representative shall remain in contact with the Engineer-in–Charge or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained on this account.

2.0 TESTING OF MATERIALS AND WORKS

a. Regarding testing of civil & electrical materials, which cannot be tested in site laboratory and/or to be tested at an independent laboratory, the testing of materials shall be conducted in Govt. Laboratory/ Govt. colleges/ IITs/ NITs. The charges of testing of materials in approved laboratory

shall be borne as below:
"All expenditure to be incurred for testing of samples e.g. packaging, sampling, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor" and are included in the Overheads as described in schedule "F".

b. The samples for testing shall be supplied free of cost by the contractor. The contractor shall also make all arrangements for transportation and delivery of samples of materials to the testing laboratory and nothing extra shall be payable for the same.

c. Cost of Samples of all materials required for testing is included in the cost of work. Frequency of testing of material will be as per frequency laid down in CPWD Specification or otherwise specified and decided by Engineer-in-Charge.

d. If any load testing or special testing is to be done for any sample whose strength is doubtful, the cost of the same shall also be borne by the contractor**.** All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering.

e. Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should confirm to bylaws and municipal body / corporation where CPWD 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. The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

f. The Contractor shall arrange electricity at his own cost for testing of the various electrical installations as directed by Engineer-in-Charge and for the consumption by the contractor for executing the work.

g. Also, all the water required for testing various electrical installations, fire pumps, wet riser / firefighting equipment, fire sprinklers etc. and also testing water supply, sanitary and drainage lines, water proofing treatment etc. shall be arranged by the contractor at his own cost.

3.0 RESPONSIBILITY:

a. The Contractor shall keep himself fully informed of all relevant acts and laws of the Central & State Governments, orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye- laws laid down by District Collector / Municipal Corporation / Urban Development Authority and any other statutory bodies shall be adhered to, by the contractor, during the execution of work.

b. The Contractor shall also adhere to all traffic restrictions notified by the local authorities.

c. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor.

d. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work.

e. The contractor shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

f. The fee payable to statutory authorities for obtaining the various permanent service connections and Building Use Certificate for the building shall be borne by the Department.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

g. The contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

h. During the currency of contract, if the exigencies of work requires to demolish the said labour camp, the same has to be dismantled by the contractor to make way for the development of that Area. The decision of Engineer-in-Charge shall be final and binding in this regard. For balance labour housing the contractor has to arrange for a plot of land outside the site campus and construct temporary labour camp, as per specifications and drawings for accommodating the labour. Nothing extra on account of maintaining the labour camps(s), i/c their transportation to site of work etc. shall be entertained. The contractor shall bear the cost of rent of Labour camp, electricity, sewerage, water, watch and ward of these camps. It shall be responsibility of contractor and no claim in this regard shall be entertained.

i. No claim of the laboures shall be entertained including that of providing employment, regularization of services etc.

j. Contractor's Site Engineer/Supervisor shall carry mobile telephone(s) to enable the Engineer-in-Charge or his authorized representatives to have easy and quick communication. Nothing extra shall be paid to the contractor on this account and his quoted rates for various items under this contract will be inclusive of this obligation.

k. The staff employed by the contractor should be well behaved and any complaint of misbehavior shall be taken very seriously and such staff will have to be removed by the contractor immediately from the site.

l. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.

m. The contractor shall get the source of all other materials, not specified else where in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.

n. The contractor shall submit shop drawings of staging and shuttering arrangement, aluminum work, and other works as desired by Engineer in Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer –in – charge before execution.

4.0 Test Laboratories:

A) Laboratory at site:

The contractor shall establish a testing lab at site and provide testing equipment and materials for the field tests mentioned in the list of mandatory tests given in CPWD specifications 2019 Vol. 1 & 2. Nothing extra shall be payable to him on this account.

The representatives of the department shall be at liberty to inspect the testing facilities at site and conduct testing at random in consultation with Engineer in charge. The contractor shall provide all necessary facilities for the purpose. The laboratory shall be equipped, inter alia, with the following equipments:

a) **Balances:**

i) 7 kg to 10 kg capacity, semi-self indicating type – Accuracy 10 gm.

ii) 500 gm capacity, semi-self indicating type Accuracy 1 gm.

iii) Pan Balance- 5 kg Capacity- Accuracy 10 gm.

b) **Ovens-** Electrically operated, thermostatically controlled upto 1100C- Sensitivity

c) **Sieves:** as per IS: 460

i) IS Sieves – 450 mm internal dia of sizes 100 mm, 80 mm, 63 mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75 mm, complete with lid and pan.

ii) IS Sieves – 200 mm internal dia (brass frame) consisting of 2.36 mm, 1.18 mm, 500 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.

d) Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.

e) Equipment for slump test- slump cone, steel plate, taping rod, steel scale, scoop.

f) Equipment for concrete testing

i) Concrete cube moulds 15x15x15cm.	18 Nos.
ii) Pruning Rods 2Kg weight length 40cm and ramming face 25mm	1 No.
iii) Extra Bottom plates for 15cm cube mould	6 Nos.
iv) Standard Vibration table for cubes	1 No
v) Dial gauges 25 mm travel- 0.01 mm/division Least count-	1 No.
vi) Compression testing machine of 100 tonne capacity.	1 No.

Not less than 90% tests for material be performed at site lab with above stated equipment's, however at least 10% testing of materials shall be got done from external laboratories. However, for the tests to be carried out by the external laboratories, the contractor shall supply free of charge all the materials required for testing, including transportation. If the tests which were to be conducted in the site laboratory are conducted in other laboratories for any the reasons the cost of such tests shall be borne by the contractor.

B) Other Laboratories:

Samples of materials required for testing shall be provided free of cost by the contractor. All expenditure to be incurred for testing of samples of all materials e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne bythe contractor. The samples of all materials shall be got tested from the Government Enginerring Colleges/Institutes or NABL approved laboratories as per direction of Engineer-in-charge.

C) Sampling of Materials:

a. Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the

contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.

b. The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.

c. BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.

d. The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.

e. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.

f. The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

g. The Stone aggregate/stone, sand shall be brought from any quarries subjected to the said materials confirm CPWD specifications.

5 All the test registers & MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. Authenticated copies of bills/vouchers of materials which has to be entered in the MAS register are to be submitted by the contractor to CPWD before making payments.

6 Agency shall provide Tax paid bills of the materials and it shall be mandatory for the field staff(representative of Engineer-in-charge) to retain the self-attested (by agencies/ contractors) copies of Tax paid bills of the materials entered in the MAS Register viz., Steel, Cement, Bitumen, Paint, Primer, Distemper, varnishes, Tile Adhesive, Admixture, Anti termite chemical, Water proofing compound material and any other item.

7 Self-attested copies of Tax paid bills of materials taken in MAS Register shall be obtained by the field staff(representative of Engineer-in-charge) from the agencies/ contractors before settling the payments. In case of any doubt the same can be verified by the field staff. However, onus of genuineness of Tax paid bills rests with the agencies/ contractors

8 The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the

contractor on this account. However, cost of photographs, slides, audio/videography etc shall be born by the department.

9 The contractor shall be fully responsible for the safe custody of materials brought by him issued to him even though the materials are under double lock key system.

10 Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.

11 Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

12 In case there is any discrepancy in frequency of testing as given in the list of mandatory test and that in the individual sub-head of work as per CPWD specification 2019 Vol. 1 & 2 the higher of the two frequencies of testing shall be adopted.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

4.5 PROGRAMME CHART

The Contractor shall prepare an integrated program chart within fifteen days of issue of award letter including civil as well as E & M activities for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period and submit the same for approval of the Engineer-in-Charge. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The integrated program chart so submitted should not have any discrepancy with the physical milestones attached in the contract agreement. The program chart should include the following:

(i) Descriptive note explaining sequence of various activities.

(ii) Construction Program prepared on PRIMAVERA or MS Project Software, which will indicate resources in financial terms, manpower and specialized equipment for every important stage.

(iii) Program for procurement of materials by the contractor.

(iv) Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.

(v) Program of procurement of machinery/equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.

(vi) Program for achieving fortnightly micro milestones and periodic milestones.

(vii) In case of non-compliance /delay in compliance in this, a recovery per week to be calculated on per day basis will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.

(viii) If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program within seven days showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time. A recovery shall be made on per day basis in case of delay in submission of the modified program.

(ix) The submission for approval by the Engineer-in-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

(x) The contractor shall also be required to submit 2 sets of monthly progress report of the work in a computerized form, every month. The M**onthly progress report** shall contain the following:

a. Construction schedule of the various components of the work through a bar chart for the next month (or as may be specified), showing targeted tasks (including material and labour requirement) and up-to-date progress.

b. Progress chart of the various components of the work that were planned and achieved, for the month as well as cumulative up to the month under reckoning, with reason for deviations, if any in a tabular format

c. Plant and machinery statement, indicating those deployed in the work.

(i) Man-power statement indicating individually the names of all the staff deployed on the work, along with their designations,No. of skilled workers (trade wise) and total no. of unskilled workers deployed on the work and their location of deployment i.e. blocks.

(ii) Few photos of the month's activities.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

1.0 Project Documentation: Method Statement

The Contractor shall submit within 15 (fifteen) days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance as explained in this Tender document.

2.0 Program Chart

(i) The Contractor shall prepare an integrated program chart in line with Baseline chart showing the various activities mentioned in the NIT, in MS Project/Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower (Skilled/Semi skilled/Unskilled), equipment and machinery required for the fulfillment of the program within the stipulated period or earlier and submit the same for approval to the Engineer-in-Charge within the time period mentioned in schedule 'F', else recovery at rate specified in Schedule 'F' shall be made in case of delay in submission the above program. All dates and time schedule agreed upon shall be strictly adhered to within the stipulated time of completion/ commissioning along with the specified phasing, if any.

(ii) The program chart should include the following:

a. Descriptive note explaining sequence of the various activities.
b. Network Primavera Software/MS project
c. Program for procurement of materials by the contractor.
d. Program of procurement of machinery / equipment, materials, details of man power (Skilled/Semi skilled/Unskilled), in detail work execution program, commensurate with the quantum of work to be done within the stipulated period as per mile stones.

3.0 Other Documentation

(i) The contractor shall submit to the Engineer-in-charge on the 5th day of each month, 2 hard copies and soft copy of monthly progress report. Such progress report shall include the project progress, summary, work progress (planned vs actual), CPM chart, status of financial progress and achievement of milestone, manpower deployment status, inventory of materials and photographs of important activities.

(ii) The Contractor shall hand over all the assets after completion of work with "As Built drawings" services, route plans, Maintenance manuals, Warrantees/ Guarantees or any other document required by the Engineer-in-charge for maintaining these establishments.

(iii) All Drawings shall be made in Latest Version of AutoCAD and the Soft Copies on CDs/pen drive and eight Hard Copies of Prints of all Approved Drawings and "As Built" Drawings shall be supplied by the Contractor to the Engineer-in-Charge at Free of Cost as per the Approved Program.

(iv) CDs/ pen drive and eight Hard Copies of all Approved Design Calculations shall be submitted by the Contractor to the Engineer-in-Charge at Free of Cost as per Approved Program.

(v) Three Copies of "Operation and Maintenance Manual" describing Important Obligatory Precautions from the Point of View of Structural Safety and Procedure for Minor and Major Repairs of each Component of the Buildings and Layout, Renewals of Finishes and Treatments periodically shall be supplied by the Contractor to the Engineer-in-Charge at Free of Cost.

(vi) Three Copies of "Construction Manual" covering Various Aspects of Construction Methods, Difficulties faced and how they are overcome during Execution, etc. shall be supplied by the Contractor to the Engineer-in-Charge at Free of Cost at the Time of Finalization of Work.

4.6 MISCELLANEOUS WORKS

1.0 TEMPORARY ELECTRICITY AND TELEPHONE CONNECTION FOR EXECUTION OF WORK

The contractor shall make his own arrangements for temporary electric and telephone connection, if required and make necessary payment including all initial cost, security money and electric / telephone charges for its use direct to the authority concerned. The Engineer- in- Charge will provide all possible assistance by way of reasonable recommendation for obtaining electricity connection to the concerned authorities but bears no responsibility for the same.

2.0 JURISDICTION OF COURT

Courts at Dehradun alone shall have the jurisdiction to decide any dispute arising out of or in respect of this contract.

3.0 TENDER DRAWINGS

Tendered drawings are uploaded with tender document and also available in soft copy and hard copy with the Executive Engineer …….. The Contractor, if required by him before submission of the tender, may take reference of soft copy of architectural drawings in the O/o Executive Engineer …… and/or take photocopy of hard copy of drawings at his own cost. The Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.

4.0 ORDER OF PREFERENCE

In case there is any discrepancy between the description of items as given in the item nomenclature under schedule of quantities, tender drawings, particular specifications for individual items of work, conditions, CPWD specifications and I.S. Codes etc., the following order of preference shall be observed.

a. Nomenclature of items as per Schedule of Quantities in bid document
b. Tender conditions and Technical Specifications for civil works(Part ‘B’) and E&M works(Part ‘C’)
c. **General conditions of contracts** Maintenance works **-2023** with all correction slips upto previous day of last date of submission of bid
d. Architectural Drawings
e. Delhi Schedule of Rates (latest version) For Civil and E&M works with all correction slips up to previous day of last date of submission of bid
f. CPWD Specifications(latest version) For Civil and E&M works with correction slips up to previous day of last date of submission of bid
g. Indian Standard Specifications of B.I.S. with correction slips upto previous day of last date of submission of bid
h. National Building codes 2016 with correction slips upto previous day of last date of submission of bid
i. ASTM, BS, or other foreign origin code mentioned in tender document.
j. Manufacturer’s specifications.
k. Sound engineering practices or well established local construction practices.
l. Decision of Engineer-in-charge

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Note:

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

(ii) If additional items are available in Schedule of Quantities in bid document beyond the scope of work as per tender/GFC drawings, it may be considered irrelevant for this work.

5.0 HEALTH & SAFETY PROVISIONS

The Contractor will comply of the provisions contained in "**Hand book on safety, Health and Environment 2019"** (free down load available CPWD web site www.cpwd.gov.in) failing which he / they will be liable for the penalties on each violation subject to compounding of the same to maximum of such default as mention in the various unsafe act / unsafe conditions in this manual. This apart from the other fines/levies/penalties mentioned in the documents elsewhere. It is incumbent upon the contractor to ensure in undertaking all health and safety compliance for safety of all concern to generate safety conscious and safety regulatory as his primary statutory duties or responsibilities in the contract.

The Works shall include all Civil, Electrical & Mechanical and all Safety aspects and any other Works required for the Construction and Completion of the Works in all respects and to the Satisfaction of the Engineer-in-Charge.

6.0 Execution of work

(i) The Contractor should visit and examine the site of work and satisfy himself as to the nature of the existing roads and other means of communication and other details pertaining to the work and local conditions and facilities for obtaining his own information on all matters affecting the execution of work. No extra charge made in consequence of any misunderstanding, incorrect information on any of these points or on ground of insufficient description will be allowed.

(ii) The work shall be carried out in conformity with the Plumbing drawings and within the requirements of architectural, electrical, structural and other specialised services drawings.

(iii) The Contractor shall cooperate with all trades and agencies working on the site. He shall make provision for hangers, sleeves, structural openings and other requirements well in advance to prevent hold up of progress of the construction schedule. All supports to the civil structure shall be provided with dash fasteners.

(iv) On award of the work, Contractor shall submit a schedule of construction as per clause -5 of the agreement for approval of the Engineer in charge. All dates and time schedule agreed upon shall be strictly adhered to within the stipulated time of completion/ commissioning along with the specified phasing, if any.

(v) Execution of works as per the scope of buildings & services defined in the contract document, CPWD Specifications, NBC-2016, IS Codes, MoRTH Specifications and Sound Engineering Practices and handing over the assets after making them habitable and functional in all respects.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

FORM "A"

4.7 DECLARATION ABOUT SITE INSPECTION

To,

The Executive Engineer (Civil-I)
CPWD, Dehradun.

Subject:- Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

Dear Sir,

It is hereby declared that as per CPWD 6 for e-tendering, I/we the bidder inspected and examined the subject site and its surroundings and satisfy my self/our selves before submitting my/our 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 I/we may require and in general shall myself/ourselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect my/our bid. I/we the bidder shall have full knowledge of the site and no extra Charges consequent upon any misunderstanding or otherwise shall be claimed at later date. I/we the bidder shall be responsible for arranging and maintaining at 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 me/us implies that I/we has read this notice and all other contract documents and has made myself/ourselves aware of the scope and specifications of the work to be done and of local conditions and other factors having a bearing on cost on the execution of the work.

Yours faithfully

(Seal & Signature)
(Bidder/Duly authorized signatory of the bidder)

Seal & Signature
(Assistant Engineer)
Note:-

(i) Before Inspection of Site, **Sh. Anand Singh Bhandari (Mob. No. 701786683)** concerned Assistant Engineer shall be contacted so that he may remain present during inspection of site by the bidder and signature of concerned Assistant Engineer shall be obtained in Form "A" as proof of site visited by the bidder and uploaded.

(ii) **Alternatively, the agency shall have liberty to take photographs of site inspection carried out by the agency alongwith GPS location of site displayed on the photographs and shall be uploaded along with form "A" without having signature of concerned assistant Engineer.**

(iii) **If Form "A" is not having signature of concerned Assistant Engineer or Form "A" not having photographs of inspection of site along with GPS location, the bid of the bidder shall be treated as ineligible and bid of bidder shall not be opened.**

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

FORM "B"

4.8 FORM FOR BIDDER'S BIDDING CAPACITY

Name of the Firm / Bidder: -……..

Name of work:-

The Bidding capacity of the bidder should be equal to or more than the estimated cost of the work put to tender i.e. **Rs. 1,95,24,580/- (Total)** The bidding capacity shall be worked out by the following formula:

Bidding Capacity (Rs.) = {[AxNx1.5]-B}

Where,

A= Maximum turnover in construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of annual turnover shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

N= Number of years prescribed for completion of work for which bids have been invited. The value of N shall be taken as 1 (one), where the completion period is less than one year.

B=Value of existing commitments and ongoing works to be completed during the period of completion of work for which bid has been invited.

Signature of Chartered Account with Seal (with UDIN Number)

Seal & Signature of Bidder

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.0
PART-B

Miscellaneous Information, CPWD-7, Schedule A To F(Civil and E&M Works), General Conditions & Technical Specifications of Civil Works

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.1 CPWD-7

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

State: - Utterakhand
Branch: - B & R

Zone: CE, Dehradun
Division: EE (Civil-I)

PERCENTAGE RATE TENDER AND CONTRACT FOR WORKS

Percentage RateTender for the work of: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

The bid to be uploaded online by bidder upto :**03.00 PM on 13.11.2026** at **https://etender.cpwd.gov.in.**

(i) Financial Bids will be opened Online in presence of tenderers who may be present at **03:30PM on 13.11.2026** in the office of The Executive Engineer (C-1), CPWD, Dehradun.

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 respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in clause11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

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

A sum of **Rs. 3,90,500/-(EMD Deposit Receipt as per Annexure-I)** is hereby uploaded in the form of Banker's Cheque of a Commercial Bank, Account Payee Demand Draft of a Commercial Bank, Fixed Deposit Receipt (FDR) of a Commercial Bank, Insurance Surety Bonds & Bank Guarantee including e-Bank Guarantee (for batance amount as prescribed in NIT) from a Commercial Bank as earnest money. If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work 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 of commence work as specified, I/we agree that President of India or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said the performance guarantee absolutely, otherwise the said performance guarantee shall be retained to execute all the works referred to in the tender documents as per the terms and conditions contained in of **GCC** Maintenance **Works 2023 with correction slips up to last date of receipt of tender** and/ or referred to therein and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

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

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

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.

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: **

[** to be filled by contractor]

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

ACCEPTANCE

(To be signed by Executive Engineer (C-1), CPWD, Dehradun)

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

(Rs. ....).....

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

a) …….

b) …….

c)…….

For & on behalf of the President of India

Signature……..……..

Designation……....

Date……

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.2 PROFORMA OF SCHEDULES

(CIVIL AND E&M Works)

SCHEDULE 'A' Schedule of quantities	Civil Works: As per Page no. 167 to 177 (refer Part-D) E&M Works : As per Page no 178 to 180 refer Part-D)
SCHEDULE 'D' Extra schedule for specific requirements/ document for the work, if any.	As per bid document
SCHEDULE 'E' Reference to General Conditions of Contract	General Conditions of Contract 2023 **Maintenance works** as Modified & corrected upto previous day of the last date of submission of the bid.
Name of Work	**Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Estimated cost of work	**Rs. 1,93,09,653/- (Civil Works)** **Rs. 2,14,927/-(E&M Works)** **Rs. 1,95,24,580/-(Total)**
(i)Earnest money	**Rs. 3,90,500/-(EMD** Deposit Receipt **as per Annexure-I** and to returned after receiving performance guarantee) **Note:-** EMD shall be made/issued only from the account of the bidder/tenderer submitting the bid/tender. EMD made/issued from the account other than that of the bidder/tenderer submitting the bid, shall not be accepted.
(ii)Performance Guarantee	**(a)** 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). **(b)** Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.
(iii)Security deposit	2.5% of Tendered Value of work or ~~2.5% of tendered value plus 50% of PG for contracts involving maintenance of the building and services/ other work after construction of same building.~~
SCHEDULE 'F'	
GENERAL RULES & DIRECTIONS:	

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Officer inviting tender:	Executive Engineer (C-1), CPWD, Dehradun or his success or thereof
Type of Building	Maintenance Work

(i)Engineer-In-Charge (for civil work) (ii)Engineer-In-Charge (for Electrical work)	1. O/o Executive Engineer (C-1), CPWD, Dehradun (Major Component-Civil) or his success or thereof. 2. Executive Engineer (E), CPWD, Dehradun (Minor Component- E&M Work) or his successor thereof.
Accepting Authority	Chief Engineer, Dehradun or his successor thereof
Percentage on cost of materials and labour to cover all overheads and profits:	15% (7.5% OH + 7.5% CP)

Standard Schedule of Rates	**Civil Works** 1. DSR 2023 Volume-I & II i/c 0.973 correction factor on DSR 2023 + Cost Index 8% **Electrical Works** 1. DSR-2025 (E&M) + Cost Index 4.85%
Department	Central Public Works Department.
Standard CPWD Contract Form	**CPWD Form-7 (Perecntage Rate Tender) as modified & corrected** up to previous day of the last date of submission of bid.
Price Preference to SC/ST individual contractor is valid upto……..	
Clause 1	
(i)Time allowed for submission of Performance Guarantee, Programme chart (time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance.	7 (Seven) days
(ii) Maximum allowable extension with late fee at 0.1% per day of performance guarantee amount beyond the period provided in (i) above	3 (Three) days
Clause 2	

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Authority for fixing compensation under clause 2	Chief Engineer, Dehradun or his successor thereof
Clause 5	
Authority to decide:	
(i)Aithority to convey the decision of shifting of mile stones and extension of time	Executive Engineer (C-1), CPWD, Dehradun or his success or thereof
(ii)Authority to decise Rescheduling of milestones and extension of time	Chief Engineer, Dehradun or his successor thereof.
(iii) Shifting of date of start in case of Delay in handing over of site	Chief Engineer, Dehradun or his successor thereof.

NOTE:Date of completion for civil as well as electrical items of work will be same. Levy of compensation under Clause 2 as well as fair and reasonable extension of time will be granted by the **Chief Engineer, Dehradun or** successor thereof in consultation with and on receipt of required information in this regard from O/o Executive Engineer (C-1), CPWD, Dehradun for Civil works and Executive Engineer (E), CPWD, Dehradun for E&M works.

Time allowed for execution of work from date of start	**08 (Eight)** Months
Number of days from the date of issue of letter of acceptance for reckoning date of start	10 (Ten) days or date of handing over of the site whichever is later
Submission of Time and Progress Chart aginst Mile Stones	Time and Progress Chart along with performance guarantee (refer **Annexure-II**)
Monthly recovery for delay in submission of the monthly progress report within specified period	Rs. 2500/- per month for each default subject to maximum of Rs.25,000/-
Proforma of Schedules	

Clause 5:Schedule of Handing over of site

Part	Portion of site	Description	Time period for handing over to be reckoned from date of issue of letter of intent
Part A	Portion without any hindrance	Handing over site	10th day (Entire site without any hindrances)
Part B	Portion with encumbrances	Not Applicable	Not Applicable
Part C	Portions dependent on work of other agencies	Coordination with other working agencies	Coordination with other working agencies may be required

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Clause 6-Computerised Measure Book (CMB) / Electronic Measurement Book (EMB)	**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 to interim payment	**Civil Works** Rs. 24 Lakhs **Electrical Works** Rs 0.27 Lakhs for E&M works However, Engineer-in-Charge at his discretion may release monthly payment even at a lesser amount subject to availability of funds from client. But Contractor can not claim it as a matter of right and no interest payment as per clause 7 is permitted.
Clause 7A Whether Clause 7A shall be applicable (No RA bill shall be paid till submission of EPFO, ESIC and BOCW Welfare Board)	Yes (a)No Running Account Biil/Final Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge. (b)The following documents shall also be part of the bill submitted by the contractor (these documents shall be owned by the contractor) before making payment: 1. Details of person employed with date of their employment up to previous month. 2. Documents of payment made to the employees directly into their bank accounts up to previous month. 3. Documents of attendance through biometric attendance or other mode up to previous month. 4. Documents of deposition of EPF and ESI deductions in the employee's accounts up to previous month. 5. Any penalty imposed on the agency for delay in disbursing payment and deposition of EPF and ESI deductions in the employee's accounts up to previous month. 6. Any other document(s) required as per statutory requirements and/or as directed by Engineer-in Charge (c) In case, any of the documents submitted by the contractor is found false/forged at a later date, action for debarment of contractor will be taken by the SE/CE concerned
Clause 8A Authority to decide compensation on account if contractor fails to submit completion plans.	Executive Engineer (C-1), CPWD, Dehradun or his success or thereof

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Recovery rate for not submission of completion plans by the contractor	0.1% of tendered value of all Components
Clause 10 A	
(ii) **List of testing equipment to be provided by the contractor at site lab**	**As required during the Execution of Work as per CPWD Specification (refer Annexure-IV)**

Clause 10 B (ii) Whether Clause 10B (ii) shall be applicable	**Not Applicable**
Clause10 B (iii) Whether Clause 10B (iii)shall be applicable	**Not Applicable**
Clause10C (Applicable/Not Applicable) Note:Applicable in only those contracts where clause 10CC is not applicable)	**Applicable**
Labour Component (Civil)	**25%**
Labour Component (Electrical)	**15%**
Clause10CC (Applicable/Not Applicable)	**Not Applicable**

Sl.No.	**Relevant component of Material /Labour for price escalation**	**Percentage of total value of work**
1.	Cement component	-
2.	Labour Component	-
3.	Civil component of other construction Materials	-
4.	E&M(Electrical and Mechanical) component of other construction Materials	-
5.	POL(Diesel) Component	-
6.	Reinforcement steel bars/structural steel component	-
7.	Bitumen component	-
	Total	-

B. Maintenance Period

Sl.No.	Relevant component of Material /Labour for price escalation	Percentage of total value of work
1.	Labour Component	N.A.
2.	Civil component of other construction Materials	N.A.
3.	E&M(Electrical and Mechanical) component of other construction Materials	N.A.
4.	Bitumen component	N.A.
	Total	N.A.

Clause11	
Building information model (BIM) is applicable	No

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Specifications to be followed for execution of work	**CIVIL WORKS:** 1.CPWD Specifications 2019, Volume-I with correction slips up to previous day of last date of submission of tender. 2.CPWD Green Rating Manual 2019 with correction slips up to previous day of last date of submission of tender. 3.CPWD Handbook on Safety, Health and Environment with correction slips up to previous day of last date of submission of tender. 4.CPWD Manual on Accessible Built Environment 2019 with correction slips up to previous day of last date of submission of tender. 5. MORTH specification **ELECTRICAL WORKS:** Specifications to be followed for execution of work (1) CPWD General Specification For electrical Works with correction slips/ amendments up to last dateof submission of tender. (i) Part I & II (Internal & Exernal) 2023. (ii) Part-III Lift & Escalators-2023 (iii) Part-IV Sub Station – **2013** (iv) Part V Wet Riser & Sprinkler Systems – **2020** (v) Part VI Fire Detection and Alarm System – **2018** (vi) Part VII D.G. Sets - **2013** with correction slips up to previous day of last date of submission of tender (1) Quality Assurance Policy & Check List of E & M Services –2016 (2) CPWD Green Rating Manual 2019. CPWD Handbook on Safety

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Note: All above Specifications & other specification, codes & standards mentioned else where in the bid document shall be applicable with upto previous day of last date of receipt of bid.

Clause-12.2(c)	Deviation Limit beyond which clauses12.2 (c) shall apply for building work.	**100%**
	(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	**100%**
	(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	**100%**

Clause 16 Competent authority for deciding reduced rates.	Chief Engineer, Dehradun or his success or thereof.
Clause 17 Contractor liable for damages, defects during defect liability period	Defect liability period shall be **1 (one) year** to be reckoned after the actual date of completion of the work
Clause 18	
List of mandatory machinery, tools & plants to be deployed by the contractor	As required during the Execution of Work as per CPWD Specification (refer Annexure-IV)
Clause 19 Competent Authority to decide penalty for eachdefault–	Engineer-in-Charge (Major / minor Component of work).
Clause19 C	Rs. 5,000/- each default subject to maximum of Rs.50,000/=
Clause19 D	Rs. 5,000/- each default subject to maximum of Rs.50,000/=
Clause19 G **(i)Penalty For Each Default** **(ii)Enhanced Penalty Per Day For Continuous Default**	(i) Rs. 5,000/-each default subject to maximum of Rs.50,000/= (ii) Rs. 5,000/-per day for each default subject to maximum of 5% of the estimated cost put to tender
Clause19 K	Rs. 5,000/-per tradesman per day subject to maximum of Rs.50,000/=
Clause-25	**i.** Conciliator: ADG, Chandigarh or his successor thereof. **ii.** Arbitrator Appointing Authority: Chief Engineer, Dehradun or his successor thereof. **iii.** Place of Arbitration:Dehradun, Utterkhand
Clause-32	Requirement of Technical Representative(s) and Recovery Rates

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Requirement of Technical Staff		Minimum experience (Years)	Designation of Technical Staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32(i)
Qualification	Number (of Major + Minor Component)			
Graduate Engineer or Diploma Engineer	1 + 1	2 or 5 respectively	Project Manager cum Planning/ Quality/Site/ Billing Engineer	Rs. 15,000/- per month per person

Note:

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

ii. **The above given strength shall be required to be deployed as and when necessity arises at site or so directed by Engineer-in-charge.**

iii. **The Tenderer shall submit a certificate of employment of the technical representative (s) (in the form of copy of Form -16 or CPF deduction issued to the Engineers employed by him) along with every account bill/final bill and shall produce evidence of regular physical availability of such engineers on the above project at any times if so required by the Engineer-in-charge.**

iv. **The Recovery on account of non-deployment of technical staff shall be made by the Engineer in Charge of the respective Discipline / Component.**

Clause 38			
(i)	(a)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of "Delhi Schedule of Rates 2023 with correction slips upto previous day of last date of submission of bid.	
(ii)		Variations permissible on theoretical quantities:	
	(a)	Cement	2% plus / Minus
	(b)	Bitumen all works	2.5% plus 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

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

S.No.	Description of Item	Rates in figures and words at which recovery shall be made	
		Excess beyond permissible variation	Less use Beyond Permissible Variation
1.	Ordinary Portland Cement (OPC)	Nil	Not permitted
2	Pozzolana Portland Cement (PPC)	Nil	Not permitted
3.	Steel Reinforcement	Nil	Not permitted
4.	Structural Steel sections	Nil	Not permitted

Executive Engineer
(For and on behalf of President of India)

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-II

5.3 TABLE OF MILE STONE (S)

Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

NIT No.: 97/CE/EE(C)-1/CPWD/Dehradun/2026-27

Milestone(s) for Work shall be as pertable given below: -

TABLE OF MILE STONES

Sl. No.	Description of mile stone (Physical)	Period for completion from date of start in days/months	Withheld amount for non-achievement of mile stone.
1.	20% of Tendered Value of Work.	2 Months	1.00% of the tendered value
2.	50% of Tendered Value of Work.	4 Months	1.5% of the tendered value
3.	80% of Tendered Value of Work.	6 Months	1.5% of the tendered value
4	Completion of Work, defect rectification and cleaning of site.	8 Months	1.00% of the tended value

Note:

1. Milestones shall be applicable for both Civil and E & M works.
2. Percentage of work completion shall mean physical quantum of work done or percentage of tendered value of work done

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-III

5.4 ESTABLISHING SITE LABORATORY AND TESTING OF MATERIALS

Equipments for conducting necessary tests (as per CPWD Specifications 2019 Volume-I & II) shall be provided and installed at site in the well-furnished site laboratory by the agency 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.	100 MT compression testing machine, electrical-cum-digital	As required
2.	Slump cone, steel plate, tamping rod, steel scale, scoop	As required
3.	Vicat Apparatus with Desk pot	As required
4.	Pumps and pressure gauges for hydraulic testing of pressure	As required
5.	Weighing scale platform type 100 Kg	As required
6.	Graduated glass measuring cylinder of various capacity	As required
7.	Sets of sieves of 450 mm internal dia for coarse aggregate [100mm, 80mm, 40mm, 2mm, 12.5mm]	As required
8.	Sets of sieves of 200mm internal dia for fine aggregate [4.75mm; 2.36 mm; 1.18 mm; 600 microns; 300 microns & 150 micron, with lid and pan]	As required
9.	Sieve Brushes and sieve shaker capable of 200mm and 300mm dia sieves, manually operated with timing switch assembly	As required
10.	Cube moulds size 70mmx70mmx70mm	As required
11.	Cube moulds size 150mmx150mmx150mm	As required
12.	Ultrasonic Test Equipment (For concrete)	As required
13.	Hot air oven- temp. Range 50°C to 300°C-sensitivity 1 degree	As required
14.	Electronic balance 600gx0.1g., 10kg and 50 kg	As required
15.	Digital thermometer up to 150oC	As required
16.	Measuring jars 100ml, 200ml, 500ml	As required
17.	Vernier calipers 12” & 6” size	As required
18.	Digital pH meter- least count 0.01mm	As required
19.	Digital Micrometer- least count. 0.01mm	As required
20.	GI tray 600x450x50mm, 450x300x40mm, 300x250x40mm	As required
21.	Rebound hammer- test digital rebound hammer	As required
22.	Screw gauge 0.1mm-10mm, least count 0.05	As required
23.	Motorized sieve shaker	As required
24.	Extra Bottom plates for 15 cm cube mould	As required
25.	Standard Vibration Table for gauging the Cubes	As required
26.	Distance metre (of 30metre)	As required
27.	Hacksaw with 6 blades	As required
28.	Measuring tape (5metre)	As required
29.	Floor Brushes, hair dusters, scrappers, wire brush, paint brushes, shutter steel platoil, kerosene with stove etc.	As required
30.	Concrete Core cutter Machine	As required
31.	Moisture Meter	As required
32.	Any other equipment for site tests as out lined in BIS codes and as directed by the Engineer-in-charge.	As required

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-IV

5.5 Suggestive List of Machineries, Tools & Plants to be deployed by the Contractor at site

S. No.	**Name of Equipment**	Min. Numbers
1	Excavators (various sizes)	**As per Requirement**
Equipment for hoisting & lifting		
2	Tower Crane or Concrete Pump	**As per Requirement**
Equipment for Concrete work		
3	Automatic Concrete Batching Plant as per direction of Engineer-in-Charge	**As per Requirement**
5	Concrete transit mixer	**As per Requirement**
6	Concrete mixer (Diesel/Electrical)	**As per Requirement**
7	Needle vibrator of various sizes (Petrol/Electrical)	**As per Requirement**
8	Screed leveler	**As per Requirement**
9	Surface vibrator	**As per Requirement**
Equipment for Building work		
10	Bar bending Machine	**As per Requirement**
11	Bar cutting machine	**As per Requirement**
12	Drilling machine	**As per Requirement**
13	Welding machine	**As per Requirement**
14	Fully automatic Cube testing machines (Capacity: 100 tonne)	**As per Requirement**
15	Steel Plate Shuttering with necessary adjustable MS props.	**As per Requirement**
16	Double steel scaffolding and staging materials	**As per Requirement**
17	Grinding/polishing machines	**As per Requirement**
18	Kota / Granite stone cutting machine	**As per Requirement**
19	Ceramic/Vitrified tile cutting machine	**As per Requirement**
20	Vacuum dewatering machine along with joint cutters for concrete	**As per Requirement**
Equipment for transportation		
21	Tippers	**As per Requirement**
22	Trucks	**As per Requirement**
Pneumatic equipment		
23	Air compressors (diesel)	**As per Requirement**
Dewatering equipment		
24	Pump (diesel)	**As per Requirement**
25	Pump (electric) (Desirable)	**As per Requirement**
Power equipment		

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

26	DG Set of required capacity	**As per Requirement**
27	Any other machinery required for completion of the work as per decision of Engineer-in-charge.	**As per Requirement**

Note:

a) Workshop facilities for fabrication/addition and alterations, and other allied works shall be arranged by the contractor at his own cost.

b) The list of equipment/T&P/machinery as per above is for general guidance. In addition to these, machinery / equipment as required shall be arranged by the contractor in case the requirement at any stage exceeds as per the Programme finalized at his own cost and nothing extra whatsoever on this account shall be paid. This includes equipment for arrangement of concrete from RMC producing plants also.

c) All the equipment, T&P and machinery shall be kept in good working conditions.

d) Equipment like batching plant, concrete pump excavators/Transit mixer etc. shall be allowed to be moved away from the site when, the same are no longer required at site of work in the opinion of Engineer-in-charge.

e) In addition to above list, contractor is bound to bring at site any test equipment for any item of work, at his own cost, which Engineer-in-Charge may direct him. Nothing extra shall be paid to contractor in this regard. Direction of Engineer-in-Charge in this regard shall be final & binding.

f) If contractor fails to comply such directions within time specified by Engineer-in-Charge, the same shall be brought to site by department by any means at cost of contractor itself and nothing shall be paid in this regard.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-V

5.6 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/ Refund of milestone withheld amount

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

   OR**

   Whereas the Executive Engineer, …… on behalf of the President of India (here in after called "The Government") has entered into an agreement bearing number……..... with …….....(name and address of the contractor) ……..…….. (hereinafter called "the Contractor") for execution of work …… (name of work)……... The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. ……..…… (Rupees …… only) valid upto …….. (date)..……as Performance Guarantee/Security Deposit/Mobilization Advance/Refund of mile stone withheld amount 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"), here by 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 amountdue 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 suchdemand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. ……(Rupees …… ……only)

4. We, …… (indicate the name of the Bank) ……, further undertake to pay the Government any money so demanded not withstanding any dispute or disputes raised by the contractor in any suit or proceeding pending On non-judicial stamp paper of minimum Rs. 100 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

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

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 what so ever 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 not withstanding 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. Not withstanding anything mentioned above, our liability against this guarantee is restricted to Rs. …… (Rupees …….. only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date .....
Witnesses:

1. Signature……
Name and address

2. Signature …….
Name and address

Authorized signatory
Name
Designation
Staff code no.
Bank seal

*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/Refund of mile stone withheld amount, as the case may be.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.7 GENERAL CONDITIONS FOR CIVIL WORK

1.0 COMPLIANCE WITH LOCAL BYE-LAWS, RULES AND REGULATIONS

The work shall be carried out in the manner complying in all respects with the requirements of relevant bye-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 shall be paid on this account. The contractor shall give due notices to the Municipality, Gram Panchayat, Police and /or other authorities as may be required under the law / rules under force and obtain all requisite licenses / permissions to carry out the work and pay all charges which may be levied on account of his execution of the work under the agreement. Nothing extra shall be payable on this account.

In the event of any restrictions being imposed by security and traffic agencies or any other authority having jurisdiction in the area on the working or movement of labour / material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on this account. The loss of time on this account, if any, shall have to be made up by generating additional resources etc.

2.0 PROTECTION OF EXISTING STRUCTURES SERVICES AND INTERFERENCE WITH OTHERWORKS

The contractor shall protect existing drains, pipes, cables, overhead wires, sewer lines, water lines and other services encountered in the course of execution of the work, and shall repair any damage caused by him at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.

The contractor shall carry out his work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor (s) or by the Engineer-in- Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed, so as not to interfere with the operations of other contractors. He shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-Charge.

3.0 RECESSES, HOLES, OPENINGS, ETC.

The contractor shall leave such recesses, holes, openings, etc. as may be required for the electric, air-conditioning and other related works for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall fix the same at the time of casting of concrete, stone work and masonry work or at any similar location if required, and nothing extra shall be payable on this account. Alternatively, he will cut recesses in RCC/ Masonry with specialized cutting tools as per requirement of work. **All Recesses, holes and openings shall be sealed with appropriate epoxy chemicals after or during installation** of inserts in the same. Nothing extra shall be payable for these operations to the contractor.

4.0 ALL HEIGHTS, LIFTS, LEADS AND DEPTHS

Unless otherwise specified in nomenclature of item, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.

5.0 STACKING OF MATERIALS

The Contractor(s) 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. The stacking shall take place as per stacking plan however, if any change is required, the same shall be done with the approval of Engineer-in-Charge.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.0 PREVENTION OF NUISANCE AND POLLUTION CONTROL

The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupiers of adjacent properties and to the public in general and to prevent any damage to such properties from pollutants like smoke, dust, noise. The contractor shall use such methodology and equipment so as to cause minimum environmental pollution of any kind during and minimum hindrance to road users and to occupants of the adjacent properties or other services running adjacent/near vicinity. The contractor shall make good at his cost and to the 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. All waste or superfluous materials shall be carried away by the contractor, without any reservation, entirely to the satisfaction of the Engineer-in-Charge.

7.0 **DAMAGE CAUSED BY RAIN, SNOWFALL, FLOOD, epidemic/pandemic OR ANY OTHER NATURAL CALAMITY**

No payment shall be made for any damage caused by rain, snowfall, flood **epidemic/pandemic** or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the government property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

8.0 **WATCH AND WARD/GUARD OF THE BUILDINGS**

The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including all equipment, services provided by him against pilferage and breakage during the period of Installations and thereafter till the buildings are physically handed over to the client department or one month after physical date of completion whichever is earlier. No extra payment shall be made on this account and no claim shall be admissible on this account for this period.

9.0 **PROTECTION OF FLORA**

The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.

10.0 **SETTING OUT**

(i) It shall be responsibility of the contractor to ensure correct setting out of alignment. Real Time Kinematics / Total Station survey instruments only shall be used for layout, fixing boundaries, and centre lines, etc., Nothing extra shall be payable on this account.

(ii) Though the site levels are indicated in the drawings the contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. The contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of work. These benchmarks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account.

(iii) 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.

(iv) The proposed level of top surface of internal roads, pathway, lawns etc. are subjected to corrections as per original/existing ground level (OGL/EGL) with the approval of Engineer in-charge.

11.0 **SCAFFOLDING/SHUTTERING**

Wherever required for the execution of work, all the scaffolding shall be provided and suitably

fixed, by the Contractor. It shall be provided strictly with lock and cup steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

12.0 CO-OPERATION WITH OTHER CONTRACTORS /SPECIALIZED AGENCIES/ SUBCONTRACTORS

(i) The Contractor shall take all precautions to abide by the environmental related restrictions imposed by any statutory body having jurisdiction in the State as well as prevent any pollution of streams, ravines, river bed and waterways. All waste or superfluous materials shall be transported by the Contractor, entirely to the satisfaction of the Engineer-in-Charge and disposed at designated places only. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints, lack of public transport, inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

(ii) The Contractor shall cooperate with and provide the facilities to the sub-Contractors and other agencies working at site for smooth execution of the work. The Contractor shall:

a. Allow use of scaffolding, toilets, sheds etc.
b. Properly co-ordinate their work with the work of other Contractors.
c. Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
d. Provide electricity and water at mutually agreed rates.
e. Provide hoist and crane facilities for lifting material at mutually agreed rates.
f. Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
g. Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
h. Resolve the disputes with other Contractors / sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.

(iii) Other agencies will also simultaneously execute and install the works of substation / generating sets, air-conditioning, lifts, etc. for the work and the contractor shall afford necessary facilities for the same.

(iv) The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in- Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others contractors/ specialized agencies/ subcontractors in an acceptable and in a proper coordination manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-Charge.

(v) For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

(vi) All material shall only be brought at site as per program finalized with the Engineer- in-Charge.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

13.0 SAFETY PRACTICES AND SUPERVISION

(i) 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.

(ii) 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.

(iii) In addition to the supervision of work by CPWD engineers, the Consultants/safety teams deployed by the client shall also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by CPWD engineers to the contractor. Upon receipt of instructions from Engineer-in- Charge these are also to be made good by necessary improvement, rectification, replacement upto complete satisfaction of Engineer-in- Charge.

(iv) All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their record measurements in computerized measurement book duly checked shall be deposited with Engineer-in-Charge or his authorized representative, prior to hiding these items.

(v) The contractor shall follow “Safety, Health and Environment Handbook 2019” issued by CPWD in 2019 amended up to last date of submission of bid.

14.0 SUBMISSION AND DOCUMENTATION

(ii) The Contractor shall display licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works, at his site office. He should also keep at site at least one set of relevant BIS Codes and other relevant codes at site and produce the same if asked for by Engineer-in-Charge. In case of non-compliance, these codes will be purchased from the market and actual cost of purchase will be recovered from the next RA Bill of the Contractor.

(ii) The Contractor shall make available four (04) sets of completed work Drawings and services drawings like drainage, sewerage, water supply, road and electrical installations, “As Built Drawings” along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.

15. PRODUCT DELIVERY, STORAGE AND HANDLING OF CHEMICALS

(i) The contractor shall construct storage space for Chemicals materials to ensure that the storage conditions are as recommended by the manufactures.

(ii) All the materials shall be procured and delivered in sealed containers with labels legible and intact.

(iii) All the chemicals {polymers, epoxy, water proofing compound, plasticizer, Polysulphide, SBR based elastomeric, APP (Atactic Polypropylene Polymer), all exterior and interior paints, polish etc.} shall be procured in convenient packs say 20 litres/kg} capacity packing or less as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200 litre (kg) drums unless otherwise specifically permitted by the Engineer-in-Charge. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the Engineer-in-Charge.

(iv) All material required for the execution of the work shall be got approved, procured and deposited with the Departmental supervisory staff. The materials shall be kept in joint custody of the

contractor and the Department. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained. Different containers of each chemical shall be serially numbered on packing and also consumed in that order. Day-to-day account of receipt, issue and balance shall be regulated by the Department and proper account shall be maintained at site of work in the prescribed form as per the standard practice.

(v) The original copies of challan /cash memos towards the quantity of various chemicals procured shall be made available by the contractor at the request from the Engineer- in-Charge and a copy of the same shall be kept in record.

(vi) The Name of manufacturers, manufacturer's product identification, manufacturer's mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container.

(vii) The contractor shall submit for the chemicals procured, manufacturer's and / or authorized dealer's certificate regarding supplying and verifying conformance to the material specifications, as specified.

(viii) All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.

(ix) Empty containers of the chemicals should not be removed from site without the written approval of the Engineer-in- Charge or till the completion of work and shall be removed only with the written approval of the Engineer-in- Charge.

(x) All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.

(xi) Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipment in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.

(xii) All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.

(xiii) The chemicals shall be tested in an independent laboratory as approved by the Engineer-in-Charge at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in-Charge. Nothing extra shall be payable on this account.

16.0 **DE-WATERING**

i) De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor's responsibility.

ii) Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of cement concrete, taking levels etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.

iii) In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

iv) Contractor shall keep the area free from water. If dewatering or bailing out of the water is required, the contractor shall do the same at his own cost and nothing extra shall be paid. Nothing extra shall be paid for execution of work in or under water and / or liquid mud including pumping out of water as required.

17.0 RESOURCES CONSUMED DURING CONSTRUCTION

a. The contractor shall ensure that the water and electricity is not wasted during construction. The Engineer in Charge can bring to the attention any such wastage and the contractor will have to ensure that such bad practices are corrected.
b. The contractor shall install necessary meters and measuring devices to record the consumption of water, electricity and diesel on a monthly basis for the entire tenure of the project.
c. The contractor shall ensure that all run-off water from the site, during construction is collected and reused to the maximum.
d. The contractor shall use treated recycled water of appropriate quality standards for construction, if available for watering, mixing with earth for compaction, sprinkling etc. only.
e. The contractor shall minimize the use of electricity.

18.0 SOURCES OF MATERIALS

a. The water for construction work shall be arranged by contractor. In case, contractor takes water from government source free of cost then recovery of water charges shall be made as per relevant Clauses. The contractor shall get the water tested with regard to its suitability of use in the works and get written approval from the Engineer-in-charge before he proceeds with the use of same in execution of works. If the tubewell water is not suitable, the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in CPWD specifications/BIS code. Contractor may be required to install industrial RO plant at site at his own cost, for treating water for construction purpose and nothing extra shall be paid to the contractor on this account.
b. Stone for concrete work, stone masonry, stone aggregates and stone ballast shall be of hard stone variety, mined from Govt. approved mines. The contractor shall submit source(s) of material along with samples of material from that source. Based on stipulated specifications, source and sample shall be approved by the Engineer- in-Charge
c. Coarse and fine aggregates to be used for concrete work, mortar for masonry, plaster etc. shall be sourced from Govt. approved mines or manufacturer(s) as approved by Engineer-in-charge. The contractor shall submit source(s) of material along with samples of material from that source. Based on stipulated specifications, source and sample shall be approved by the Engineer- in-Charge.
d. In Detailed schedule of items/drawings, wherever provision for coarse sand and fine sand is specified in any item, use of crushed stone sand or manufactured sand shall also be permissible as per codal provisions. Nothing extra shall be payable or recoverable on this account, over & above the tendered rates of the contractor. However decision of the Engineer-in-charge w.r.t. selection of material i.e. natural sand, crushed stone sand, manufactured sand etc. shall be final and binding on contractor.
e. All Stone aggregates /stone shall be of hard stone variety to be obtained from approved quarries.
f. Sand for cement concrete work, masonry mortar and plaster work shall be of standard quality. Sand shall be obtained from approved quarry and screened as required. The same shall be clean and consist of hard material.
g. The water for construction work shall be arranged by contractor. In case, contractor takes water from government source free of cost then recovery of water charges shall be made as per relevant Agreement Clauses. The contractor shall get the water tested and get written approval from the Engineer-in-charge before he proceeds with the use of same for execution of works. Before installation of tubewell, necessary local/central approval shall be obtained, to the satisfaction of Engineer-in-Charge. If the tube well water is not suitable, then the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in CPWD

specifications/BIS code. Contractor, may be required to install industrial RO plant at site at his own cost, for treating water for construction purpose.

h. In schedule of quantity, wherever provision for coarse sand and fine sand is specified in any item, use of crushed stone sand or manufactured sand shall also be permissible as per codal provisions. Nothing extra shall be payable or recoverable on this account, over & above the tendered rates of the contractor. However decision of the Engineer-in-charge w.r.t. selection of material i.e. natural sand, crushed stone sand, manufactured sand etc. shall be final and binding on contractor.

19.0 **PREPARATION OF SAMPLE**

The contractor shall prepare Samples of materials, sample room, sample toilet, one flight of sample stair case, sample corridor as per Milestones defined in Schedule "F". If the of sample room, sample toilet, one flight of sample stair case, sample corridor, all complete, is not made within time specified in the Milestone No. 3 of Schedule "F", recovery @ Rs.5000/- per day, in addition to the amount withheld as specified in Schedule "F", will be affected till its completion to the entire satisfaction of Engineer-in-Charge. No further work related to finishes shall be allowed till the samples are prepared and approved. However, Brick work and Plaster work shall continue as per the issued drawings and execution plan.

20.0 COMPLIANCE TO ENVIRONMENTAL LAWS

The contractor shall comply the directives of Hon'ble National Green Tribunal dated 04.12.2014 & 10.04.2015 and EIA Guidance Manual issued in February 2010 and Construction & Demolition Waste Management Rules, 2016 or any subsequent guidelines issued in this regard. The compliance of the contractor shall not be limited to the following:

i) The contractor shall not store/dump construction material or debris on metaled road.

ii) The contractor shall get prior approval from Engineer-in-Charge for the area where the construction material or debris can be stored beyond the metaled road. This area shall not cause any obstruction to the free flow of traffic/inconvenience to the pedestrians. It should be ensured by the contractor that no accidents occur on account of such permissible storage.

iii) The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precaution that the vehicle are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air/contaminate air.

iv) The contractor shall provide mask to every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.

v) The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relatable to dust emission.

vi) The contractor shall ensure that C&D waste is transported to the approved C&D waste site of local authority only as per Construction & Demolition Waste Management Rules, 2016 and due record shall be maintained by the contractor.

vii) The contractor shall compulsorily use jet in grinding and stonecutting.

viii) The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF Guidelines,2010.

ix) The contractor shall carry out on-road-inspection for black smoke generating machinery. The contractor shall use cleaner fuel.

x) The contractor shall ensure that the DG sets comply emission norms notified by MoEF.

xi) The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.

xii) No extra payment will be made for operation/activity mentioned at Sl. No. i to xi above.

21.0 STRUCTURAL SAFETY

Following guidelines shall be followed where height of casting of concrete is higher than 3.5m or where higher loading is coming during casting of concrete or large span structure more than 5 meter long or some special structure like domes, shikhars, vaults, steel structure etc.

(i) Centering/scaffolding/staging for casting of these structures should be properly designed by a qualified and experienced person/agency having past experience in design of false work (centering) for concrete structures and it should be approved by Engineer-in-Charge. The provisions of clause 7 of IS: 14687 may be referred for design of false work (centering).

(ii) A method statement for erection and dismantling of the centering/scaffolding/staging and process of concreting & process of anchor of steel structure shall be prepared by contractor and submitted to Engineer-in- Charge for approval and the work shall be commenced only after approval of method statement by Engineer-in-Charge. The provisions of clause 9 of IS: 14687 may be referred for erection of false work (centering), safety precautions and other site operations, pertaining to false work (centering).

(iii) Engineering form watcher shall be engaged during erection, concreting and dismantling for early detection of any movement or instability in the system.

(iv) A detailed program of field safety inspection of centering/scaffolding/form work of such structures during different stages should be chalked out and strictly followed.

(v) Inspection approval of Engineer in charge, the prime responsibility of safety of false work shall remain with contractor for concrete and steel work.

(vi) Provision of safety net, fall arresting system including other safety gears, for workers, working over these structures shall be made in contract and should be followed strictly.

22.0 **OTHER CONDITIONS W.R.T EXECUTION OF WORK**

Automatic concrete Batch Mixing Plant

The bidder shall install one number fully automatic concrete batch mix plant of minimum capacity 30 cum/hr along with compatible concrete pumps and pipes etc within 45 days from the date of start of work failing which recovery will be made at Rs.20,000/- per day till the automatic concrete batch mix plants, concrete pumps and pipes are made available at site to the satisfaction of Engineer-in-Charge.

Tool and Plants

The required T&P shall be brought to site well in advance so as to ensure the progress of the work as per the contract / schedule. However, minimum deployment of T & P and other construction equipments shall be as per Schedule-F.

Technical Staff

The contractor shall submit the list of engineers / technical staff with charter of duties / responsibilities of each one related to execution of the work. A biometric system to ensure presence of all the appointed engineers and technical staff will be maintained in the site office of the Engineer-in-Charge and recovery shall be affected as specified in Clause 32 of Schedule F.

a. The work shall be carried out in accordance with the tendered drawings and detailed drawings including revised drawings, if any, issued during execution of work by the Engineer-in-Charge.

b. Before commencement of any item of work the contractor shall correlate all the relevant architectural, structural and MEP drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available there from is complete and unambiguous. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement and execution of work based on any erroneous and or in complete information and no claim whatsoever shall be entertained on this account.

c. The execution of items shall be carried out in accordance to relevant CPWD specifications (amended up to date of receipt of tenders). For the items which are not covered under CPWD Specifications, the Particular Specifications / B.I.S. Specifications shall have to be followed. The decision of Engineer-in-Charge shall be final in this regard.

d. Wherever any reference is made to any Indian Standard, it shall be taken as reference to the latest edition with all amendments / revision issued thereto upto the last date of receipt of tenders.

e. The contractor is required to deploy resources as per availability of site. However, no claim will be entertained for idle labour, idle machinery, idle technical/no- technical staff, idle T&P etc.

f. The Contractor shall procure the required materials in advance so that there is sufficient time to testing of the materials and clearance of the same before use in the work. The Contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight / dimensions as may be necessary for execution of work.

g. The work of services will be executed simultaneously. The Contractor shall minimize the scope of making recesses, holes, opening etc. as the same shall be planned in advance and necessary grooves/niches shall be provided in shuttering of RCC.

h. The Contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other Contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed, so as not to interfere with the operations of other Contractor simultaneously working or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-Charge.

i. Laminates on flush doors shall be machine pressed in factory. The design and pattern of laminates shall be as per the approval of engineer in charge.

j. Wherever mild steel / galvanized iron sections and pipes are provided in the work, priming coat of approved steel primer shall be done after removing rust from section if any and finally finished with low VOC synthetic enamel paint or as mentioned specifically in specification.

k. Monkey ladder shall be provided wherever specified for overhead water tanks, mumty and lift machine room doors with frame and steps of angle iron, etc.

l. Wall mounted door stoppers shall be provided to protect the wall where the door handle would run in to it.

m. For avoiding of scratch marks or damage to the vitrified / ceramic floor tile, the necessary arrangement of hessian cloth with a coat of plaster of paris and plastic sheet over it shall be provided. Nothing shall be paid extra on this account.

n. Fall nets and scaffolding nets for protection from debris / dusts and noise etc. are to be provided during the construction period. Nothing extra shall be paid on this account.

o. Wherever, M.S. grill provided in window, weight of M. S grill in each window should be as specified in the tendered drawings

23.0 **OTHER CONDITIONS W.R.T RATES AND PAYMENTS**

a. The rates quoted by the contractor are deemed to be inclusive of site clearance/jungle clearance, setting out work, profile, setting lay out on ground, establishment of reference bench mark(s), installing various temporary signage, taking spot levels, compulsory use of helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers as per drawing supplied by Engineer in charge, working during monsoon or odd season, working beyond normal hours, working at all depths, height, lead, lift, levels and location etc. and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

b. The rates quoted by the tenderer shall be firm and inclusive of all taxes, royalty charges and levies including GST. Taxes shall be deducted at source as per statutory orders and Govt. rules and regulation, from bill payments to the contractor by Engineer-in-charge.

c. No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

d. All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at all level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in- Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in- Charge, a site/construction yard layout, specifying areas within the land under the scope of work for approval of Engineer-in-Charge, for construction of site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank etc.

e. For completing the work in time, the contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the contractor with them.

f. Nothing extra shall be payable to the contractor for compliance of various additional conditions, special conditions, general terms & conditions, additional/general specifications, etc. as prescribed in bid document except specifically stated therein, on and above the quoted rate(s) of various items of schedule of quantities (civil as well as electrical work) of the bid document.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

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

h. In the case of items of which abbreviated nomenclature is not available in the above cited publication and also in case of extra and substituted items of works for which abbreviated nomenclature is not provided in the agreement, the full nomenclature of items shall be reproduced in the measurements books and bill forms for running account bill.

i. Contractor should hand over the warranty of all the specialized items and non-specialized items, if any such warranty provided by manufacturer, which have been installed in the constructed building to the department.

j. Contractor shall give performance test of the water supply, sanitary, sewer and electrical installation(s) as per the specifications in the presence of the Engineer-in- charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the Contractor for the test.

k. Contractor shall not divert any RA bill payments and advance payments or part thereof for any work other than that needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. mobilization advance, secured advance against materials brought at site etc.) are required to be re-invested in the contracted work to ensure advance availability of resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.

l. The contractor shall do installation of fully automatic concrete batch plant, yard for keeping various materials, cement/ steel store within site at location approved by the Engineer In-charge. He will also provide temporary/semi- permanent structure for samples room, toilets for labour etc., working yard and other essential requirements inside the campus at location approved by the Engineer- in- charge. All labour and staff of contractor shall possess valid identity cards. 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 these accounts and no claim, whatsoever, on these accounts shall be entertained.

m. The original copies of challan/cash memos towards the quantity of various materials procured shall be made available by the contractor at the request from the Engineer- in-Charge and a copy of the same shall be kept in record. Warranty / Guarantees cards of various materials shall also be submitted by the contactor during handing over of the building to Department.

n. The bidder may have to build temporary enabling road from village/Major District Road / State Highway/National Highway, road inside or outside the campus for different construction activities at site. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

o. The bidder have to obtain Contractors Comprehensive All Risk policy (CAR Policy) from Insurance Company of repute, within one month of start of work, for entire period of work i/c extended period, if any. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

p. **Water Use during Construction:** Contractor should spray curing water on concrete structure and shall not allow free flow of water or else use curing compound/plastic film/hessian cloth. Contractor shall make his own arrangement of water for construction purpose as well as drinking water for worker and staff. Concrete structures should be kept covered with plastic film/hessian cloth/ thick cloth/gunny bags and water should be sprayed on them. Contractor shall do water ponding on all slabs using cement and sand mortar bund i/c ponding of sunken slabs also. No payment on account of using curing compound/ plastic film/ water/ hessian cloth/ thick cloth/gunny bags etc. shall be made.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.8 MISCELLANEOUS TERMS & CONDITIONS

1 Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same. **Payment for centering/shuttering for heights greater than 3.5 m shall be made as per item nomenclature, conditions and clauses of contract.**

2 The contractor (s) shall inspect the site of work before tendering and acquaint himself with the site conditions and no claim on this account shall be entertained by the department.

The contractor (s) shall get himself acquainted with nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction.

3. The contractor (s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters of site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.

4. The tenderer shall see the approaches to the site. In case any approach from main road is required by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost. No payment shall be made on this account.

5. The contractor (s) shall give to the Municipality, Police and other authorities all necessary notices etc. that may be required by law and obtain all requisite Licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain light and other illumination on for cautioning the public at night.

6. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night speed limit boards red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work.

7. The contractor shall provide at his own cost suitable weighing surveying and levelling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.

8. Contractor shall provide permanent bench marks and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings

9. On completion of work, the contractor shall submit at his own cost four prints of “as built” drawings to the Engineer-in-Charge within 30 days of completion of work. These drawings shall have the following information:

   a) Run of all piping and their diameters including soil waste pipes & vertical stacks.

   b) Ground and invert levels of all drainage pipes together with locations of all manholes and connections upto out fall.

   c) Run of all water supply lines with diameters, location of control valves, access panels etc.

   If above said drawings are not submitted by the contractor within the above specified time, then final bill will not be paid and Security Deposit shall not be released.

10. The contractor shall submit for the approval of Engineer-in-Charge names of specialized agencies of repute along with their technical capacity proposed to be engaged by him for executing

specialized works, who must have executed satisfactorily works of value as specified in mandatory conditions.

11. The works shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available thereof is complete and unambiguous. The discrepancy, if any shall be brought to the notice of the Engineer-in-Charge before execution of the work. The contractor alone shall be responsible for any loss or damage executing by the commencement of work on the basis of any erroneous and or incomplete information.

12. The contractor shall take all precautions to avoid accidents by, exhibiting caution boards day and night, speed limit boards, red flags, red light and providing necessary barriers and other measures required from time to time. The contractor shall be responsible for all damages and accidents due to negligence on his part.

13. Other agencies will also simultaneously execute and install the works of electrification, air conditioning, lifts, fire-fighting etc. for this work and the contractor shall provide necessary facilities for the same. The contractor shall leave such recesses, holes openings etc. as may be required for the electric, air-conditioning and other related works (for which inserts, sleeves, brackets, conduits base pinion, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work & brick work, if required and nothing extra shall be payable on this account.

14. All materials obtained from Govt. stores or otherwise shall be get checked by the Engineer-in-Charge or his any authorized supervisor staff on receipt of the same at site before use.

15. The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.

16. All Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-Charge.

17. **PROGRAMME CHART**

i) The contractor shall prepare an integrated programme chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfilment of the programme within the stipulated period or earlier as indicated in the mile stones under clause 5 of the contract and submit the same for approval to the Engineer-in-Charge within ten days of the award of the contract.

ii) The programmes chart should include the following: -

a) Descriptive note explaining sequence of various activities.

b) Net work (PERT/CPM/BAR CHART)

c) Programme for procurement of materials by the contractor

d) Programme of procurement of machinery/equipments having adequate capacity commensurate with the quantum of work to be done within the stipulated period by the contractor.

18. If appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved programme referred above the contractor shall produce a revised programme showing

the **modifications to the approved programme to ensure completion of the work within the stipulated** time for completion .

19. The submission for approval by the Engineer-in-Charge of such programme or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

20. If the work is carried out in more than one shift or during night no claim on this accounts shall be entertained.

21. Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.

22. The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.

23. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proformaissued by the Engineer-in-Charge of work and which shall be duly signed by the contractor or his authorised representative.

24. The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However cost of photographs, slides, audio/videography etc shall be born by the department.

25. The contractor shall be fully responsible for the safe custody of materials brought by him, issued to him even though the materials are under double lock key system.

26. The rate of items of flooring is inclusive of providing sunk flooring at bath rooms kitchen etc. and nothing extra on this accounts is admissible.

27. No payment shall be made to the contractor for any damage caused by rain, snowfall, floods, earthquake or any other natural causes whatsoever during execution of work. The damages of the work will be made good by the contractor at his own cost and no claim on this account shall be entertained.

28. For construction works which are likely to generate malba/rubbish to the tune of more than a tempo/truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at their own cost to the notified/specified dumping ground and under no circumstances these shall be stacked/dumped, even temporarily outside the construction premises.

29. The Plinth Level of Building is to be kept as per Architectural drawings. All the items of works such as PCC, RCC, Brickwork and shuttering etc. in foundation upto this plinth level with be measured and paid as the work done upto plinth level. Nothing extra due to higher plinth will be paid and contractors rates quoted for all these items shall, therefore, the deemed to cater for extra height of plinth.

30. Except for the items, for which particular specifications are given or where it is specifically mentioned otherwise in the description of items in the schedule of quantities the work shall generally be carried out in accordance with the “CPWD specifications 2019 Vol. 1 and Vol. 2 (with upto date corrections slips). (Hereinafter to be referred to as CPWD specifications) and instructions of Engineer-in-Charge. Wherever CPWD specifications are silent the latest IS codes/specification shall be followed.

31. The proposed building is a prestigious project and quality of work is paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like stone masonry & stone cladding works,

stone flooring, structural glazing, PVDF coating aluminium composite panel and other specialized flooring work, Wood work will specially require engagement of skilled workers having experience particularly in execution of such items. The contractor shall have to engage well-experienced skilled labor and deploy modern tools, plants, and other equipment to execute the work.

32. The contractor (s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters of site. However, no claim on the alleged inadequacy or incorrectness of the soil data shall be entertained.

33. The tenderer shall see the approaches to the site. In case any approach from main road is required by the contractor, the same shall be made good, improved and maintained by the contractor at his own cost. No payment shall be made on this account.

34. The contractor (s) shall give to the Municipality, Police and other authorities all necessary notices etc. that may be required by law and obtain all requisite Licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain light and other illumination on for cautioning the public at night.

35. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night speed limit boards red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work.

36. Contractor shall provide permanent bench marks and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.

37. The contractor shall make his own arrangement for obtaining electric connection(s) if required and make necessary payments directly to the department concerned.

38. Other agencies doing works related with this project may also simultaneously execute their works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work, pipes cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.

39. Some restrictions may be imposed by the security staff etc. on the working and for movement of labour, materials etc. The contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on account of the same.

40. The contractor shall fully comply with all legal orders and directions of the Public or local authorities or municipality and adhere by their rules and regulations and pay all fees and charges for which he may be liable in this regard. Nothing extra shall be paid/reimbursed for the same.

41. The building work shall be carried out in the manner complying in all respects with the requirements of the relevant bylaws and regulations of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-charge and nothing extra shall be paid on this account.

42. The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.

43. If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.

44. It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

45. The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.

46. The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where however phased delivery of work is contemplated these provisions shall apply separately to each phase.

47. The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.

48. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.

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

50. The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth or building materials etc. shall be stacked/collected in areas where other buildings, roads, services, compound walls etc. are to be constructed.

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

53. The contractor shall submit for the approval of Engineer-in-Charge names of specialized agencies of repute along with their technical capacity proposed to be engaged by him, who must have executed satisfactorily works of value as specified in mandatory conditions.

i) The works shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available there of is complete and unambiguous. The discrepancy, if any shall be brought to the notice of the Engineer-in-Charge before execution of the work. The contractor alone shall be responsible for any loss or damage executing by the commencement of work on the basis of any erroneous and or incomplete information.

ii) The contractor shall take all precautions to avoid accidents by, exhibiting caution boards day and night, speed limit boards, red flags, red light and providing necessary barriers and other measures required from time to time. The contractor shall be responsible for all damages and accidents due to negligence on his part.

iii) Other agencies will also simultaneously execute and install the works of electrification, air conditioning, lifts, fire-fighting etc. for this work and the contractor shall provide necessary facilities for the same. The contractor shall leave such recesses, holes openings etc. as may be required for the electric, air-conditioning and other related works (for which inserts, sleeves, brackets, conduits base pinion, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work & brick work, if required and nothing extra shall be payable on this account.

iv) The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that

of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.

v) All Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-Charge.

54 Samples of all materials and fittings to be used in the work in respect of brand manufacturer and quality shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS mark for the particular material. Any material/fitting whose sample has not been approved in advance and any other unapproved material brought by the contractor shall be immediately removed as soon as directed.

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

55 On completion of work, the contractor shall submit at his own cost four prints of "as built" architectural & services (both civil & electrical) drawings to the Engineer-in-Charge within 30 days of completion of work. These drawings shall have the following information:

56 **Condition regarding secured advance: -**

Secured advance shall be admissible only on those bonafide materials which are likely to be used in the work in a period not exceeding **5 (Five)** months from the date of secured advance payment. If agency fails to use the material (in respect of which secured advance have been paid) in the work in this specified period of six months, the said component of secured advance shall be recovered from next running account bill paid to the agency. Secured advance on the same material shall not be paid again.

57. The work in general shall be executed as per the description of the item, specifications and conditions attached and CPWD specifications 2019, Vol I & II with up-to-date correction slips and instructions of Engineer-in-Charge.

58. Samples of all materials and fittings to be used in the work in respect of brand manufacturer and quality shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS mark for the particular material. Any material/fitting whose sample has not been approved in advance and any other unapproved material brought by the contractor shall be immediately removed as soon as directed.

59. The rates for all items of work shall unless clearly specialised otherwise include cost of all labour, material tools and plants and other inputs involved in the execution of the item.

60. The contractor (s) shall quote all inclusive rates against the items in the schedule of quantities and nothing extra shall be payable for any of the conditions and specifications mentioned. In the tender documents unless specifically specified otherwise.

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

62. The rate for all items in which the use of cement is involved is inclusive of charges for curing.

63. The foundation trenches shall be kept free from water while works below ground level are in progress.

64. The work shall be executed and measured as per metric dimensions given in the schedule of quantities, drawings etc. (FPS units wherever indicated are for guidelines only).

65. Payment for items of “RCC work”, brick work and concrete work above different floor shall be made at the rates provided for those items. For operation of these rates, the floor level shall be considered as top of the main structural slab in that floor viz. top of RCC slab in main room and not top of any sunk or depressed floor for lavatory slabs.

66. The rate of items of flooring is inclusive of providing sunk flooring in Bath-rooms, kitchen, etc. and nothing extra on this account shall be payable.

67. The sanitary pipes and plumbing pipes wherever necessary shall be fixed to RCC columns, beams etc. with sufficient number of rawl plugs and nothing extra shall be paid for this.

68. The contractor shall be responsible of the protection of the sanitary and water supply fittings and other fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.

69. The contractor shall make his own arrangement for obtaining electric connection(s) if required and make necessary payments directly to the department concerned.

70. Other agencies doing works related with this project may also simultaneously execute their works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work, pipes cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.

71. Some restrictions may be imposed by the security staff etc. on the working and for movement of labour, materials etc. The contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on account of the same.

72. The contractor shall fully comply with all legal orders and directions of the Public or local authorities or municipality and abide by their rules and regulations and pay all fees and charges for which he may be liable in this regard. Nothing extra shall be paid/reimbursed for the same.

73. The building work shall be carried out in the manner complying in all respects with the requirements of the relevant bye-laws and regulations of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-charge and nothing extra shall be paid on this account.

74. The work of water supply, internal sanitary installations and drainage etc. shall be carried out as per the bye-laws of the Municipal Corporation or any other local body.

75. All water tanks, taps, sanitary, water supply and drainage pipes fittings and accessories etc. shall conform to the bye-laws and specifications of the Municipal Body/Corporation where CPWD specifications are not available.

76. The contractor shall engage licensed plumbers for the work and the materials (fixtures/fittings) tested by the local Municipal Body/Corporation wherever required at his own cost. Nothing extra shall be paid/reimbursed for the same.

77. The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.

78. If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.

79. The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities

appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.

80. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.

Samples of materials required for testing shall be provided free of cost by the contractor. All expenditure to be incurred for testing of samples of all materials e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne bythe contractor. The samples of all materials shall be got tested from the Government Enginerring Colleges/Institutes or NABL approved laboratories as per direction of Engineer-incharge.

81. 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.

82. For the purpose of recording measurements and preparing running account bills, the abbreviated nomenclature indicated in the publications Abbreviated Nomenclature of Items of DSR shall be accepted. The abbreviated nomenclature shall be taken to cover all the materials and operations as per the complete nomenclature of the relevant items in the agreement and relevant specifications.

In case of items for which abbreviated nomenclature is not available in the aforesaid publication and also in case of extra and substituted items for which abbreviated nomenclature are not provided for in the agreement, full nomenclature of item shall be reproduced in the measurement books and bill forms for running account bills.

For the final bill, however, full nomenclature of all the items shall be adopted in preparing abstract in the measurement books and in the bill forms.

83. The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer in charge. Nothing extra shall be paid on this account.

84. No payment will be made to the contractor for damage caused by rains, or other natural calamities during the execution of the works and no such financial claim on this account will be entertained.

85. The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth or building materials etc. shall be stacked/collected in areas where other buildings, roads, services, compound walls etc. are to be constructed.

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

87. It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.

88. In case the supply of timber/steel frames/shutters for doors, windows etc. is made by some other agency, the contractor shall make necessary arrangements for their safe custody on the direction of the Engineer-in-charge till the same are fixed in position by him & nothing extra shall be paid on this account.

89. The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where however phased delivery of work is contemplated these provisions shall apply separately to each phase.

90. The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

91. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers. Decision of Engineer in charge in this regard shall be final and binding.

92. It must be ensure that all materials to be used in work bear BIS certification mark. In cases where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification the material can be used subject to the condition that it should confirm to CPWD specification and relevant BIS codes. In such case written approval of the Technical Sanctioning Authority may be obtained before use of such material in the work.

93. The terms machine batched, machine mixed and machine vibrated concrete used elsewhere in agreement shall mean the concrete produced in concrete batching and mixing plant and if necessary transported by transit concrete mixers, placed in position by the concrete pumps, tower crane and vibrated by surface vibrator /needle vibrator / plate vibrator, as the case may be to achieve required strength and durability.

94. Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer in charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer in charge. Any material procured without prior approval of Engineer in charge in writing is liable to be rejected. Engineer in charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Non standard materials shall not be accepted.

95. Doors and frames shall be procured from specialist firms and name of such agencies shall be got approved from the Engineer in charge well in advance.

96. The construction joints shall the provided in predetermined locations only as decided by Engineer in charge. The cost of shuttering for these construction joints shall be included in item of Concrete work / RCC work and nothing extra shall be payable on this account to the contractor.

97. The gradation of fine sand to be used in plaster work shall be strictly as per CPWD Specifications 2019, conforming to IS 1542-1977. The plastered surface shall be fairly smooth without any undulation of any kind for applying paint/white wash.

98. No chase cutting/dismantling of plaster/RCC/CC shall be allowed, so contractor has to execute the electrical work accordingly.

99. The contractor shall invariably prepare the samples of finishing items i.e. flooring of different types, external & internal finishing i/c colour scheme of paint, tiles in dado, flooring in platforms & staircase, water supply & sanitary fittings and any other item as per direction of Engineer-in-charge. The contractor shall proceed with further finishing items only after getting the samples of these items approved in writing from Engineer-in-charge. In case of construction of residential quarters, one sample quarter complete in all shape for each category, shall be prepared by the contractor and got approved from Engineer-in-charge in writing. The contractor shall be allowed to proceed with further quarters only after getting the sample quarters approved in writing from Engineer-in-charge No extra claim whatsoever beyond the payments due at agreement rates will be entertained from the contractor on this account.

100. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case, he or his authorized representative is not present or does not associate him, the results or such tests and consequences thereon shall be binding on the contractor.

101. The contractor shall get the water tested with regard to its suitability of use in the works and get written approval from the Engineer in charge before he proceeds with the use of same of execution of works. If the tube-well water is not suitable, the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in latest CPWD specifications/BIS code.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.9 ADDITIONAL CONDITIONS FOR CEMENT

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

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

2. The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer-in-Charge.

   The cement godown of the capacity to store a minimum of **1000** bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made.

3. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.

4. **Samples of materials required for testing shall be provided free of cost by the contractor. All expenditure to be incurred for testing of samples of all materials e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne bythe contractor. The samples of all materials shall be got tested from the Government Enginerring Colleges/Institutes or NABL approved laboratories as per direction of Engineer-incharge.**

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

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

7 The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do show within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.

8 The contractor may use OPC in place of PPC only after written permission of Engineer-in-Charge. In such case, no extra payment shall be made in any form to the contractor by the Department.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.10 ADDITIONAL CONDITIONS FOR STEEL

1. The contractor shall procure **TMT bars** of **Fe 500D** grade from primary steel producers such as **SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd and JSW Steel Ltd or any other producer as approved by CPWD who are using iron ore as the basic raw material/input and having crude steel capacity of 2.0 million tonnes per annum and above.**

1.1 TMT bars shall meet the provisions of IS 1786: 2008 pertaining to **Fe 500/550 D** grade of steel.

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

3. Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in the relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined under para 1.1 and 1.2 above, the same shall stand rejected and it shall be removed from the site of work by the contractor at his cost within a week time of written orders from the Engineer-in-charge to do so.

4. The TMT bars shall be brought to the site in bulk supply of 20 tonnes or more or as directed by the Engineer-in-charge.

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

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

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

7 Samples of materials required for testing shall be provided free of cost by the contractor. All expenditure to be incurred for testing of samples of all materials e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The samples of all materials shall be got tested from the Government Enginerring Colleges/Institutes or NABL approved laboratories as per direction of Engineer-incharge.

8 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 per procedure prescribed in **clause 38**of the contract and shall be governed by the 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 need to be made.

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

10 Steel bars brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.

11 In case the contractor brings surplus quantity of steel the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-Charge.

12 Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameters, as actually (not more than as specified in the drawing) used in the work, nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.

13 The standard sectional weights referred to as in Table 5.4 under para 5.3.4 in CPWD specifications for works 2019 Vol. 1 will be considered for conversion of length of various sizes of MS bars and TMT bars into standard weight.

14 Records of actual sectional weight shall also be kept dia-wise & lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as derived actual weight.

15 If the derived weight as in para 14 above is lesser than the standard weight as in para 13 above, the derived actual weight shall be taken for payment.

If the derived actual weight is found more then the standard weight then the standard weight as worked out in para 13 above shall be taken for payment. In such case nothing extra shall be paid for the difference between the derived actual weight and the standard weight.

16 Mixing of different type of steel/different grades of steel shall not be allowed in the same structural members as main reinforcement to satisfy clause 26.1 of IS:456.

17 Tolerances on Nominal Mass (individual sample) shall be as under:-

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

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.11 MAINTENANCE OF MATERIAL AT SITE (MAS) REGISTERS

Site Order Book shall be kept at site. All test registers, and MAS registers issued by the Engineer-in-Charge shall be maintained by the contractor or his authorized engineer, which will be reviewed by the officers of CPWD at regular intervals.

1.0 Maintenance of Register of Tests –

i) All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.
ii) All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by JE/AE and out of this at least 50% samples shall be taken in presence of 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 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 100% witnessed by JE/AE. At least 10% of the tests are to be witnessed by the Executive Engineer / Executive Engineer and Senior Manager.
iv) Minimum 10% test should be conducted in outside approved lab as mentioned in NIT and direction of Engineer-in-Charge.
v) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by JE/AE/AEE/EE.
vi) Contractor shall be responsible for safe custody of all the test registers.
vii) Submission of statement of all test conducted at site/lab, material at Site Register along with each alternate Running Account Bill and Final Bill shall be mandatory.

2.0 Maintenance of Material at Site (MAS) Register –

i) All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. Authenticated copies of bills/vouchers of materials which has to be entered in the MAS register are to be submitted by the contractor to CPWD before making payments.
ii) Each of the entry of receipt of material at site shall be 100% test checked by JE or by AE/AEE if there is no JE.
iii) Each MAS Register shall be checked at least once a week by JE and periodically reviewed by AE/AEE & EE. If there is no JE then MAS registers will be checked by AE.
iv) It will be deemed that work so measured, checked and paid is of the required quality and standard, both in respect of ingredients as well as the intended functions it is supposed to perform. In other words, the work would not only meet the required specifications but also the workmanship as per sound engineering practices.
v) Copies of bills: Agency will show original bills and provide authenticated copies of itemize bills of materials which has to be entered in the MAS Register viz steel, cement, bitumen, paint, water proofing or any other item suggested by the Engineer-in-Charge.
vi) Registers for the materials to be issued by the department shall be maintained as required by the Engineer-in-charge and these shall be signed by the contractor or his authorized agent and representative of Engineer-in-charge on each day of transactions.
vii) Cement bags shall be stored in separate godowns to be constructed by the contractor at his own cost as per sketch (which is only indicative and actual size will depend on the site requirements) given in CPWD specifications with weather proof roofs and walls. Each godown shall be provided with a single shutter door with two locks. The key of one lock shall remain with Engineer-in-

charge or his authorized representative and that of the other lock with the authorized agent of the contractor at the site of work so that the cement is issued from the godown according to the daily requirements with the knowledge of both parties and proper account for the same is maintained in the standard proforma.

viii) Cement Register shall be reviewed by EE at specified frequency.

PROFORMA FOR THE CEMENT REGISTER

i) PARTICULARS OF RECEIPT

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

ii) PARTICULARS OF ISSUE

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

iii) Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.

iv) Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

3.0 Documentation of Hindrances

The contractor has to first register himself through a registration form, available on CPWD website under Contractors Login tab and obtain his login and password online, from there. Thereafter, he can register any hindrance in work on this online module of CPWD website. Decision of Executive engineer on the hindrance registered online by contractor, shall be visible to the contractor under Decision of Engineer-in-charge.

4.0 **MATERIALS & FIXTURES FOR THE PROJECT**

a. Unless otherwise stated cement used shall be PPC (Portland Puzzolana Cement). The PPC must meet the requirements of IS 1489 (Part I) as regards to fly ash content in cement.
b. Contractor will produce, wherever feasible certificate regarding distance of the source of the relevant material, for all fly ash based products the source should be as near to site as possible.
c. The contractor has to comply as per MoEF issued notification 8.0.763I dated 14thSept.1999 & latest notification of Jan. 2016 containing directive for greater fly ash utilization.
d. The contractor shall ensure that all paints, polishes, adhesives and sealants used both internally and externally, on any surface, shall be Low VOC products. The contractor shall get prior approval from the Engineer-in-Charge before the application of any such material.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.0 **Preferred Make & Approval of Materials:**

a. Contractor shall adopt materials in work as per preferred make of materials annexed in this contract document. Contractor shall submit samples of materials he proposes to use for this work for approval of engineer-in-charge. The approved samples shall be preserved at work site in safe custody till completion of whole work. In case any sample submitted by contractor is not approved by Engineer-in- charge, contractor shall arrange and submit alternate samples for approval of engineer-in-charge. The Contractor should also consider the availability of spares parts/components for maintenance purposes while proposing any brand/manufacturer.

b. Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer-in-charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer-in-charge. Any material procured without prior approval of Engineer-in-charge in writing is liable to be rejected. Engineer-in-charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Nonstandard materials shall not be accepted.

c. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers and the material shall conform to the make as specified in this contract agreement. However for the items not appearing in the list, preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available or where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification, the material can be used subject to the condition that in such case written approval of Engineer-in-charge be obtained before use of such material in the work.

d. All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD will not be used.

e. In the Bill of quantities/Detailed Schedule of Items (DSI)/ nomenclature of some items, the make(s) of product / material has been mentioned. The contractor is required to provide the same make(s) as mentioned in the item. If the same are not available in the market or the suppliers adopts monopolistic practice then the approval of other equivalent brand / make, matching with BOQ/DSI items and specification, can be taken from Engineer-in-charge. The contractor will submit such a case at least three months before the material is required at site. If the rate of other equivalent brand / make is less than the brand / make mentioned in the BOQ/DSI item, than necessary cost adjustment will be made for difference in rates.

f. During actual execution of item(s) at site, due to change/updation of product specification(s) by manufacturers, there may be minor variation in manufacturer's specifications viz-a-viz specification mentioned in item(s) in Schedule of items (civil, furniture as well as electrical work). Such variations shall be allowed with prior permission of Engineer-in-charge for execution of work at site and nothing extra shall be payable to the contractor on this account. The decision of Engineer-in-charge in this matter shall be final and binding on contractor.

g. For items / materials not appearing in the list of preferred make of materials, decision of Engineer-in-charge shall be final and binding. Sanitary and water supply items shall be as per make specified in BOQ/DSI item(s) and if no make is mentioned in BOQ/DSI item, same shall as per "Normal Range" in preferred make list of materials.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

h. Sample of building materials, fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge before use in the work. The quality of samples brought by the Contractor shall be judged by standards laid down in the tendered drawings, bid document and relevant CPWD/ BIS specifications. In case, samples provided by Contractor are not approved, Contractor shall submit new samples of the materials and other articles for approval of Engineer-in-charge. Decision of Engineer-in-charge w.r.t. approval of samples of materials shall be final and binding on the contractor. All materials and articles brought by the Contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.

i. BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the Contractor shall, if required, by the Engineer-in- Charge, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material procured by the Contractor for incorporation in the work satisfies the provisions of contract agreement, specifications / BIS codes relevant to the material and / or the work done.

6.0 **Make in India Policy**

The main contractor as well as associate contractor of each discipline shall comply to Government of India Public Procurement (Preference to Make in India), Order-2017 amended up to last date of submission of bid.

5.12 PARTICULAR SPECIFICATION FOR CIVIL WORKS

1.0 EARTH WORK: -

1.1 Earth work shall be executed as per CPWD specifications 2019, Volume-I with upto date correction slips. In addition to that following specifications shall also be followed:

1.2 EARTH WORK FOR MAJOR WORKS

1.2.1 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. Measurement of plan area of excavation for payment shall be permitted only.

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

1.2.3 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 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. The contractor shall make necessary provision of pumping, dredging 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. Sub-soil water table at work site is reported to be about approx. 6.5 m. below the general ground level as observed in the month of April. The water level is likely to rise up to 1 to 2 m. during rainy season. In order to avoid possibility of basement floor of main building being getting uplifted/damaged due to water pressure, the contractor shall lower the ground water table below the proposed foundation level by boring tube wells all around the proposed building using well point sinking method or any suitable method as approved by Engineer-in-charge. Sub soil water table shall be maintained at least 50 cm. below the P.C.C. level during laying of P.C.C. water proofing treatment, laying of basement raft and beams including filling of earth/sand under the basement floor. The water table shall not be allowed to rise above base of raft level until completion of outer retaining walls including water proofing of vertical surface of walls and back filling along the walls upto ground level and until the structure attains such height to counter balance the uplift pressure. However, the contractor should inspect the site and make his own assessment about sub-soil water level likely to be encountered at the time of execution and quote his rates accordingly. Rate of all items are inclusive of pumping out or bailing out water, if required. Nothing extra on this account whatsoever shall be paid to him. The sequence of construction shall be got approved by the Engineer-in-charge.

1.2.4 The contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades including signs, markings, flags, lights and flagman, as necessary at either end of the excavation/embankment and at such intermediate

points as directed by the Engineer-in-charge for the proper identification of construction area. He shall be responsible for all damages and accidents caused due to negligence on his part.

2.0 **RCC WORK**

The work shall be done as per CPWD specifications.

2.1 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in **clause 38)** the cost of quantity of cement so less used shall be recovered from the contractor at the rate as specified in schedule 'F'. Decision of the Engineer-in-Charge in regard to the quantity of cement which should have been actually used as per the schedule and recovery at the rate specified shall be final and binding on the contractor.

2.2 For non-scheduled items, the decision of the Superintending Engineer regarding theoretical quantity of the cement which should have been actually used shall be final and binding on the contractor.

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

2.4 In case the contractor brings surplus quantity of cement the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-Charge.

2.5 Cement register for the cement shall be maintained at site.

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

PROFORMA FOR THE CEMENT REGISTER

PARTICULARS OF RECEIPT

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

PARTICULARS OF ISSUE

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

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

2.6 **DESIGN MIX CONCRETE**:

The contractor shall be required to submit **design mix of specified grade of concrete with and/or without using plasticizers** separately according to execution methodology and requirements. The decision of the engineer-in-charge to specify the design mix of concrete based on above shall be final and binding.

2.6.1 Coarse aggregate: As per CPWD Specifications

2.6.2 Fine Aggregate: As per CPWD Specifications.

2.6.3 Water: It shall conform to requirements laid down in IS: 456: 2000 and CPWD specifications.

2.6.4 Cement: Cement arranged by the contractor will be PPC (in bags) conforming to IS: 1489-Part-I. If for any reasons, cement other than that specified in this para for example OPC of grade 43 or higher grade is brought to site by contractor, the issue, payments rate as well as the quantity to be used in the design mix concrete will remain unchanged.

2.6.5 Slump: Design slump should be clearly specified in the mix design.

2.6.6 Admixtures shall not be used without approval of Engineer-in-charge. Wherever required, admixtures of approved quality shall be mixed with concrete as specified. The admixtures shall conform to IS: 9103. The contractor shall not be paid anything extra for admixture required for achieving desired workability without any change in specified water cement ratio for RCC/CC work.

2.6.7 Grade of Concrete: The compressive strength of various grades of concrete shall to be given as below:

Sl No	Grade Designation	Compressive strength on 15cm cubes min 7 days (N/mm2)	Specified characteristic compressive strength at 28 days (N/mm2)	Minimum cement content (Kg per cum)	Maximum cement content (Kg per cum)	Maximum water cement ratio
(i)	M 25	As per Design	25	330	*As per CPWD specification / BIS Code*	0.50
(ii)	M 30	As per Design	30	350		0.45
(iii)	M 35	As per Design	35	370		0.45

Note

(i) In the designation of a concrete mix letter M refers to the mix and number to the specified characteristic compressive strength of 15 cm x 15 cm x 15 cm – cube 28 days expressed in N/mm2

(ii) The minimum/maximum cement content for design mix concrete shall be maintained as per the quantity mentioned above. In case the cement content in design mix is more than minimum cement content, the contractor shall bear the cost of extra cement **beyond plus 10% of minimum cement content**. Nothing extra for cement shall be paid on this account.

(iii) Design slump has to be constantly monitored and maintained during placing of concrete through slump tests carried out as per CPWD specification 2009 Vol. 1 for Mortar, Concrete and RCC works, and records maintained accordingly.

2.6.8 The concrete mix design/laboratory tests with and without admixture shall be got done by contractor at his own cost and will be carried out by the contractor through one of the following laboratory/Test houses:

(i) IITs

(ii) NITs

(iii) CBRI

(iv) Government Engineering Colleges/Institutes

(v) NCCBM Ballabhgarh

(vi) NITTTR

The various ingredients for mix design / laboratory tests shall be sent to the test houses through the Engineer-in-Charge and the samples of such aggregate & cement shall be preserved at site by the department

2.6.9 The contractor shall submit the mix design report from any of above approved laboratory for approval of Engineer-in-Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the mix design is approved by the Engineer-in-charge. In case of white portland cement and the likely use of admixtures in concrete with PPC/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.

2.6.10 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 whenever required and as directed by the Engineer-in-Charge.

2.6.11 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

2.7 APPROVAL OF DESIGN MIX

The mix design for a specified grade of concrete shall be done for a target mean compressive strength Tck=Fck+1.65 s.

Where Fck = Characteristic compressive strength of 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 below:

Grade of Concrete	For “Good” quality of control
M 25	4.00
M 30	5.00
M 35	5.00
M 40	5.00

Of the six specimen 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

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

2.9 The automatic concrete batching plant conforming to IS: 4925 should be of sufficient capacity and suitable to commensurate with the target mentioned in NIT with reference to quantity of concrete, mile stone and completion time of the work. It shall have the facilities of presetting the quantity to be weighed with automatic cutoff when the same is achieved. Concreting at places may have to be resorted to through concrete pump for which nothing extra shall be paid.

2.10 All other operations in concreting work like Mixing, Slump, Laying Placing of concrete, compaction curing etc. not mentioned in this particular specification for Design Mix of concrete shall be as per CPWD specification.

2.11 WORK STRENGTH TEST
TEST SPECIMEN

Work strength test shall be conducted in accordance with IS: 456 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.

TEST RESULTS OF SAMPLE

The test result of the sample shall be the average of the strength of three specimen. The individual variation shall not be more than 15 percent of the average. If more, the test results of the sample are invalid. 90% of the total test shall be done at the laboratory established at site by contractor and remaining 10% in the laboratory of CPWD or in any other laboratory as directed by the Engineer-in-Charge.

Lot size
The minimum frequency of sampling of concrete of each grade shall be according to 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 + one additional sample for additional 50 cubic metre or part thereof.

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

2.12 STANDARDS OF ACCEPTANCE- As per CPWD specifications/IS 456 Code

2.13 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 contractors. However, the Engineer-in-Charge may order for additional test (like cutting cores, ultrasonic pulse velocity test, load tests on structure or 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. However, for payment the basis of rate payable to contractor shall be governed by the 28 days cube test results.

2.14 Only Aluminium or composite centering/shuttering(as per adoption of one of option of cast-in-situ new and emerging technologies) and scaffolding material unless & otherwise specified shall be used for all RCC. 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 on approval by the Engineer-in-Charge.

2.15 Necessary arrangements shall be made for field tests and all required equipment's shall be arrange by establishing field lab by the Agency for mandatory tests of the materials as specified in CPWD specifications or as per direction of Engineer-in-Charge. No extra payment shall be paid on this account.

3.0 BRICK WORK: -

3.1 The brickwork shall be carried out with good quality well burnt FPS bricks/Fly ash bricks of class designation 50 as per CPWD Specifications. Exposed brick work for ground level to plinth level shall be executed with selected FPS bricks/Fly ash of class designation 50.

3.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.

3.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.

3.4 M.S. Strip/ Bar provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

4.0 STEEL WORK

4.1 The rate of T- angle iron frame shall include the following.

(a) M.S. sill/tie of 10mm dia bar welded to T-iron frames to keep the frames vertical in correct position. The sill / tie shall be embedded in floor concrete. No tie is necessary for window frames.

(b) Each T – iron frame for doors shall have 4 Nos. M.S. lugs 15x3mm, 10 cms long welded to each vertical member of the frame.

(c) M.S. flat 6 x 25mm, 100mm long having threaded holes (No. of flats shall correspond to the no. of butt hinges to be fixed to door / window shutters) shall be welded at appropriate places at the back of the T-iron frames for fixing the required butt hinges to the frame with machine screws.

4.2 All welded structural steel work shall be tested for quality of weld as laid down in IS 822-1970 before actual erection if required.

5.0 FLOORING

5.1 All work in general shall be carried out as per CPWD Specifications (Volume 1) 2019 with up-to-date correction slips.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.2 Whenever flooring is to be done in patterns of tiles and stones, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring. Nothing extra shall be payable on this account.

5.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if any, shall be accounted for any extra payment.

5.4 Samples of flooring stones/ Tile (Kota/ Marble/ Granite/ Ceramic tiles/ Vitrified tiles etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.

5.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location.

5.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided which shall not be less than 900mm long except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase shall not be less than 1500mm long except to adjust the closing pieces. Nothing extra shall be paid on these accounts

5.7 Vitrified Tile Flooring

The tiles shall be of approved make and shall generally conform to Table 12 of IS15622.
The full body Vitrified tiles of specified sizes shall be used & sample of tiles shall be got approved from the Engineer-in-Charge. All tiles shall be rectified and double charge minimum.
The Mandatory tests for vitrified tiles shall be got done as per CPWD Specifications (volume-1)/relevant BIS Code.

5.8 Ceramic Tiles Flooring

The tiles shall be procured from the approved manufactures of the specified shade &colour.
The floor & wall tiles shall be conforming to IS:15622 for floor and wall tiles respectively.
Tiles for dado shall be 300mm x 450mm (minimum size) or more (GROUP-III) as approved.
Tiles for flooring shall be 300mm x 300mm (minimum size) or more (GROUP-V) as approved.

Test shall be conducted to satisfy the quality of material as per CPWD Specifications

5.9 The rate of items of flooring is inclusive of providing sunken flooring in bathrooms, kitchen etc. and nothing extra on this account is admissible. The proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard, etc. as per the directions of Engineer-in-charge.

6.0 STAINLESS STEEL RAILING/HANDRAILS:

6.1 GENERAL: The contractor shall apply all materials, labour, tools, ladders, scaffolding and other equipment necessary for the completion and protection of all stainless-steel work.

6.2 MATERIAL: All stainless-steel pipes and plates shall conform to AISI 304 grade and the relevant clauses associated with this grade of steel to be followed.

6.3 SURFACE FINISH: Surface finish of all the stainless-steel materials will be in 240 grit satin finish / matt finish.

6.4 ACCESSORIES: The S.S. railing to be fixed to staircase and all other location shall be modular and of design and make as approval by the Engineer-in-charge and as per list of approved makes. Fixing will be done by stainless steel expansion bolts of approved size and make as per Engineer-in-charge and welding if required to be done at any isolated place, to be done by using organ welding rods and the surface being duly finished and cleaned by K2 passivation, which is nitric acid plus fluoric acid solution treatment by which the chances of corrosion will be eliminated and any burn out makes on the metal will also be eliminated.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.5 COATING MASS: All stainless-steel material will have to be coated by a solution of Inox to avoid finger in prints and avoidance of settlement of environment / atmospheric dust.

7.0 FALSE CEILING WORKS:

7.1 The luminaries, air grills / diffusers, signage's etc. shall be as far as possible independently supported to avoid any over loading of the ceiling system which may result in excessive deflection or twisting of grids. **Any strengthening of grid system by providing additional hangers, fasteners, runners, cross tees etc. or providing additional bracing may be carried out as required for any specific locations or for specific purpose for which nothing extra shall be payable**. Various false ceiling systems shall include cost of all inputs of labour, materials, wastage if any, T&P, scaffolding, staging or any other temporary enabling structure / services etc. and all other incidental charges including making necessary cut outs for A.C diffusers, Light fittings, grills, Fire detection, alarm, sprinklers devices and fittings etc. No deduction in the area shall be made for openings nor anything extra shall be payable for making the openings. Also **nothing extra shall be payable on account of any wastage in materials**. Also nothing extra shall be payable on account of any strengthening of the supporting suspension system for the false ceiling, around the openings in the false ceiling by using additional hangers, fasteners, runners, cross tees, cross channels, etc.

8.0 WATER PROOFING TREATMENT

8.1 Work shall be executed as per CPWD Specifications, 2019 Vol I & II with upto date correction slips.

8.2 The contractor shall associate himself with the specialized firm, to be approved by the Engineer-in-charge in writing, for water proofing treatment for basement/lower ground floor, underground tank and on roofs.

8.3 The finished surface after water proofing treatment for roof slab shall have smooth slope with minimum gradient of 1 in 80.

8.4 Before commencement of treatment on roof surface, it shall be ensured that the outlet drain pipes/ spouts have been fixed and the spout opening have been eased and rounded off properly for easy flow of water.

8.5 The surface where the water proofing is to be done shall be thoroughly cleaned with wire brushes. All loose scales mortar splashes etc. shall be removed and dusted off. The surface shall be treated with neat cement slurry admixed with proprietary water proof compound to penetrate into crevices and fill up all the pores in the surface.

8.6 Curing of water proofing treatment shall be done for a minimum period of two weeks by flooding the water by making compartments etc.

9.0 FINISHING:

9.1 The work shall be carried out as per CPWD Specifications- 2019 Vol.-I & Vol. II with upto date correction slips.

9.2 All painting material shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for at least 30 days of work. The material shall be kept under the joint custody of contractor and representative of the Engineer-in-Charge. The empty contains shall not be removed from the site till the completion of the work without permission of the Engineer-in-Charge.

9.3 Test certificate from manufacturers for each Batch/Lot of paints, primer etc. shall be supplied by the contractor

10.0 SANITARY INSTALLATIONS, WATER SUPPLY AND DRAINAGE

10.1 The scope of work comprises supply, laying, installation, commissioning and testing of water supply, sewerage and drainage works including sanitary fixtures and fittings. These works shall

be executed as per the specifications of items attached and CPWD specifications- 2019 Vol. I & II with up-to-date correction slips up to the date of tender submission.

10.2 The work of water supply and sanitary installations shall be got executed by the agency as approved by Engineer-in-Charge.

(i) **The entire plumbing drawing and sanitary installation, sewerage, drainage drawing/ details shall be submitted by the contractor and got approved by the Engineer-in-Charge before the execution.**

(ii) **The entire responsibility for the quality and proper functioning of entire water supply, sanitary installations, sewerage and drainage works will be of contractor only.**

10.3 The work of water supply, internal sanitary installations and drainage etc. shall be carried out as per the bylaws of the Municipal Corporation or any other local body and the contractor shall produce necessary completion certificates from such authority after completion of work.

10.4 All water tanks, taps, sanitary, water supply and drainage pipes fittings and accessories etc. shall conform to the bylaws and specifications of the Municipal Body/Corporation where CPWD specifications are not available.

10.5 The contractor shall engage licensed plumbers for the work and the materials (fixtures/fittings) tested by the local Municipal Body/Corporation wherever required at his own cost. Nothing extra shall be paid/reimbursed for the same.

10.6 All sanitary wares and fittings shall conform to IS standards and to be procured from approved makes. The contractor shall submit minimum three samples of different makes of approved make list for all fittings and fixtures proposed to be used to the Engineer-in-charge for his approval and decision of engineer-in-charge regarding selection of any sample shall be final and binding. The approved samples shall remain with the Engineer-in-charge till the completion of the work.

10.7 All fixtures and accessories shall be fixed in accordance with a set pattern matching the tiles or interior finish as per architectural requirements. Wherever necessary the fittings centered to dimensions and pattern desired. The piping stack shall be installed at least 50mm using MS brackets, away from the finished / plastered shaft wall. The Item of Brackets and Clamps shall be paid for separately. From floor traps to outside CI fittings only single piece connection pipe shall be used.

10.8 All vertical Sanitary & water supply pipes shall be fixed to pre primered and pre painted M.S supporting frame with “U” shaped G.I bolts, threaded at both ends, as specified, with GI nuts, GI washers, GI cleats etc. as approved by the Engineer-in-charge. Supporting frame shall be fixed with approved anchor fasteners / plumbing nails as directed by the Engineer-in-charge. In all cases, pipelines shall be fixed, minimum 50 mm away from the finished wall face and shall not be fixed directly to the walls. The cost of providing and fixing GI supporting frame, “U” bolts, GI nuts, GI washer, anchor fastener etc., for clamping the pipes to the supporting frame shall be paid for separately under relevant item.

10.9 The rates shall include the cost of cutting chases, holes in walls, floors, RCC slabs etc. Wherever required and making good the same for which nothing extra shall be paid.The work in general shall be carried out as per CPWD specifications.

10.10 Rate includes all materials, labour and all the operations mentioned in the respective items unless and otherwise specifically mentioned.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

10.11 Horizontal C I Soil & waste pipes running along ceiling shall be fixed on structural adjustable clamps of approved design. Horizontal pipes shall be laid to uniform slope and the clamps adjusted to the proper levels so that the pipes fully rest on them and are properly secured

10.12 The CI pipe wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall paid for on this account.

10.13 All C I Soil & waste pipes should be provided by core cutting method, No Hubless centrifugally cast (spun) iron pipes & fittings will be hidden in roof or sunken except on ground floor.

10.14 The joints of pipe and fittings shall be of shielded coupling for Hubless centrifugally cast-iron pipe with SS 304 grade coupling with EPDM rubber gasket as per CPWD Specification and direction of Engineering-in-Charge

10.15 All the works shall be completely concealed either within shafts or chases or in fills and dropped ceilings, unless specifically shown in drawings or required otherwise.

10.16 All the works shall be adequate protected against corrosion, so that the whole work is free from damage throughout.

10.17 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.

10.18 The contractor shall give a satisfactory performance test of the entire installation (s) before the work is finally accepted and nothing extra shall be payable to the contractor on this account.

10.19 The contractor shall be responsible for all the protection of sanitary, water supply fittings and fixtures against pilferage and breakage during the period of installation until the completion / handing over of the work.

10.20 Before the work is handed over, the contractor shall clean all fixtures removing all plaster, stickers, rust stains and other foreign matter, leaving every part in acceptable condition and ready for use to the satisfaction of the Engineer-in-charge.

10.21 The contractor shall submit completion plans for water supply internal sanitary installations and building drainage work within thirty days of the date of completion. These plans are to be submitted on drawings prepared preferably through computers (1 original copy + 3 photocopies) on suitable scales to show the general arrangement and desired details.

10.22 Single lever Quarter turn CP Brass basin mixer shall be provided.

10.23 Quarter turn (lever type) CP Brass wall mixer, Sink mixer, bib cock, angle valve, pillar cock shall be provided.

10.24 INSPECTION AND TESTING

Inspection and testing of water supply sewerage and drainage installations shall be carried out as per CPWD Specification & National Building Code 2016 with up to date amendments.

i) All rates are inclusive of pre testing and on site testing of the installations, materials and commissioning.

ii) **Cleaning and Disinfection of Pipelines: -**

On completion of hydraulic tests and before a pipe is disinfected, it shall be proved to be free from obstruction, debris and sediment by scouring or by any other process which the Engineer-in-charge may prescribe. Upon satisfactory completion of testing and cleaning, the pipelines

shall be disinfected as order. Chlorine solution shall be applied at the charging point as the pipeline is being filed and dosing shall be continued until the pipeline is full and at least 50 parts of chlorine per million parts of water have been made available and distributed evenly. If ordinary bleaching power is used, proportions will 150 gms of power to 1000 litre of water. If a proprietary brand is used, the proportion shall be as specified by the manufacturer. The treated water shall be left in pipeline for a period as directed but not exceeding 24 hours chlorine residual tests shall be taken at various points along the pipeline. The disinfection process shall be repeated until the sample of water taken from the pipeline are declared fit for human consumption by a recognized laboratory.

11.0 SPECIFICATIONS FOR ALUMINIUM DOOR, WINDOW, VENTILATOR WORKS:

11.1 General:

19.1.1Work shall be carried out as per CPWD Specifications- 2019Vol. I &Vol.II with upto date correction slips.

19.1.2 Aluminium Doors, Windows &Ventilators shall be manufactured through approved fabricator in a workshop. The fabricator for the Aluminium work shall be got approved from the Engineer-in-charge, well before actual commencement of the item of work.

19.1.3 The drawings and specifications cover the major requirement only. The supplying of additional fastenings, accessory features and other items not mentioned specifically herein, but which are necessary to make a complete installation shall be a part of this contract.

19.1.4 Aluminium doors, windows etc. shall be of sizes, section details as shown on the drawings. The details shown on the drawings indicate generally the sizes of the components parts and general standards. These may be varied slightly to suit the standard adopted by the manufacturer. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and installation drawings for approval of the Engineer-in-Charge and no work shall be performed until the approval of these drawings is obtained.

11.2 Shop Drawings:

The contractor shall submit the shop drawings of doors. Windows, louvers, cladding and other aluminum work, based on architectural drawings, to the Engineer-in-Charge for his approval. The drawings shall show full size sections of doors, windows etc. thickness of metal (i.e. wall thickness), details of construction, sub frame/ rough ground profile, anchoring details, hardware as well as connection of windows, doors and other metal work to adjacent work. Samples of all joints and methods of fastening and joining shall be submitted to the Engineer-in-Charge for approval well in advance of commencing the work.

11.3 Samples:

Samples of doors, windows, louvers etc. shall be fabricated, assembled and submitted to the Engineer-in-Charge for his approval. They shall be of sizes types etc. as decided by Engineer-in-Charge. All samples shall be provided at the cost of the contractor.

11.4 Sections:

Minimum doors and windows shall be fabricated from extruded section of profile as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineer-in-charge. The aluminum extruded sections shall conform to relevant IS designation with chemical composition and technical properties as per IS:733 and IS:1285. The permissible dimensional tolerance of the extruded sections shall be such

as not to impair the proper and smooth function/ operation and appearance of doors and windows.

11.5 Fabrication:

Doors, windows, etc. shall be fabricated to sizes as shown at factory and shall be of section, sizes combinations and details as shown in the Architectural Drawings. All doors, windows etc. shall have mechanical joints. All members shall be accurately machined and fitted to form hairline joints prior to assembly. The joint and accessories such as cleats, brackets, etc. shall be of such materials as not to cause any bimetallic action. The fabrication of doors, windows, etc. shall be done in suitable sections to facilitate easy transportation, handling and installation. Adequate provision shall be made in the door and window members for anchoring to support and fixing of hardware and other fixtures as approved by the Engineer-in-Charge.

11.6 Protection of Finish:

All aluminum members shall be wrapped with approved self-adhesive non- staining masking tapes.

11.7 Handling and stacking:

11.7.1 Fabricated materials shall be stacking in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carried out with utmost care, on receipt of materials at site, they shall be carefully examined to detect any damaged pieces. Arrangements shall be made for expeditious replacement of damaged piece/ parts. Materials found to be acceptable on inspections shall be repacked in crates and stored safely.

11.7.2 In the case of Composite windows and doors, the different units are to be assembled first. The assembled Composite units should be checked for line, level and plumb before final fixing is done. Units may be serial numbered and identified as how to be assembled in their final location of situation so warrants.

11.7.3 Where aluminum comes into contact with masonry brickwork, concrete, planter or dissimilar metals, it shall be coated with approved insulation lacquer, paint or plastic tape to ensure that electro- chemical corrosion is avoided. Insulation material shall be trimmed off to a clean flush line on completion.

11.7.4 The contractor shall be responsible for assembling Composite, bedding and filling the groove with backup roads polysulphide sealant inside and outside, placing the doors, windows etc. in their respective opening. After the doors/ windows have been fixed in their correct assigned position, the open hollow sections abutting masonry concrete shall be fitted with approved polysulphide sealant densely packed and neatly finished.

11.7.5 The contractor shall be responsible for doors, windows, etc. being set straight plumb, level and for their satisfactory operation after fixing is complete.

11.8 Installation

11.8.1 Just prior to installation the doors, windows etc. shall be uncrated and stacked on edge on level bearers and supported evenly. The frame shall be fixed into position true to line and level using adequate number of expansion machine bolts, anchor fasteners of approved size and manufacturer and in an approved manner. The holes in concrete/ masonry members for housing anchor bolts shall be drilled with an electric drill.

11.8.2 The doors, windows assembled as shown on drawings shall be placed in correct final position in this opening and marks made on concrete members at jambs, sills and heads against the holes provided in frames for anchoring. The frame shall then be removed from the opening and laid aside. Neat hole with parallel sides of appropriate size shall then be drilled in the concrete members with an electric drill at the marking to house the expansion bolts. The expansion bolts shall then be inserted in the holes, struck with a light hammer till the nuts is forced into the anchor shell. The frame shall then be placed in final position in the opening and anchored to the support through cadmium plated machine screws of required size threaded to expansion bolts. The frame shall be set in the opening by using wooden wedges at supported and bar plumbed in position. The wedges shall invariably be placed at meeting points of glazing bars and frames.

11.9 Neoprene Gaskets:

The contractor shall provide and install Neoprene gaskets of approved size and profile at all locations as shown and as called for to render the doors, windows etc. absolutely air tight and weather tight. The contractors shall produce samples of the gaskets for approval and procure after approval only.

11.10 Fittings:

Hinges, stays, handles, tower bolts, locks and other fittings shall be of excellent quality and manufacturers shall be approved by the Engineer-in-Charge.

11.11 Sealant:

11.11.1 Use modified silicone for joint subject to movement and in glazing.

11.11.2 Surfaces to receive sealant shall be properly prepared, cleaned, primed and excess sealant removed from finished surfaces.

11.11.3 Sealed joints shall be neatly tooled and surfaces smoothed.

11.11.4 Follow the instruction of the sealant manufacturers.

11.11.5 Colour of the sealant shall be approved by the Engineer-in-Charge.

11.12 Glazing:

11.12.1 Glazing shall generally be accomplished from the inside of building.

11.12.2 The glazing system shall be designed to this end use a continuous EPDM compression gasket on both sides (Present Gasket on one side of glazing pocket and roll in gasket on another side). A continuous wet seal shall be employed to ensure a complete water tightness.

11.12.3 Maintain a minimum glazing bite, edge clearance and surface clearance depending on the glass as recommended by the glass manufacturer.

11.13 Sealant and Gasket Application:

11.13.1 Sealant and gasket shall be provided wherever shown in the drawings or required for a permanently weather tight installation. The sealing mechanism is necessary but is not indicated, it shall be of type recommended by the sub- contractor and approved by the Engineer-in-Charge.

11.13.2 All adjoining surfaces shall be protected to receive sealant against staining by masking and/ or other methods.

11.13.3 Joints and joint surfaces shall be clean, dry, and free of any material that may have an adverse effect on the bonding and/ or seal of the sealant and gasket materials.

11.13.4 Apply sealant and gasket under the conditions recommended by the manufacturer(s). Prime all surface to receive sealant and gasket unless recommended otherwise, use no sealant that has started to set in its container or a sealant that has exceeded the self-life published by the manufacturer.

11.13.5 Fill all joints continuously and completely with sealant, forming a neat, uniform, concave bead. Finish the material flush with adjoining surfaces unless shown on the drawings. All sealant surfaces shall be tooled smooth.

11.13.6 Tensile or shear stress in structural silicone sealant joint shall not exceed 1.4 kg/ sqm.

11.14 Protection & Cleaning: The contractor shall adequately protect all components and accessories from damage during shipments, storage at job site, erection and after completion of the work. At such time as may be directed, the sub-contractor shall remove all protective tapes or coating, thoroughly clean all anodized aluminum and glass surfaces with suitable cleaning agent, make final adjustments to all ventilators, etc. and hardware leaving all in first class working order.

11.15 Details of Tests

11.15.1 The various tests on aluminum sections shall be conducted in accordance with the relevant IS codes.

11.15.2 The minimum number of tests for powder coating and corrosion resistance shall be as given below:

S. No.	Details	No. of Tests
1	Doors, Windows & Ventilators	5% of Nos. manufactured.

11.15.3 The samples of major member of each unit of doors/ windows shall be selected at random by Engineer-in-Charge as such that all the aluminum section be got tested.

11.15.4 The cost of samples, carriage or the samples and testing charges, if any, shall be borne by the contractor.

11.16 Acceptance Criteria:

The Aluminium sections shall conform to the provisions of the relevant items. For payment purpose only, actual weight of sections shall be taken into account. However, if the sectional weight of any Aluminium section is higher than the permissible variation then the weight payable shall be restricted to the weight of the section including permissible variation.

11.17 Measurement:

Payment by weight shall be made for Aluminium sections including beading only and all fixing angles cleats fittings and fixtures such as handles and hinges etc., shall not be included in the weight to be paid.

12.0 **WOOD WORK**

12.1 The wood work in general shall be carried out as per CPWD Specifications - 2019 Vol.I& II with upto date correction slips.

12.2 The samples of species of timber to be used shall be got approved and deposited by the contractor with the EE before commencement of the work. The contractor shall produce cash vouchers and certificates from kiln seasoning or/and chemical treatment plants about the

timber section to be used on the work having been kiln seasoned or/and chemically treated by them.

12.3 Factory made shutter as specified shall be obtained from factories approved by the Engineer in charge. The contractor shall inform well in advance to the Engineer-in-charge the names and address of the factory from where the contractor intends to get the shutters manufactured. The contractor will place order for manufacture of shutters only after written approval of the Engineer-in-charge in this regard is given. The contractor is bound to abide by the decision of the Engineer-in-charge and recommend a name of another factory from the approved list in case the factory already proposed by the contractor is not found competent to manufacture quality shutters. Shutters will however be accepted only if this meet the specified tests. The contractor will also arrange stage wise inspection of the shutters at factory to the Engineer-in-charge or his authorized representative. Contractor will have no claim if the shutters brought at site are rejected by Engineer-in-charge in part or in full lot due to bad workmanship / quality even after inspection of factory. Such shutters will not be measured and paid and the contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by Engineer in Charge or his authorized representative.

12.4 All fittings and fixtures shall be got approved from the Engineer-in Charge before procurement well in advance and the approved samples shall be kept at site till completion of the work.

12.5 Glazing for toilets shall be of translucent type.

12.6 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.

13.0 RANDOM RUBBLE MASONRY

13.1 The work shall be done in accordance with CPWD Specifications - 2019 Vol. I & Vol. II with upto date correction slips.

13.0 **STONE / MARBLE /GRANITE WORK (OTHER THAN MASONARY)**

13.1 The execution of stones work shall be in general as per CPWD Specifications - 2019 - Vol.I & Vol. II with upto date correction slips.

13.2 **All holes, rebates, recesses etc. for providing fixing and inserts shall be predrilled and precut and worked using precision machine tools. Nothing extra on this account shall be payable**.

13.3 SAMPLES FOR STONE WORK: Samples of each item of stone work either individually or in combination shall be prepared for approval of Engineer-in-Charge before commencement of work.

13.4 Sequence of execution for cladding work shall be suggested by the contractor for approval of Engineer-in-Charge.

14.0 **SCAFFOLDING**

14.1 Double steel scaffolding having two sets of vertical supports shall be provided. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding planks shall be fixed.

5.13 LIST OF PREFERRED MAKES OF MATERIALS

Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

Acceptable makes of materials to be used in the work are enclosed. In case of non availability of the same makes, the Engineer-in-charge may permit the use of alternative makes, subject to specified guidelines. Only BIS marked materials shall be used in the work. Non BIS marked materials may be permitted by the Engineer-in-charge only when BIS marked materials are not manufactured.

The contractor shall obtain prior approval from the Engineer-in-Charge before placing order for any specific material or engaging any of the specialized agencies. The contractor shall make a detailed submittal with catalogues and highlighted proposed specifications, as well as full details of the works executed by the specialized agency, as specified.

Unless otherwise specified, the brand , make of the material as specified in the item nomenclature, in the particular specifications and in the list of approved materials attached in the tender, shall be used in the work.

In case of non-availability of the brand specified in the contract the contractor shall be allowed to use alternate equivalent brand of the material subject to submission of documentary evidence of non availability of the specified brand. The necessary cost adjustments on account of above change shall be made for the material.

The materials will be used in the work only after sample of the materials are approved.

LIST OF PREFERRED MAKES OF MATERIALS (CIVIL WORKS)

S. No.	Materials	List of Approved Make
1.	Ordinary Portland Cement/PPC	ACC / Ultratech / J.K. Cement /Shree/Bangur/ Jaypee.
2.	White Cement	Birla White / J.K. White / Ferrocement
3.	Reinforcement Steel TMT Bars	SAIL / Tata Steel Ltd. (TISCON) / Rashtriya Ispat Nigam Ltd (RINL) / JSW Steel Ltd. (NEO)/ Jindal Steel & Power Ltd. (Panther)
4.	Structural Steel	SAIL / Tata Steel / Rashtriya Ispat Nigam Ltd (RINL) / JSW Steel Ltd. / Jindal Steel & Power Ltd.
5.	Water Proofing Compounds, Admixtures, Plasticizer, Super Plasticizer, Curing Compounds	Fosroc / ROFF / Pidilite / CICO / Sika / BASF / Ardex Endura (Bal Endura) / MC Baucheme / Impermo / UltraTech / M/s Perma Const. Aids Pvt. Ltd. / STP Ltd. / Penetron / Rammers/ Asian paints ltd. / AV Fine Chemical Pvt. Ltd
6.	Integral Water proofing compound with cement (For Plaster & Mortar)	Fosroc: Conplast 421 / Dr. Fixit: LW+ / Sika: Sikacim/ Asian Paints: Smart care vitalia / & equivalent product of BASF / CICO / Ardex Endura / STP Ltd. / Astral/ Asian paints ltd.

7.	Water proofing for bathroom/toilet/balcony & other wet areas	Fosroc: Brush Bond / RFX / Nitocete 210 / CICO: Tapecrete / Dr. Fixit: Pidifine 2k / Sika: Nito Bond / Asian Paint: Damp Block 2 K / & equivalent product of BASF / Ardex Endura / STP Ltd. / Velosit / Astral/ Asian paints ltd.
8.	Crystalline water proofing compound	Fosroc: Fosroc Crystalline / Dr. Fixit: Dr. Fixit Crystalline / Sika: Sika Crystalline / Asian Paint: Crystalline Quart & equivalent product of BASF / CICO/ Ardex Endura / Penetron / Xypex / Crytone / STP Ltd. / Velosit / Astral/ ANEEB/ Asian paints ltd.
9.	Polycarbonate Sheet	Fibreways Technology (Fibreways)/GE Plastic / LEXAN / MG Polyplast
10.	Profile steel sheet	Fibreways Technology (Fibreways)/Ezydeck of TATA / Lloyd Superdeck / JSW / Jindal / Hindalco
11.	Particle Board	Action TESA / Greenlam / Merino / Archid Ply
12.	Laminates	Action TESA / Greenlam / Century Ply / Merino / Sunmica / Decolam / Formica / Asislam
13.	Flush door shutters	Duro / Century / Durian / Green ply / Archidply / JAYNA (Jain Wood Industries) / Kutty flush door / Anchor / Kitlam / National / KITPLY / Kalpataru / Ecoboard/Black Cobra / NP Brand of Northern Plywood (Laminated door also). / Indoprime/Zordenply NOTE: Only ISI marked flush door shutters to be used.
14.	Fire Rated Doors	Signum Fire Protection / Shakti Metdoor / NAVAIR / Sukri / Promat International / Bhawani Fire Pvt. Ltd./ Bhawani Fire
15.	Hardware/Fixtures/Fittings for Fire rated doors including Glazed fire rated doors	Briton / AssaAbbloy (King) / Dormakaba
16.	Fire Rated Glass	Saint Gobain / Pyran Schott / Pilkington / ASAI / Gold Plus Glass Industry Limited (Brand Name- “Gold Plus”)
17.	False Ceiling system	Armstrong / Hunter Douglas / Anutone, Dexune / USG Boral / Saint Gobain / Gyproc / Aerolite / Durlum / Interarch / P.R. Ceiling Products (MCRA)/Metapro/ Sakarni Gipskarton
18.	Plywood/Veneer	Green ply / Century / Merino / Duro / Durian/Black Cobra / NP Brand of Northern Plywood/ Zordenply.
19.	Melamine Polish	Asian Paints Melamine Gold / Wudfin of Pidlite / Timbertone of ICI Dulux.
20.	Floor Spring & Door Closure	Godrej / Dorma / Kich / Autoingress / Ozone/Harrison
21.	Aluminium Section	Hindalco / Jindal / Indian Aluminium co.
22.	Aluminium door/Window/ Partitions Fabricators	AluK / Kalco / Schuco / Reynaer / Technal / PSP Panzer
23.	Anodised Aluminium Hardware (Heavy Duty)	Kilong / Alualpha / Classic / Ebco/McCoy

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

24.	Clear/Float/Frosted/Toughened Glass/Refractive Glass	Saint Gobain / AIS / Modiguard / Ashahi Float / Gold Plus Glass Industry Limited (Brand Name- "Gold Plus")
25.	Stainless Steel Railing, Accessories etc.	JINDAL / Dorma / Kich / GEZE / Godrej / Hardwyn / Hettich / Hefele / Autoingress
26	S.S. Door /window & Fittings	Jindal / Dorma / Kich / Godrej / Hardwyn / Hettich / Hefele, Autoingress
27.	Silicon based water repellant/Weather Sealant	G.E. Plastics / Dow Corning / Wacker / BASF / Pidilite (Dr. Fixit/Roff) / STP Ltd. / Astral/ Asian paints ltd.
28.	Poly-Sulphide Sealant	Fosroc / Pidilite / Dow Corning / Wacker / BASF/STF, STP Ltd./ Asian paints ltd.
29.	Mosaic tiles/Chequered Tiles	Ultra Tiles / NITCO / Hyper (Mayur) / Pavcon
30.	Ceramic Tiles	Kajaria / Somany / RAK / NITCO / Johnson / AGL (Asian) / Orient Bell/ Italica Granito Pvt. Ltd. /Sparten/ Vitero Note: The tiles manufactured at mother plant only to be used.
31.	Vitrified Tiles (Antiskid/Matt/Glazed) (only GVT vitrified tile permitted)	Kajaria / Somany / RAK / NITCO / Johnson / Italica Granito Pvt. Ltd./Sparten/ Vitero Note: The tiles manufactured at mother plant only to be used.
32.	Grouts, Tile Adhesive	Latecrete / Kerokoal / BASF / Ardex Endura / Ferrous Crete / STP Ltd. / Astral/Himalayan Adhesives/ JK tylo/ Gres Bond (Kajaria)/ANEEB/ Asian paints ltd. / AV Fine Chemical Pvt. Ltd/ Sakarni Gipskarton
33.	Paver block & Kerb Stone	KK/ Power / Navya / PSpectra / Elegant / Kseries / Paegant / Tulip Infrastructure /Singh Tiles
34.	Dash/Anchoring Fasteners	HILTI / Fischer / Bosch / Wurth.
35.	Cement Based Wall Putty	Birla wall care / JK White / Berger / Asian Paints / Ferrous / Sakarni Gipskarton
36.	Oil Bound Washable Distemper/ Dry Distemper	Asian Paints / Nerolac / Berger / Dulux ICI/ JK Maxx Paints
37.	1st Quality Acrylic Distemper/ Dry Distemper	Asian Paints / Nerolac / Berger / Dulux ICI/ JK Maxx Paints
38.	Acrylic Emulsion Paints	Asian Paint (Tractor Aqua Lock Paint) / Berger: Commando or equivalent paints of Nerolac or ICI-Dulux/ JK Maxx Paints
39.	Plastic Emulsion Paints	Asian Paints: (Apcolite Heavy Duty Premium Emulsion Paint) / Nerolac: Beauty Gold / Berger: Easy Clean / ICI-Dulux: 3 in 1/ JK Maxx Paints

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

40.	Premium Acrylic Emulsion Paints (Interior)	Asian Paints: (Royal Luxury Emulson) / Nerolac: Impression / Berger: Silk / ICI Dulux: Velvet touch / Astral/ JK Maxx Paints
41.	Textured Exterior Paint	Asian Paints / Nerolac / Berger Paints / Ultratech Paints / Luxture/ JK Maxx Paints/ Sakarni Gipskarton
42.	Acrylic Smooth Exterior Paint	Asian Paints: (Apex/Professional Premium Exterior Emulsion) / Nerolac: XL / Berger: Weather Coat / ICI-Dulux: Weather Shield/ JK Maxx Paints
43.	Premium Acrylic Smooth Exterior Paint with Silicon additive.	Asian Paints: Apex Ultima / Nerolac: XL Total / Berger: Weather Coat all guard / ICI-Dulux: Whether Shield max
44.	Cement Primer	Asian: Apcolite Premium gloss enamel / Nerolac: Synthetic Hi gloss / Berger: Luxol Hi gloss / ICI-Dulux: Gloss Synthetic enamel
45.	Steel Primer (Red Oxide Zinc Chromate Primer)	Nerolac / Berger / BP White(Berger) / Decoprime WT(Asian) / White primer(ICI)
46.	Wood Primer	Nerolac / Paints(Wood Primer- White/Pink) / Berger ICI / Nerolac
47.	Epoxy Paint	Asian / Nerolac / Berger / ICI / Kansai Akzo Nobel / Pidilite / CICO / Sika / Astral
48.	Fire Paint	Asian Paints / Akzo Nobel Coatings India Ltd. / Promat / Jotun
49.	G.I./ M.S. Pipe/Hollow Section Pipe	Tata / Jindal (Hisar) / Prakash Surya
50.	G.I. Fittings	Unik / AVR / Zoloto
51.	HDPE Pipes	Reliance / Jain Pipes / ORIPLAST / Supreme/ Astral/ Adarsh
52.	DI PIPES	Electrosteel / Jindal / Tata Ductura / Kapilansh / Kesoram
53.	DI PIPES	Electrosteel / Jindal / Tata Ductura / Kapilansh / Kesoram
54.	CPVC pipe and Fittings	Astral / Supreme / Prince / Ashirwad /Flowguard / Finolex
55.	Centrifugally Cast spun) Iron Pipes & Fittings	NECO / SKF / Kapilansh / Electrosteel/RPMF
56.	C.I. Manhole covers, frames,& GI Gratings	NECO / SKF / Kapilansh / RAJ Iron Foundary Agra/ RPMF
57.	SFRC Manhole covers & gratings	K.K. Jain / PRAGATI / Tulip
58.	CP Brass Fittings (Superior Range)	Jaquar(Florentine and higher) / Grohe / Roca / Kohler / Astral
59.	CP Brass Fittings (Normal Range)	Hindware / Somany / Jaquar / Parryware / PRIMA (ISI marked) / CERA / ESS-ESS / Plumber / Kingston / Astral

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

60.	Mirror Glass	Atul / Modi Guard / Golden Fish / Asahi / Saint Gobain / Gold Plus Glass Industry Limited (Brand Name- “Gold Plus”)
61.	Sanitary ware, Fittings & accessories (Superior Range)	Kohler / Roca / Jaguar / Somany / Kajaria / Hindware / Astral/ Kerovit (Kajaria)/ Asian paints ltd.
62.	Sanitary ware, Fittings & accessories (Normal Range)	CERA / Parryware / Jaquar / Hindware / Kingston/ Astral/Somany// Kerovit (Kajaria)/ Asian paints ltd.
63.	Stainless Steel sink	Neelkanth / Niralli / Jyna, Hindware / Frankee / Cobra / Kingston /
64.	RCC Pipes (NP-2)	Lakshmi / Sood & Sood / Jain Pipe Co.(Newai) / Mahaveer Enterprises (Newai) / Work well spun pipes pali / Nagpur cement product / Eagle pipe Kolhapur/J.N. Sockted Cement Pipes Pvt. Ltd.
65.	UPVC Doors & Windows (PROFILE makers & their authorized Fabricators only)	Fibreways Technology (Fibreways)/Fenesta / KOMERLING / REHAU / Aluplast / Jangid Engg Works / Wintech / Duroplast / Saint Gobain /Encraft/ Prominance / PSP/Griham / Rashi Venture/ Rajshri/Okotech/Durakraft Extrusions
66.	Extruded Polystyrene Insulation Board	Dowcorning / Supreme / Taxas / Analco
67.	Heat Resistant Tiles	Thermatek
68.	Gypsum Plaster	Ferrous Crete, Gyproc - Saint Gobain / Ultra Tech / USG Boral / India Gypsum / Aerolite/ANEEB/ Sakarni Gipskarton/ Asian paints ltd.
69.	Floor hardener	Ironite / Ferrok / hardonate/ Asian paints ltd.
70.	Modular Expansion Joint	Herculus / Sanfield India Ltd. Vexcolt / Kemper (Kemperol)
71.	Glass wool	Dow Corning U.P. / Twiga, Isover
72.	UPVC doors and window hardware	Fibreways Technology (Fibreways)/Rotto /Kinlong /McCoy/ Encraft/ Prominance
73.	Ready Mixed Plaster	ACC / RMC India / Ultratech / Nuvoco / VALTECH / Armine / Ferrous Crete/ Asian paints ltd.
74.	Aluminium Composite Panel	Alpolic / Aluco Bond / Euro bond / Al-strong / Virgo/VIVA COMPOSITE PANEL (P) LTD./Alex / Alumaze Elite.
75.	Designer coloured cement concrete floor tiles for outdoor use.	Ultra / Nitco / Hindustan / Raj-Tiles / OM Tiles
76.	Fibre Glass Shelf	Fibreways Technology (Fibreways)/Kamal / Bath King
77.	Float Glass	Modi Float / Saint Gobain / Tata / Gold Plus Glass Industry Limited (Brand Name- “Gold Plus”)
79.	FRP Shutters	Fibreways Technology (Fibreways)/Fibre Glass Engineers / Raipur / Om Ventures (E.P.Kamat Group)
80.	Glass Mosaic Tile	Bissazza / Saon / Gold Plus Glass Industry Limited (Brand Name- “Gold Plus”)

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

81.	Hydraulic Door Closer/ Spring	Dorma / Kich / Godrej / Hettich / Hefele / Autoingress/Harrison
82.	Metal False Ceiling	Armstrong / Dexune / Anutone / Trac / Durlum / New Age / Manraj Ceiling Products Private Limited/ VIVA COMPOSITE PANEL (P) LTD / P.R. Ceiling Products (MCRA)/ Hi Steel/Metapro/Tranquil
83.	Mineral Fibre Ceiling	Armstrong / Anutone / Daiken / Aerolite / USG Boral / / P.R. Ceiling Products (MCRA)/Hi Steel/Metapro
84.	Acoustic panels and ceiling	Armstrong / Anutone / P.R. Ceiling Products (MCRA)/ Hi Steel/ Tranquil
85.	Clay tiles on Roof	Kenjai / Johnson.
86.	Orissa Pan	Hindware / Cera / Somany / Jaguar / Parryware / Astral
87.	PPR Pipes	Safe / Pioneer.
88.	Plastic Connection Pipe	Parryware / Kamal / Delux / Somany / Hindware
89.	PVC Rain Water Pipe & Fitting IS:13592 Type A & B	Finolex / Supreme / Plasto / Ashirvad / Astral/ Adarsh
90.	PVC Shutter	Fibreways Technology (Fibreways)/Sintex / Akal America/Black Cobra/Rajshri
91.	PVC Tank	Sintex / Star / Lotus / Plasto. / Astral
92.	SS Railing	Metallica India / Stark steel Fabricator / Mobel Hardware / ICICH Industries / Essal / Kich / D-Line / Godrej / Dorma
93.	Towel Ring/Towel Rod/Towel Rack	Jaquar / Marc / Roca / Kohler / Astral
94.	RMC (Ready mix concrete)	ACC / RMC India / Ultratech / Nuvoco
95.	Mangalore Tiles	Johnson / Kenjai / Monier
96.	RCC Door Frame	Ventura / Mahalaxmi
97.	Galvalum Sheet	Fibreways Technology (Fibreways)/Jindal / Tata Bluescope / JSW / Interach / Multicolour
98.	PTMT	Supreme / Kingston
99.	Anti Carbonation Paint	Dulux (ICI) / Asian / Berger / Astral
100.	Fly Ash Bricks	C'Cure / Shree adhe Enterprises
101.	AAC Block	Ultratech / Aerocon from HIL / Siporex India limited / Insta Block / Shree / GCC Thermal.
102.	AAC Block Adhesive	Ultra Tech / Ardex Endura / Ferrous Crete / Bostik / M/s Delite Blocks Pvt. Ltd. / Siporex/ Asian paints ltd.
103.	PUF sandwich Panel	Fibreways Technology (Fibreways)/Sintex / Llyod / Jindal / Multicolour / Interarch
104.	Polymer Based Contentious Water Proof Coatings/Polyurea treatment	Ardex Endura / Dow / BASF / Mc-Bauchemie / Sika / Fosroc / Pidilite / Berger / Asian Paint Smartcare / Xterra/ velosit / Astral
105.	Expansion Joint filler/Joint wires	Vexcolt International Ltd. / Construction Specialities / Sainfield / Hercules / MIGUA / Mapei / Balco India / Z-tech / Inprocorp / Moldo Sports.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

106.	Expansion Filler board	Supreme / Insuboard / Shalimar / Own corning / Technonicol.
107.	Roller/Roman/Vertical blinds	Vista /Deck/Decor.
108.	WPC	Fibreways Technology (Fibreways)/Rajshree/ Centuray/Black Cobra / Falcongreen/ Rajshri
109.	PEB Buildings	Fibreways Technology (Fibreways)/GB Enterprises Pvt. Ltd. (GB)
110.	FRP Manhole Covers & Gratings	Fibreways Technology (Fibreways) or Equivalent/ RPMF
111.	FRP Sheets & Gutters	Fibreways Technology (Fibreways) or Equivalent
112.	Solar Module Mounting Structures	GB Enterprises Pvt. Ltd. (GB) or Equivalent
113.	uPVC Door Window Reinforcement Channels	GB Enterprises Pvt. Ltd. (GB) or Equivalent
114.	Modular Containerized Shelters	GB Enterprises Pvt. Ltd. (GB) or Equivalent
115.	Light Gauge Steel Framing Systems.	GB Enterprises Pvt. Ltd. (GB) or Equivalent
116.	Grid Suspension Ceiling System (T-Grids)	GB Enterprises Pvt. Ltd. (Metapro) or Equivalent
117.	Ready mix cement plaster	ANEEB/Ultratech or Equivalent
118.	Polyurea Systems – Pure/Hybrid	Asian paints ltd./ ANEEB or Equivalent
119.	Water Proofing Membrane	Asian paints ltd./ Sikka/STP Ltd. or Equivalent
120.	Injection Grouting	Asian paints ltd./ Sikka/Pidilite or Equivalent
121.	Flooring – Epoxy, PU, EPU, Anti-Static	Asian paints ltd. or Equivalent
122.	Hubless Centrifugally Cast (spun) Iron Pipes & Fittings	NECO / SKF / Kapilansh / Electrosteel/RPMF
123.	Laminated Flooring	Deck/Armstrong/Pergo
124.	Medical Curtain/IVTrack & Hangers	Deck/Hunter Douglas/Track 2 Curtain

Note:

- **CE, Dehradun reserves the right to add any IS make/brand of Make In India in the list of preferred makes/brands (provided technical specifications of MII make/brand matches with specifications of the item), on the recommendations of Engineer-in-charge.**

- **CE, Dehradun reserves the right to delete any makes/brands if technical specifications of the makes/brands do not match with specifications of the item, on the recommendations of Engineer-in-charge.**

Executive Engineer

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.14 LIST OF ITEMS TO BE EXECUTED THROUGH SPECIALIZED AGENCIES

1. All Waterproofing Works.
2. Plumbing and Sanitary Installations i/c Fixtures.

The bidder shall have to associate other agency(s) for execution of each of the specialized work(s), which fulfils the eligibility criteria as experience of having successfully completed works during last seven years ending previous day of last date of submission of bid:

(i) One work of financial value not less 80% of ECPT of stated specialized component

OR

(ii) Two works each of financial value not less than 60% of ECPT of stated specialized component

OR

(iii) Three works each of financial value not less than 40% of ECPT of stated specialized component

The eligibility as defined & detailed in table in CPWD-6 of NIT shall prevail & prior approval shall be taken before associating required specialized agencies. The bidder and the associated specialized agencies shall give required affidavit to confirm their association. Tender accepting authority may approve change of sub agency in case it is required during the currency of contract. However, the bidder shall also be eligible to carry out himself any or all of these works without associating any other agency provided:

a. He fulfills the prescribed eligibility criteria respectively for these work(s).

Or

b. He directly procures the items of approved make from manufacturer and gets it installed from authorized agency/ service provider of the manufacturer or specialized agency as per criteria mentioned.

The responsibility of the quality of work executed by the specialized agency shall be owned jointly by the specialized agency and main agency. However, prime responsibility shall be owned by the main agency.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.15 GUARANTEE BONDS FOR VARIOUS ITEMS

The contractor shall be duly responsible for and shall guarantee for proper performance of the following items for the specified period of years from the date of completion of the work: -

Sl No.	Item	Gross Value of work done (Rs.)	Remarks (Guarentee period)
1	All types of Waterproofing Works	As per execution	**Ten percent** of the gross value of work done against these items, shall be retained as security deposit **for 10(ten) years***
2	Plumbing and Sanitary Installations i/c Fixtures	As per execution	**Five percent** of the gross value of work against these items, shall be retained as security deposit **for 5(five) years***

Note:

The amount so withheld would be released after **the years* so specified to be reckoned** after the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defects are noticed during the guarantee period, it shall be rectified by the contractor within **seven** days of receipt of intimation of defects in the work. If the defects as pointed out are not attended by the contractor within the specified period, the same will be got rectified from another Contractor at the risk and cost of contractor.

However, the security deposit deducted may be released as per Schedule-F by Engineer-in-charge. The Security deposit against these items of work shall be in addition to the security deposit mentioned else where in contract form.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-VI

5.16 GUARANTEE TO BE EXECUTED BY THE CONTRACTORFOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATERPROOFING WORKS

This agreement made this..... day of ..... Two Thousand ..... between M/s .....(hereinafter called the GUARANTOR on the one part) and the PRESIDENT OF INDIA (hereinafter called the Government on the other part)

WHEREAS THIS agreement is supplementary to a Contract No. ……..dated .....(Hereinafter called the Contract)and made between the GUARANTOR on the one part and the Government on the other part whereby the contractor inter alia undertook to render the building and structures in the said contract completely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain water and leak proof, for **Ten Years** from the date of completion of the work under the contract.

NOW THE GUARANTOR hereby guarantee that work executed by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be **Ten years** to be reckoned from the date of completion of the work under 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 nature and cause of defect 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 calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

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

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

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

1. ..... 2. .....

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

1. ..... 2. .....

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-VII

TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF PLUMBING AND SANITARY INSTALLATIONS INCLUDING FIXTURES

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

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

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing and unsound materials and other related problems.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable after the expiry of maintenance period prescribed in the contract for the **minimum life of 5 (Five) years** to be reckonedafter the date of completion of the work.

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

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

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

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

1. _____
2. _____

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

1. _____
2. _____

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.17 Scope of Work(both Civil Works and E&M Works)

1 The contractor has to make arrangement of site establishment/office, site equipments, site lab, cement godown, steel yard, necessary barricading, labour huts & Medical room at site with trained nursing staff.

2 Before start of work, necessary statuary approval shall be taken by the agency from local administration/authority as required.

3 Preparation of shop drawings of Civil and E&M works by the agency, wherever required

4 Execution of works(Civil and E&M) according to approved drawings, item nomenclature, specifications, list of preferred makes etc. as per direction of Engineer-in-charge. Agency shall ensure testing of materials as per specified frequencies.

5 Testing and commissioning of both Civil Works and E&M Works including services like water supply lines, storm water drainage lines, sewerlines, E&M services etc. by the agency and making it fully functional.

6 Defect rectification during execution of works(Civil and E&M) and up to defect liability period after completion of works(Civil and E&M) by the agency.

7 Deep cleaning of building, removal of malba, shuttering, scaffolding, all types building materials, scraps etc. from of the site by the agency before recording of completion certificate of works(Civil and E&M).

5.18 Completion plan and completion certificate (Civil Works)

1. For all works completion certificate after completion of work shall be submitted to the Engineer-in-charge.
2. Completion plan shall be submitted alongwith following:

   (i) Architectural Drawings showing internal plumbing, sanitary and drainage lines.

   (ii) Warranty card of materials (catalogue no.) and equipments.

   (iii) Guarantee bonds.

   (iv) All statutory/ local body permissions/approvals as required.

   Note: The fee payable to local body shall be reimbursed to the agency on the actual basis after submission of proof of fee paid by agency to the Engineer-in-charge for such local body approvals.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.0
PART-C

TECHNICAL SPECIFICATION OF E & M WORKS

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

6.1 PROFORMA OF SCHEDULES
(ELECTRICAL & MECHANICAL WORKS)

SCHEDULE 'A' Schedule of quantities	As Per Part-A of NIT
SCHEDULE 'D' Extra schedule for specific requirements/ document for the work, if any.	As per bid document
SCHEDULE 'E' Reference to General Conditions of Contract	As Per Part-A of NIT
Name of Work	**Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**
Estimated cost of work	As Per Part-A of NIT
Earnest money	As Per Part-A of NIT
Performance guarantee	As Per Part-A of NIT
Security deposit	As Per Part-A of NIT
SCHEDULE 'F'	
GENERAL RULES & DIRECTIONS:	
Officer inviting tender:	As Per Part-A of NIT
Applicable Mode of Contract	As Per Part-A of NIT
Type of Building	As Per Part-A of NIT
List of Approved Construction Tecnologies	As Per Part-A of NIT
(i)Engineer-In-Charge (for civil work) (ii)Engineer-In-Charge (for Electrical work)	As Per Part-A of NIT
Accepting Authority	As Per Part-A of NIT
Percentage oncost of materials and labour to cover all overheads and profits:	15% (7.5% OH + 7.5% CP)
Standard Schedule of Rates	As Per Part-A of NIT
Department	Central Public Works Department.
Standard CPWD Contract Form	CPWD Form-7 (Perecntage Rate Tender) as modified & corrected up to previous day of the last date of submission of bid.
Clause 1	

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

(i)Time allowed for submission of Performance Guarantee, Programme chart (time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance.	As Per Part-A of NIT
(ii) Maximum allowable extension with late fee at 0.1% per day of performance guarantee amount beyond the period provided in (i) above	As Per Part-A of NIT
Clause 2	
Authority for fixing compensation under clause 2	As Per Part-A of NIT
Clause 5	
Number of days from the date of issue of letter of acceptance for reckoning date of start	As Per Part-A of NIT
Clause 5.1 Submission of Time and Progress Chart aginst Mile Stones	As Per Part-A of NIT
Clause 5.2 Nature of Hindrance Register (either physical or electronic)	Electronic(online)
Schedule of rate of recovery for delay in submission of theTime and Progress Chart and progress report within specified period, in terms of per week of delay in weeks	As Per Part-A of NIT
Clause 5.4	
Schedule of rate of recovery for delay in submission of the modified programme in terms of delay days	As Per Part-A of NIT

Schedule of Handing over of site

Part	Portion of site	Description	Time period for handing over to be reckoned from date of issue of letter of intent
Part A	Portion without any hindrance	As Per Part-A of NIT	As Per Part-A of NIT
Part B	Portion with encumbrances	As Per Part-A of NIT	As Per Part-A of NIT
Part C	Portions dependent on work of other agencies	As Per Part-A of NIT	As Per Part-A of NIT

Schedule of issue of Designs/ Drawings

Part	Portion of Designs	Description	Time Period for Issue of design reckoned from date of acceptance letter

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

Part A	Portion already included in NIT	Architectural drawings	Uploaded with NIT
Part B	Portions of Architectural Designs to be issued	As Per Part-A of NIT	As Per Part-A of NIT
Part C	Portions of E&M Designs to be issued		
Time allowed for execution of work from date of start		As Per Part-A of NIT	
Authority to decide:			
(i)Extension of time		As Per Part-A of NIT	
(ii)Rescheduling of milestones		As Per Part-A of NIT	
(iii) Shifting of date of start in case of delay in handing over of site		As Per Part-A of NIT	
Clause 6: CMB/EMB		As Per Part-A of NIT	
Clause7		As Per Part-A of NIT	
Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment		As Per Part-A of NIT	
Clause 7A Whether Clause 7A shall be applicable (No RA bill shall be paid till submission of EPFO, ESIC and BOCW Welfare Board)		As Per Part-A of NIT	
Clause 8A Authority to decide compensation on account if contractor fails to submit completion plans.		As Per Part-A of NIT	
Recovery rate fornot submission of completion plans by the contractor		As Per Part-A of NIT	
Clause 10 A			
List of testing equipment to be provided by the contractor at site lab		As required during the Execution of Work as per CPWD Specification	

Clause 10 B (ii) Whether Clause 10B (ii) shall be applicable	As Per Part-A of NIT
Clause10 B (iii) Whether Clause 10B (iii)shall be applicable	As Per Part-A of NIT

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Clause 10 C Payment on account of increase in prices/ wages due up statuory order(s) Note: Applicable only when Clause 10 CC is not applicable	As Per Part-A of NIT
Component of labour expressed as percent of value of work=25 % for civil works and 15% for E&M works (Payment under this clause for this component is admissible when contractor submits proof of having paid wages due to every worker through bank or ECS or online transfer to his bank	As Per Part-A of NIT
Clause10CC Price Adjuctment for works	As Per Part-A of NIT
Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the	As Per Part-A of NIT
Schedule of component of other Materials, Labour etc. for price escalation for Civil Works	
Component of civil construction materials expressed as percent of total value of civil work	As Per Part-A of NIT
Component of labour expressed as percent of total value ofcivil work	As Per Part-A of NIT
POL(Diesel) Component expressed as total value of Civil work	As Per Part-A of NIT
Schedule of component of other Materials, Labour etc. for price escalation for Electrical & Mechanical (E&M) Works	
Component of E &Mconstruction materials expressed as percent of total value of E &M	As Per Part-A of NIT
Component of labour expressed as percent of total value of E &M works.	As Per Part-A of NIT
POL (Diesel) Component expressed as total value of E&M works	As Per Part-A of NIT
Clause11	
Building information model (BIM) is applicable	As Per Part-A of NIT
Specifications to be followed for execution of work	
Specifications to be followed for execution of	As Per Part-A of NIT
Clause12.1&12.2	As Per Part-A of NIT
Deviation limit beyond which clause 12.2 shall apply for all the items	As Per Part-A of NIT
Clause 16 Competent authority for deciding reduced rates.	As Per Part-A of NIT
Clause 17 Contractor liable for damages, defects during defect liability period	As Per Part-A of NIT
Clause 18	
List of mandatory machinery, tools & plants to be deployed by the contractor at site	As Per Part-A of NIT

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Clause 19 Competent Authority to decide penalty for	As Per Part-A of NIT
Clause19 C	As Per Part-A of NIT
Clause19 D	As Per Part-A of NIT
Clause19 G	As Per Part-A of NIT
Clause19 K	As Per Part-A of NIT
Clause25	As Per Part-A of NIT
Clause-32: Requirement of Technical Representative(s) and Recovery Rates	As Per Part-A of NIT

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.2 GENERAL CONDITIONS FOR ELECTRICAL & MECHANICAL WORKS

(a) After award of work and before the first mile stone, the main contractor will have to submit Name (s) of the proposed associate contractor (for each of the E & M works), who fulfill the eligibility criteria for the relevant package. The documents will have to be submitted in detail as required, which will be checked as per NIT for approval of the associate contractors. It will be essential that proposed electrical associate agency qualify the eligibility criteria for package given in NIT.

(b) The department reserves the right to allow the main firm to submit additional Documents /additional names of the associates in case of the deficiencies in documents or in case of no associate getting qualified in respect of certain package. The same will have to be complied with the main contractor within the time allowed. The decision of the department shall be firm & binding on the intending bidders.

(c) The main contractor should submit the Consent letter (willingness) and Affidavit of MOU from at least one eligible associate agency of the respective package of E&M work for each of the package of E & M works by clearly indicating the component of work after award of work and before the first milestone. The Willingness and Affidavit of MOU shall be signed by both contractors, Main contractor as 1st party and associated contractor as 2nd party, independently for Name of work & Package specified.

(d) If the main contractor fails to associate agency for execution of minor components of work after award of work and before the first milestone or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of work shall be withdrawn from the contractor and the same shall be got executed by the Engineer-in–Charge at the risk and cost of the main contractor.

(e) 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 by competent authority shall have to be submitted. The credentials for work experience submitted by associate contractor shall be for work executed by him in Central/state Government, Government undertaking, autonomous bodies. Such associate electrical contractor will certify that they are not debarred as on the day of application for sale of tender.

(f) In event of the concerned E & M contractor 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 fulfills 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 contractor and shall meet all the guarantee for the equipments 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 contractor 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 Associate Electrical Contractor will be allowed without prior approval of the CPWD competent officer.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

(g) Executive Engineer (E) shall be the Engineer-in-charge as far as for all electrical & mechanical services/ works are concerned.

(h) The main contractor shall be responsible and liable for proper and complete execution of the Electrical work and ensure coordination and completion of both civil and electrical work.

(i) The main contractor has to enter into agreement with contractor(s) associated by him for execution of E&M subheads. Copy of such agreement shall be submitted to Engineer-in-charge of work. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.

(j) The associate or sub-contractor shall attend the inspection of the work by the Engineer- in-charge of E&M works as and when required. The contractor executing the electrical work should have valid license for LT/HT as applicable and as described in eligibility criteria.

(k) Verifiable completion certificates of the work eligibility documents as the case may be, duly attested by the applicant shall be submitted. Valid Electrical Contractor's license, as the case may be, duly countersigned by the applicant as well as signed by the associate contractors shall also be submitted. Self- attested GST documents in respect of the associated agencies as well as signed by associate firms shall be submitted.

(l) For the different E & M package, the main contractor will have himself / to engage the associate electrical contractor/ specialized agency in the respective specialized works/ package after award of work and before the first milestone as per following: -

(i) The main contractor should either himself meet the eligibility conditions for the respective E & M packages or otherwise he will have to associate an agency meeting the eligibility criteria.

(ii) Main contractor will have to submit willingness certificate & MOU for each of the package for Associate agencies by clearly indicating the applicable E & M Package.

(iii) The composite category contractor is also be eligible to carry out any or all of these works without associating any specialized agency provided :-
Contractor fulfills the prescribed eligibility criteria respectively for specialized package.

OR

Contractor 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 eligibility criteria.

(iv) The eligibility criterion for Associate agency for different E& M components are given below. They will have to submit willingness certificate for each of the component of the Electrical work for Associate agencies by clearly indicating the applicable component of the work.

(v) The firm should have successfully completed similar works during the last 7 years ending up to last day of previous month of submission of application by main contractor to department. The main contractor will submit the associate agency related documents for approval to Executive Engineer (Elect), before 1st milestone for each E&M Packages.

(vi) The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of

completion to the last date of submission of application by main contractor to department.

NOTE: The package cost mentioned in below is for the purpose of eligibility criteria only; package wise total cost is given as below which is rough cost and should not be used or interpreted for any other purpose.

m) The work shall be generally carried out in accordance with tendered drawings, tender/bid specifications alongwith following specifications with upto date amendments/correction slips.

(i) CPWD General Specifications for Electrical Works Part-I Internal 2023.
(ii) CPWD General Specifications for Electrical Works Part-II External 2023.
(iii) Part-III Lift & Escalators-2023
(iv) Part-IV Sub Station – **2013**
(v) Part V Wet Riser & Sprinkler Systems – **2020**
(vi) Part VI Fire Detection and Alarm System – **2018**
(vii) Part VII D.G. Sets - **2013**
with correction slips up to previous day of last date of submission of tender
(viii) Indian Electricity act 2003 amended upto date.
(ix) National Electrical Code 2016 amended upto date.
(x) Indian Electricity Rules 1956 amended upto date
(xi) National Building Code 2016 as amended up to date
(xii) Green and Ghar Rating
(xiii) As per instruction of the Engineer-In-charge.

COMMERCIAL CONDITIONS

Income tax, GST, labour cess & other statutory deductions etc. shall be made at source as per the prevalent laws. The deductions of Security Deposit, Income-Tax etc. shall be done as applicable on the gross payments and net payment shall be paid accordingly.

Nothing Extra Shall be paid for GST, labour cess, etc., all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary construction of storage, risks, overhead charges, general liabilities/obligations and clearance from CEA. However, the fee for the CEA inspections shall be reimbursed/ borne by the department. EPF & ESIC contributions are to be made by the contractor.

DOCUMENTS

In case of Specialized E & M works, the contractor should submit the following documents after the acceptance of tender, an undertaking from the OEM for the component.

Authorization Certificate & technical compliance on their letter head.
The OEM is 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.
OEM is providing all the spares required for healthy functioning of the equipment for at least seven years from the date of supply of equipment.

STORAGE AND CUSTODY OF MATERIALS

The contractor has to make his own arrangements. No storage accommodation shall be provided by the department. Watch and ward of the stores and their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department/ client.

CARE OF THE BUILDING:

Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.

COMPLETION PERIOD

The completion period indicated in the tender documents is for the entire work approval of drawings, arrangement of materials & equipments, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the department/ client.

GUARANTEE

All equipments shall be guaranteed for a period of 12 months (except LED fittings which shall be guaranteed for 5 years), from the date of taking over the entire installation by the user department, against unsatisfactory performance and/or break down due to defective workmanship or material. The equipments or components, or any part thereof, so found defective during 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 the Engineer-in- charge in this regard shall be final & binding on the contractor.

The tender shall guarantee among other things, the following:

(i) Quality, strength and performance of the materials used as per manufacturer's standards

(ii) Safe mechanical and electrical stress on all parts under all specified conditions of operation.

POWER SUPPLY:

The contractor has to make its own arrangement for power supply and water supply required for execution of the work.

ACCEPTABLE MAKES OF VARIOUS EQUIPMENTS:

The acceptable makes of various equipments /components/accessories have been indicated in "Prefered Makes" appended with the tender documents. Alternate makes are not acceptable unless otherwise specially mentioned in NIT under the condition of Equivalent Make. The materials to be used in the work shall be got approved by the Engineer in Charge / his

representative before its use at site. The E- in-C shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not acceptable.

DETAILS AND DRAWINGS TO BE FURNISHED BY THE CONTRACTOR:

The contractor would be required to submit the following details and drawings after award of work for approval duly approved by Engineer-in charge.
The any modification or correction during execution or before execution of work, if any in General arrangement drawing, including detailed GFC drawings of all E&M components shall be prepared in AUTOCAD or equivalent software and submitted by the contractor well in advance to get the approval from the Engineer-in-charge. Details of foundations for the equipment's and assembled equipment's. Any other drawings necessary for the job.
After completion of work the contractor should furnish three copies of detailed instructions and manufacturer's manuals of all equipment's regarding installation, operation and maintenance, preventive maintenance & trouble shooting with all the relevant data sheets, spare parts catalogue.

EXTENT OF WORK

The work shall comprise of entire labour including supervision, all materials necessary to make a complete installation, testing, adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipments covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not been mentioned in details in the tender document in connection with this contract.
In addition to supply, installation, testing and commissioning, of all E&M equipment, following works shall be deemed to be included within the scope of work to be executed by the contractor.
Minor building works necessary for installation of equipments, foundation, making of opening in walls or in floors and restoring them to their original condition finish and necessary grouting etc. as required.
All necessary supports may be arranged.
Testing of PTs/CTs for metering & protection purpose & relay calibration & setting. Getting inspection done & obtaining approval from Central Electrical Authority and local fire authority for energizing the installation. However, necessary fees for inspection shall be borne by the Department.

All E&M equipment/materials shall be tested from the NABL approved laborites as per the guidelines of Quality Assurance Policy & Check List of E&M Services. The laborites shall be be Government Labs/ Government autonomous bodies. However, necessary fees for inspection shall be borne by the Department.

QUALITY OF MATERIAL AND WORKMANSHIP:

All parts of the equipment shall be of such design, size and material so as to function satisfactorily under all rated conditions of operation. 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.

INSPECTION AND TESTING

All major equipments like Lift/Panels/Cable Tray etc (as per the guidelines of Quality Assurance Policy & Check List of E &M Services/ specifications) shall be offered for initial inspection.

Contractor will intimate the date of testing of equipment’s at the OEM premises before dispatch. The successful tenderer shall give advance notice of minimum two weeks regarding the dates proposed for such tests to the department’s representative to facilitate his presence during testing.

The Engineer-in-charge or his representative may witness such testing. The cost of the Engineer’s visit to the factory will be borne by the Department. Equipments will be inspected at the manufacturer (OEM) premises, before dispatch to the site by the contractor if so desired by the Engineer-in-charge. Engineer- in-charge at his discretion may waive off inspection at factory /at the manufacturer’s works before dispatch.

The installation shall be subject to necessary inspection during every stage of erection, by the Engineer In-charge or his authorized representative. The contractor shall provide all facilities and assistance for the purpose.

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.

All instruments and facilities necessary for the tests shall be provided by the contractor.

Copies of all documents of routine and type test certificates of the equipment, carried out at the Manufacture’s premises shall be furnished to the Engineer-in-charge. The decision of the Engineer-in- charge in this regard shall be final & binding on the contractor.

After completion of the work in all respects the contractor shall offer the installation for testing and operation. The contractor should submit all the related documents of completed E&M equipment to the department.
The following equipments should be inspected at OEM premises/factory:

(i) Fire Fighting System
(ii) Fire Alarm System
(iii) UPS
(iv) Lifts
(V) Substation equipment
(vi) Major HVAC system

Any other major equipment as per Engineer-in-charge.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS

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

(i) Factories Act.
(ii) Indian Electricity Acts & Rules.
(iii) B.I.S. & other standards as applicable. Workmen's compensation Act.
(iv) Statutory norms prescribed by local bodies like CEA, Power Supply Co., Fire authorities

After completion of the installation, the same shall be offered for inspection by the representatives of the Lift inspector/local body and local fire authority. The contractor will extend all help including test facilities to the representatives of Lift inspector/local body/CEA/Local fire authority. The observations of Lift inspector/local body/CEA/Local fire authority will be attended to by the contractor. The installation will be commissioned only after getting clearance/NOC certificate from Lift inspector/local body/CEA/Local fire authority. Contractor should get inspection done & obtain approval from Lift inspector/local body/CEA/Local fire authority.

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 during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the successful tenderer to the extent 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.

ERECTION TOOLS:

No tools and tackles either for unloading or for shifting the equipments for erection purposes would be made by the department. The contractor shall make his own arrangement for all these facilities. Scaffoldings & any other T & P required for execution, testing and commissioning of
work shall be arranged by the contractor and nothing extra shall be paid on account of this.

COOPERATION WITH OTHER AGENCIES:

The contractor shall co-ordinate with other contractors and agencies engaged in the buildings, if any, and exchanges freely all technical information so as to make the execution of this work/contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want of cooperation and coordination by the contractor during the course of work, such expenditure incurred will be recovered from contractor if the restoration work to the original condition or specification of the dismantled portion of the work was not undertaken by contractor himself.
The work will be carried out with least disturbance during shifting & shut down taken in consultation with the client department.

INSURANCE:

All consignments are to be duly insured upto the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

The contractor shall include storage cum erection insurance including third party insurance right from the storage to commissioning and handing over of various equipments. In insurance, the beneficiary shall be Engineer -In- charge at the cost of the contractor. All insurance which the contractor is required to enter into under the contract shall be affected any authorized general insurance company and the contractor shall produce the policies of insurance. In case of any delay in ITC & handingover, the insurance cover will be suitably extended by the contractor at his own cost.

Remedy of failure to insurance: -
If the contractor fails to effect and keep in force the insurance referred to in the preceding sub-clause the department may affect and keep inforce any such insurance and pay such premium as may be necessary for that purpose and from time to time deduct the amount, so paid by the department, from any money due or which may become due to bids or recover the same as debit from the contractor bill.

VERIFICATION OF CORRECTNESS OF EQUIPMENT AT DESTINATION:

The contractor shall have to produce all the relevant records to certify that the genuine equipments from the manufacturers has been supplied and erected to the satisfaction of the Engineer-in-charge.

PAINTING:
This shall include cost of painting of the entire installation. The major equipments shall be factory final finish painted. The contractor shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. However hangers, supports etc. of bus trunking & cable tray etc. shall be painted with required shade including painting with two coats of anticorrosive primer paint.

TRAINING:
The scope of works includes the technical training of two persons (in each package) of user Department at site as decided by Engineer – in - charge. Nothing extra shall be payable on this account.

APPROVAL OF DRAWINGS, MAKES AND MODELS OF EQUIPMENT/MATERIALS

The agency shall submit drawings and details such as makes and models of the equipments/materials offered by him along with specifications for all E&M components on OEM letterhead to the Engineer-in-charge of the work, before ordering the equipment/materials for approval of the department.

The Engineer-in-charge shall scrutinize the proposal and approve the makes and models which are acceptable as per the schedule, specifications, conditions of the agreement and inform the agency for procurement.

After approval of the equipment/materials by the department the agency shall procure the equipment/materials from the OEM/authorized distributor/dealer as the case maybe.

Adequate care that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall also ensure that:

(i) Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.

(ii) As and when the order is placed for the fittings/ fixtures, cables, switchgears, poles, other main items etc, its copy shall be endorsed to the Engineer-in-charge of work. The contractor will submit makes & brands of electrical fittings wires& cables, conduits and switchgears, rising mains, poles, outdoor fittings etc. of preferred make list as per tender documents for approval of Engineer-In-Charge, whose decision will be final in the matter.

(iii) The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.

(iv) Inspection at factory or at godown, as required, shall be arranged by the firm for a mutually agreed date. Delivery of material shall be taken up only with the consent of department, after clearance of the material. Department shall reserve the right to waive off inspection in lieu of suitable test certificate, at its discretion.

(v) All the materials to be supplied by the contractor shall be procured & brought to site as per requirement at site of work in consultation with department so that these materials are not damaged & their manufacturer's warrantee.

(vi) In case of discrepancy between model and nomenclature of item the decision on precedence shall be taken on case-to-case basis as per government laid norms.

SAFETY CODES & STATUTORY REGULATIONS:

Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.
Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labor employed on the work by the tenderer. Failure to provide such safety requirement would make the tender reliable for penalty for each default as per agreement clause. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of contractor and recover the cost there of from him.

COMPLETENESS OF WORK:

The installations shall be completed in all respects and put in to operation even where certain details have not been mentioned / left out in the specifications. Any discrepancy may be brought in pre-bid meeting.
All E&M services such as Internal & External Electrical installations, street lighting, etc. shall be declared as completed after completion of 1 month trial run of completion of whole work. Defect liability period (DLP) of 12 (Twelve) months for all works / machineries/ equiments (except specialized items of the work) shall commence from date of completion of complete work (project) as well as handing over to the department/ client whichever is later shall be carried out by the agency at their own cost.

All electrical & mechanical fittings / fixture/appliances, to be provided for the work, where BEE certification is available should have minimum 3-star rating (of BEE) as on last date of closing of bid. Since, the proposed construction is for “GREEN” rating system of GHAR (Green Habitat Accomplished Rating) rating, all fittings and fixtures of shall be provided accordingly.

The CPWD specifications are available at CPWD website “cpwd.gov.in”. The department shall not be responsible for the lack of knowledge and also the Consequences thereof to the Contractor.

The information and data mentioned in the tender document have been furnished in good faith and for general information and guidance only. The Engineer -in- Charge in no case shall be held responsible for the accuracy thereof and / or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor and no claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different from data / drawing. It is presumed that the Contractor has satisfied himself for all possible contingencies, situations, bottlenecks and acts of coordination, which may be required between different agencies.

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

INCIDENTAL CHARGES:

All incidental charges of any kind including cartage, storage, wastage, idle labour and safe custody of material etc. shall be borne by the Contractor/ agency on their own cost.

QUALITY ASSURANCE:

The Contractor shall make available, on request from the Department, for record, copies of challans, cash memos, receipts and other certificates, if any, vouchers. towards the quantity and quality of various materials procured and the same shall be kept in record. These shall also provide information on the name of the manufacturer, manufacturer’s product identification, manufacturer's instructions, warning, date of manufacturing and test certificates from manufacturers for the product for each consignment delivered at site, shelf life, if any, for the department to ensure that the material have been procured from the approved source and of the approved quality, as directed by the Engineer -in-Charge. Day to day account of receipt of such material shall be maintained at site of work and shall be regulated by the department. Nothing extra shall be payable on this account.

QUALITY CONTROL AND TESTING OF MATERIALS:

All the material to be used on works shall be ISI certification mark unless otherwise the make is specified in the item or special conditions appended this tender document. Incase ISI mark material or the materials mentioned in the tender documents are not available, as per opinion of Engineer-in-charge, which shall be final and binding, the material to be used shall confirm to CPWD specifications applicable in this tender or IS Code. In such cases Engineer-in-charge shall satisfy himself about the quality or such material and give his approval in writing. Only

articles classified as first quality by the manufacturers shall be used unless otherwise specified. All material not having ISI mark shall be tested as per relevant ISI specification. The Engineer in charge may relax the condition regarding testing of the quantity of the materials required for the work is small. In all cases of use of ISI marked materials proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the entire satisfaction of Engineer -in-charge. All materials equivalent to the one specified should be got approved by the Engineer-in-charge before using the said materials in the work.

If the department desires to send any samples of materials for testing in accredited laboratory, the Contractor at his own expense shall supply all materials, labour for preparing and testing samples as required by the Engineer-in-Charge. The transportation and testing charges shall also be borne by the contractor.

SUPERVISION OF WORK:

The Contractor shall depute Site Engineers & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision-making powers shall be available to the representatives of the Contractor at site itself to avoid any likely delays on this account. The Contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deployed persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced or well familiars with the equipment / machineriesof the work; the Contractor shall deploy better & experienced staff at site to complete the work and in stipulated time limit.

OTHERS CONDITIONS:

The description of E&M service & specifications are given in general and indicative but they are not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and / or described in the specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the contract document/specifications but will be necessary to complete the item in all respect. All these incidental works /costs which are not mentioned, but are necessary to complete the work shall be deemed to have been included in the overall amount quoted by the contractor for various components of work. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation/change in actual working drawings. Also, no adjustment of rate shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-charge. Nothing extra shall be payable on this account.

The scope of works also covers the preparation of layout plans, drawings for E&M schemes and approval of the same from the respective local bodies, Fire Officer/CFO etc. before the commencement of work. During execution, if the local bodies etc. require a modification, the same shall be executed out any extra cost. Finally, after execution, approvals / NOCs /

clearances from local bodies etc. shall be the responsibility of contractor for which nothing extra is payable. In case any modification/extra work is required by the local bodies necessary for approvals /NOCs
/clearances, the same shall be get executed and nothing extra shall be paid on this account. All statutory fees / charges required for obtaining clearances from Fire Officer/ Lift Inspector/ CEA / Local Bodies shall be reimbursed by the department.

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

Contractor must produce original vouchers/challans of all equipment's, accessories, fan & fittings etc. and measuring instruments to the department, which is also required during process of "GREEN" rating system of GHAR (Green Habitat Accomplished Rating) certificate.

After completion of each package contractor must be submitted 4 sets of completion plan, all drawings, SLD, layout diagrams with complete detailed inventories of all E&M services along with soft copies also. The contractor shall submit the completion plan separately in triplicate on blue print/ computer plotted within 30 days of the completion of work.

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. All the equipments shall be delivered with (i) Manufacturer´s test certificate, (ii) Manufacturer´s technical catalogues and Installation / Instruction (O&M) manuals.

All the LED bulbs/fittings shall be guaranteed for a period of 5 years.

Data and Programme to be furnished by the tenderers:

The Contractor shall prepare the Programme chart for the execution of the work :

showing clearly all activities from the start of work to the completion required for the completion of the work within the stipulated period and submit the same to the Engineer-in-Charge within fifteen days after the issue of letter for commencement of the work. The Contractor shall also submit monthly Programme and progress reports and update / re-schedule the same every month. These shall be submitted by the contractor in soft copy also besides forwarding hard copy of the same.

Running payment for Electrical/Mechanical components shall be made by the EE(E) directly to the main Contractor. The main contractor shall make the payment to associated Contractor within 15 days of receipt of each running account payment. The main contractor shall be responsible for coordinating the activities of all works and will ensure progress of works as per laid down Programme chart.

The contractor must be able to work on concrete slabs / walls as and when required and in complete coordination with the civil works. Cutting of chases in the plastered wall shall in no case be allowed. The contractor shall fix conduits and boxes in the walls soon after the brick work is completed and finish the chase to rough surface with proper cement sand mixture. Only in exceptional cases e.g. where cutting of plastered surface cannot be avoided it will be contractor's responsibility to ensure that plastering is done to match the original finish at no extra cost.

Cutting of brick walls shall be with chase cutting machine only. All repairs and patch works shall be neatly carried out to match the original finish and to the entire satisfaction of the Engineer in Charge.

The connection between incoming switch gears and bus bar shall be made with suitable size of thimble and cable at no extra cost.

All MS junction box cover should be of phenolic laminated / good quality plastic sheet of thickness not less than 3mm and for which nothing extra shall be paid on the account. All hardware items such as nuts/ bolts/ screws/ washers etc. to be used in work shall be zinc/ cadmium plated iron.
While laying conduit, suitable size junction boxes shall be provided for pulling the wire as per the decision of the E-in-C.

The procurement of materials should be in confirmation of Make in India policy of Government of India by the Agency as applicable.

If any make of the equipments is not mentioned in the NIT then the decision of the Engineer-in-charge should be final.

All the necessary liasioning works related to work with different statutory bodies like electricity service provider, Fire department etc will be done by the agency however all statuary amount paid by him for this purpose will be reimbursed to him against production of original receipts after due verification by department.

IMPORTANT NOTES:

The defect liability period of all the wiring, cabling, equipments and components should be 12 (Twelve months) except specialized items of the work from the date of completion or handing over to the client whichever is later and all the LED fittings shall be guaranteed for a period of 5 years.

The contractor should be referring all the Drawings, Schedule of Items, Inventory of equipments & components, Specifications of all the packages, Manufacturer's specifications, all the CPWD specifications, conditions, Specification of local authories and related conditions & specifications. If any changes or queries shall be intimated before execution to the Engineer in charge and final decision shall be taken by department.

All the electrical and mechanical works, equipments & components should be executed as per specifications & schedule of items given in the respective packages with latest technology/ features in the all the electrical & mechanical equipments and component/ works at the time of execution / approval by the engineer in charge. No extra payment shall be paid in this account.

The contractor has to submit MOU on affidavit of Rs.300/- legal stamp paper duly notarized with associated contractor (in case electrical contractor is associated), engineers name credential email address & mobile no before start of work.

The contractor shall therefore employ Supervisory staff as per NIT provision who will be constantly in touch with the department and will sign site order book.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

All the material to be used on this work by the contractor shall be got approved from the Engineer-in-Charge in advance before installation at the site.

Sound Engineering practice as approved by the Engineer – in –charge. Any additional item of work, if taken up subsequently, shall also confirm to the relevant specifications mentioned above.
All the equipments shall be delivered with (i) Manufacturer´s test certificate, (ii) Manufacturer´s technical catalogues and Installation / Instruction (O&M) manuals.

The work shall be carried out according to approved shop floor drawing/details, which shall be prepared by the Contractor on the basis of Tender Drawings and details provided in tender for execution, in stages as per instruction of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.

All damages done to the building during the execution of electrical work shall be the responsibility of the contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. In case, the repair is not satisfactory, the department will get it rectified & any expenditure incurred by the department in this connection shall be recovered from the contractor and decision of the Engineer-in-charge about recovery shall be final & binding on the contractor.

The bad workmanship will not be accepted and defects shall be rectified at contractor‘s cost to the satisfaction of the Engineer-in- Charge. The program of electrical works is to be coordinated in accordance with the building work.

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

Cement/mortar for this benefited work is to be arranged and used by the contractor himself and nothing extra will be paid on this account.

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

The size of PVC conduit and wiring shall be got approved from the Engineer-in-Charge before the execution of work.

The contractor shall make his own arrangement at his own cost for Electrical / General tools and plants required for the work. In case, proper tools are not available, the department will purchase the tools for Bonafide use of work at the risk & cost of the contractor.

The contractor has to make his own arrangements for stores and watch & ward. No extra claim for this will be entertained.

The contractor shall make his own arrangements for electrical power supply for the construction activities. No extra payments for the same will be made.

The wiring and conduit route shall be marked by the contractor in the drawing first, and shall be got approved from the Engineer-in-charge.

Main board and main distribution board: - The work shall be carried out according to the drawing/details as approved by the Engineer-in-Charge. The contractor shall have to get the sample approved before the whole lot is brought to site. The main board, distribution board shall be properly labelled.

No tax shall be separately paid by the department separately. The rates tendered should be inclusive all taxes and duties. Statutory deductions at source shall be made while releasing payment through running/final bills as applicable. A certificate specifying the rate and amount of deduction shall however be issued by the department. The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department. The watch & ward is the responsibility of the contractor till handing over.

All items of interrelated works considered necessary to make the scope complete and operative are deemed to be included, shall be provided by the contractor at no extra cost.

The connection inter connection, earthing and inter earthing shall be done by the contractor wherever required and nothing extra shall be paid on this account.

Nothing extra shall be paid for inter connections with thimbles/Wires/Tapes strips etc. used on the work.

The contractor shall on demand by the Engineer-in-charge, furnish the proof to the satisfaction of Engineer-in-charge regarding purchase of Wires, Modular switches & accessories, MCBs MCBDB fan & fixture and accessories and other items, from the manufactures authorized outlets.

All MS conduits accessories shall be of the same make as conduits and shall be ISI marked. The conduits shall be terminated as switch boxes/metallic junction boxes with suitable glands/check nuts.

Cutting of brick walls shall be done with due care. All repairs and patch works shall be neatly carried out to match the original finish and to the entire satisfaction of the Engineer in Charge. If the structures are monolithic, the conduit shall be casted in the walls and ceilings as per approved layout drawings and points shall be provided in accordance of the same.

All the sub main and circuits wiring includes loose wire for connections inside switch boxes and MCB DBs. No payment for these loose wires shall be made.

To facilitate drawing of wires, 18 SWG GI fish wire shall be provided along with laying of recessed conduit for which no extra payment shall be made. Conduits laid for other services, like Fire alarm system, PA, etc., where wiring is not done along with IEI work, fish wire shall be invariably drawn.

The connection between incoming switch/isolator and bus bar shall be made with suitable size of thimble and cable at no extra cost.

Copper conductor of insulated cables of size 1.5 Sq.mm and above shall be stranded and terminals provided with crimped lugs.

All hardware items such as screws, thimbles, GI wire etc. which are essentially required for completing an item as per specification will be deemed to be included in the item even when the same have not been specifically mentioned.

All hardware items such as nuts/bolts/screws/washers etc. to be used in work shall be zinc/cadmium plated iron.

While laying conduit, suitable size junction boxes shall be provided for pulling the wire as per the decision of the E -in-C.

Materials to be used in work are to be ISI marked. The makes of the materials have been indicated in the list of preferred makes. No other makes will be acceptable. The materials to be used in the work shall be got approved by the Engineer in Charge/his representative before its use at site. The E-in-C shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not acceptable.
The power points 5 Amps and 16 Amps can be looped together as per CPWD specification. In single loop max 3 nos. 5 Amps power points can be looped. Max two nos. 16 Amp power points ca be looped. Geyser Point / Industrial Point shall have separate circuit wiring with 4.0 sq. mm. wire. For AC point wiring shall be 6 sq. mm.

All switches shall be modular type with approved makes and brand.

Switch for geyser point shall be provided outside the toilet & socket inside the toilet near geyser location both shall be of minimum Amps rating as mentioned in Tender Drawings.
The materials used in the work shall be of make as per List of preferred make and shall be approved by E-In-charge before execution.

The contractor shall have to work as per the convenience of the concerned Department.

The firm should submit the warranty against manufacturer defect for a period of 5 years from the date of completion of work for LED fittings and products from the manufacturer.
In the preferred makes of fitting model No. of one of the preferred make has been mentioned for guidance. However, the contractor is free to supply any one of the makes, provided the parameters of the fittings match with the fitting model No. mentioned in NIT. The decision of Engineer-in-charge shall be final in this regard.

The design, supply, installation, testing and commissioning of lightning protection of each building is in the scope of contractor. The design shall be done as per CPWD specifications Part 1 Internal 2023.
LED fittings as a whole including driver shall be guaranteed for 5 years. All the LED fittings shall be suitably engraved/ stickered inside, with for date of handing over.
The guarantee for LED fittings shall be submitted from the manufacturer in addition to the guarantee from the contractor. The manufacturer shall give undertaking that in case of discontinuation of model and non-availability of spares, they have to replace the fittings with equivalent/ high end model in case of manufacturing defect during the warranty period of 5 years.
The agency shall stand guarantee for at least 5 years of all the LED fittings and provide certificate from the manufacturer to attend the complaints for repairing / replacement directly from site of all LED fittings on the basis of complaints of defective LED fittings.

The defect liability period of all the wiring, cabling, equipments and components should be 12 (Twelve months) except specialized items of the work from the date of completion or handing over to the client whichever is later and all the LED fittings shall be guaranteed for a period of

5 years. Any defective materials and equipment shall be replaced free of cost at the direction of the Engineer-in-Charge.

Shop floor Conduit drawings and Shopfloor Single line diagrams are in the scope of work and should be prepared by the agency after award of work based on the Tender drawings and details provided in the tender.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.3 FORM- 'D' WILLINGNESS CERTIFICATE

From Concerned Competent Electrical Contractor
(Separate for each package of E&M work)

Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

I hereby give my willingness to work as associate contractor for electrical/ specialized work (Package Name DG Set, Fire Fighting & Fire Alarm System & Air Conditioning System) of the abovementioned work. I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-in-charge. Also, I will employ full time technically qualified supervisor for the works.

I will attend inspection of officers of the department as and when required.

Dated:

Signature of Main Contractor Signature of Associate Electrical Contractor

Name:

Agency Stamp:

Registration detail:

Address:

Telephone:

Mobile no:

Whatsapp No.:

e-mail:

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.4 MEMORANDUM OF UNDERSTANDING (MOU)

Name of Work: **Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**

I hereby give my willingness to work as associate contractor for electrical/ specialized work (Package Name DG Set, Fire Fighting & Fire Alarm System & Air Conditioning System) of 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.

Dated:

Signature of Main Contractor Signature of Associate Electrical Contractor

Name:

Agency Stamp:

Registration detail:

Address:

Telephone:

Mobile no:

Whatsapp No.:

e-mail:

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

MEMORANDUM OF UNDERSTANDING (MOU)

(Separate for each package of E&M work)

Name of Work: **Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.**

M/S [Name of the firm with full address] [Henceforth called the main Contractor And M/S [Name of the firm with full address] [Henceforth, called Associated Electrical Contractor or Electrical Contractor For the execution of Sub- Work / Package: DG Set, Fire Fighting & Fire Alarm System & Air Conditioning System

We state that M.O.U between us is agreed resolution to do work as per contract conditions. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows.

We have agreed as under:

Name of the Sub Head / Package:

Signature of main contractor	Signature of associated electrical contractor
Name:	Name:
Agency Stamp	Agency Stamp
Address:	Address:
Date:	Date:
Place:	Place:

Counter signed Executive Engineer

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

PROPOSAL FOR ASSOCIATING AGENCY FOR SPECIALIZED WORKS

I/we hereby propose the following agency for execution of specialized work component mentioned herein. Consent Letter from the proposed associated agency is enclosed.

Name of work : **Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun..**

(i) Component of Specialized Work : …….. ……..

(ii) Name of Associated Agency : ……. ……..

(iii) Details of Enlistment : ……. ……..

(iv) Category and Class of Enlistment : …….. ……..

(v) Monetary limit of work in Enlistment : ……. ……..

(vi) Validity of Enlistment : …….. ……..

(vii) Copy of Enlistment Order attached: (Yes /No)

(viii) Copy of electrical contractor license attached: (Yes /No)

(ix) Copy of completion certificates of similar work experience attached: (Yes /No)

(x) Copy GST Registration attached : (Yes/No)

(xi) Copy PAN Card Attached : (Yes/No)

(xii) Consent Letter of agency attached : (Yes/No)

Encls: Self Attested photocopies of as stated above

Seal & Signature of the Main Contractor

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

CONSENT LETTER FROM ASSOCIATE AGENCY FOR SPECIALIZED COMPONENT OF WORKS

Name of Work: Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

I / We hereby give my consent to associate with M/s ……, for executing the …… (mention category) specialized component of work.

I / We will execute the work as per specifications and conditions of the agreement for the work and as per directions of the Engineer-in-Charge for the said specialized component of work till the completion of the work.

I / We will be responsible for necessary action to handover the installations and for rectification of defects and repair during the maintenance / warranty period.

I / We will employ full time technically qualified Engineer / supervisor for the said specialized component of work as required for the work.

I / We will attend inspection of officers of the department as and when required.

Dated:

Seal & Signature of Associate Specilaized Agency

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.5 General Conditions of Internal Electrical Installations

1. The work shall be carried out as per CPWD specifications for Electric work.

2. Wiring for all E & M services shall be done in PVC/Steel recesses conduit and done by PVC insulated FRLS cable as per items in the schedule of work.

3. All mounting boxes for plate type accessories shall be of metallic construction and of the same make as that of the plate type switches and accessories. Mounting boxes should be as per CPWD specifications.

4. All internal electrical works shall be carried out with PVC/ Steel recess conduit. All switches, sockets, AC ON & OFF Starter, IP Phone socket, Data sockets, IP CCTV camera sockets, and accessories along with matching mounting boxes shall be of modular type. All modular switches, sockets, plates, other accessories shall be of same make and model.

5. Minimum size of copper conductor for power wiring/light plug wiring shall be 4 Sq. mm. multi strand with FRLS copper conductor cable and for light/fan points/exhaust fan/call bell point, wiring shall be done with 1.5 sq. mm. multi strand FRLS copper conductor cable.

6. Wiring for Intercom / Telephone shall be terminated in suitable size of G.I. Junction box with RJ45 socket (for IP phone). All the other end of wiring shall be terminated in the ELV (CCTV, WiFi LAN passive Networking), Racks. The wiring shall be suitably tagged/marked mentioning the location of each point. Wiring for both analogue & IP phone shall be done with cat-6A armoured UTP 4 pair cable.

7. Wiring of TV point shall be terminated in suitable size GI box and RG-6 socket by RG-6 cable.

8. All switches, sockets, Telephone socket, Data sockets, stepped type electronic fan regulators, bell push and accessories along with matching mounting boxes shall be of modular type and same shall be of one make.

9. There shall be shafts/cutout for Electrical works, ELV (CCTV, WiFi LAN passive Networking) Fire fighting works etc.

10. Light Fixtures and fans shall be provided **as per the light fixture details** attached in tender documents in conjunction with tender drawings.

11. Any other area specifically not mentioned above shall be given with lighting solution after approval from Engineer-in-charge.

12. Luminaire shall be 4000K to 6500 K layout as per direction of Engineer-in-Charge.

13. All suspended light fittings shall use suspension GI/SS wire and assembly either supplied by Light fitting manufacturer or by their recommended OEM/OEA.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

14. The size of ceiling fans shall be 1200 mm BLDC type with regulator on switchboard as desired by Engineer-in-charge during execution of work. Locations of fans should be as per tender drawings only. Minimum air delivery and service value shall be as per ECBC norms. Work should be executed as per Item mentioned in DSR-2025 (E&M) for BLDC Fan in Chapter 19.

15. Two-way switches which are shown in tender drawings shall be provided as per approved GFC drawing.

16. Wiring shall be done as per the approved GFCs, SLD and approved wiring layouts. Preparation of GFC drawing shall be done in accordance to CPWD specifications and as per direction of Engineer in Charge and no extra payment can be claimed by the contractor for the directions provided.

17. All the data points, telephone points, TV points, light points, fan points, exhaust fan points, two way points, power points, plug points etc. shall be executed as shown in Tender drawings only.

Note: - Any other item of works not mentioned above but required for functional requirement & Fit for use in respect of any Fitting, light point, power point, Passive LAN point, telephone point, TV point, exhaust fan, BLDC Ceiling fan, wall fan etc, same shall be provided as per approval of Engineer-in-charge.

18. LED Exit signages with battery backup shall be provided as per tender drawing/CPWD specification. All exit signage in staircases, lobbies, exit path and in critical areas shall be on UPS DB.

19. Inside the lift shaft there shall be arrangement of one light point with LED Bulk head fittings of suitable rating (minimum 800 lumens) shall be provided at each floor level end. All light points shall be in group controlled and wired with 1.5 sq. mm. FRLS copper conductor cable. 16- amp power plug shall also be provided at all floors with 4 sq. mm. FRLS copper wiring. In lift shaft, all 16 Amp power point shall be on single loop.

20. All Cables in Electrical Room, Panel rooms, ELV areas, Shafts shall be laid on cable trays keeping in consideration for additional provision for accommodating approx. 25% of existing capacity of all such cable trays for future provision. Minimum width of cable try shall not be less than 150 mm.

21. Cable tray shall be provided as per tender drawing or below mentioned specifications as per the direction of Engineer-in charge.

22. Such cable tray in Electrical Room, Panel Rooms, ELV area shall be hot dipped GI as per direction of E-in-C. Proper factory-made TEE, Bend, elbows, cross, joints and other accessories shall be used. Perforated Hot Dipped Galvanised Iron (galvanisation thickness i.e. average mass of Zinc coating shall not be less than 65 microns for 2 mm thick & 50 microns for 1.6 mm thick as per IS standard) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts &nuts, etc. as required. Suitable size as per site conditions shall be used with thickness 1.6 mm for cable trays with width≤ 300 mm & thickness 2 mm for cable trays with width > 300mm.

23. AL/ Cu XLPE cables shall be use for power distribution in all buildings as shown in provided Tender drawings or in approved shop floor drawings (where ever details are not provided in tender drawings) as per CPWD specifications. Earth wires should be laid along with cables as per CPWD Specifications.

24. Make of MCB/MCCB shall be the same as the make of MCB/MCCB DB (in that particular DB).

25. The work shall be carried out according to approved GFC drawings and details, which shall be prepared by the Contractor on the basis of Tender Drawings and details provided in tender for execution, in stages as per instruction of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.

26. All hardware items such as screws, thimbles, connectors, earth/neutral terminals, wires etc. which are essentially required for completing any item as per specifications will be deemed to have been included in the item even when the same have not been specifically mentioned.

27. All hardware material such as nuts/bolts/screws/washers etc. to be used in the work shall be zinc/cadmium plated iron. The galvanized boxes of modular switch/sockets etc. shall be of the same make as of switch/socket etc.

28. While laying conduit, suitable minimum number of junction boxes shall be left for pulling the wires. These shall be placed in such a way that the same do not remain noticeable.

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

30. Multi stranded FRLS PVC insulated copper conductors wires are to be used in the work. Termination of multi-stranded conductors shall be done using crimping type copper thimbles at both the ends. Nothing extra shall be paid for the same.

31. The contractor shall follow the shortest route for circuits, submain, point wiring etc.

32. The connections of switches, sensors, earthing conductors & interconnections cables shall be made by adequate rating thimbles of approved standard makes only and nothing extra on this account shall be paid.

33. Check nuts shall be provided while terminating the M.S. conduits in switch board boxes for which nothing extra shall be paid.

34. All distribution boards shall be marked with circuits controlling the rooms/area/SDB controlled.

35. Material to be used in the work shall be ISI marked. The makes of material have been indicated in the list of acceptable makes. No other make will be acceptable. The material to be used in the work shall be got approved from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to

instruct the contractor to remove the material which, in his opinion, is not as per specifications

36. While deciding the size of switch boxes for light points/fan point, exhaust fan point items, extra two modules will be provided for each fan point for fixing of regulator(s) (fan regulator is to be provided under different item). Wherever extra modules are available, the same shall be provided with blanking plates without any extra cost.

37. Modular type switches/sockets/telephone outlets/TV sockets are to be provided wherever indicated in the items. The same shall be of only one make. The modular plates of switches, sockets, telephone & TV sockets etc. shall be in two parts i.e. plates with frames with in quoted rates.

38. The building shall be provided with false ceiling in various areas. In order to avoid maintenance problem the contractor will not provide any ceiling rose/connector/looping box etc. above the false ceiling. The point wiring in that case will be extended up to the fitting/fan etc. directly without provisions of any termination arrangement in between. The wire from the end point up to the fixture shall be considered to be included in the point wiring. Nothing extra shall be paid for the same.

39. Wherever it is not possible to provide rigid conduits, flexible conduit pipe shall be provided for drawing/running the wires. However, such arrangement has to be kept to the barest minimum and only with the prior approval of Engineer-in-charge.

40. Earthing and all hidden items of work shall be carried out in the presence of the Engineer-in-charge or his authorized representative.

41. The fan box cover shall be made from 3mm thick phenolic laminated sheet as per CPWD specification.

42. The contractor shall provide only metallic junction boxes/looping boxes with cover of required sizes even in PVC conduiting and such boxes shall be measured as a part of conduit/wiring without any extra payment.

43. The metallic junction boxes & looping boxes shall be covered with approved makes of phenolic laminated sheet. For telephone, television & fire alarm system shall be provided at all the floors with in scope of work without any extra cost as per requirement & layout approved by Engineer-in-charge.

44. The firm has to go through the site order book kept with the Junior Engineer (E) regularly and has to sign the same and carryout the instructions recorded therein by various officers of the department.

45. The quantities of various items may vary from the quantities given in schedule of work. The agency shall bring the various items & materials as per actual requirement at site at the time of execution of work. Excess quantities shall not be accepted & paid by the department.

46. The ceiling roses wherever required to be provided are included in the scope of work without extra payment and the same shall also be of modular type & of the same make as that of switches & sockets alongwith earthing provision.

47. The MCB should be of same make as that of MCB DBs.

48. The MCB distribution boards shall be factory fabricated in the works of the manufacturer of the MCB's of any of the makes specified and the same shall be duly pre-wired in the works. The board shall be brought to site in ready for installation condition. The MCBs and the MCB distribution board shall be of the same make.

49. MCCB should have centrally adjustable overload setting 80% to 100% & short circuit setting adjustable from 500% to 1000% of nominal current for thermal type & overload setting 40% to 100% & short circuit setting adjustable from 150% to 1000% of nominal current for microprocessor type MCCB. All MCCB should be ICS=ICU.

50. Suitable crimping tools shall be used for crimping the lugs/thimbles/ferrules. Nothing extra shall be paid on this account. The lugs/thimbles/ferrules pressed by conventional/ordinary pliers shall not be accepted.

51. All the LED fittings shall be guarantee/warrantee for a period of 5 years.

52. The work shall be under one year defect liability from the date of completion of work. During this period all the defects shall be made good by the agency free of cost.

53. Payment shall be made after submission of Guarantee/warranty of five years from the OEM of LED fittings.

54. All the bidders are advised to visit the site before quoting their rates and in case of any anomaly in the BOQ may be brought to the notice of this office no later claim shall be entertained.

55. Public Procurement (Preference to Make in India) orders 2017 issued by competent authority of Government of India shall be implemented during selection of materials and execution of work accordingly. Any Manufacturer if not included in the approved make list, may be considered by the Engineer-in-Charge provided such manufacturers comply the above policy along with their product meeting the specifications and other details of the required item.

56. All the material supplied by the Agency should be in line with the Make in India guidelines, if there are some makes fulfilling the specifications & Make in India guidelines, then same should be brought to the notice of this office for necessary action.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL

AE(P) C	AE (P) E	EE (P)

6.6 TECHNICAL SPECIFICATIONS OF INTERNAL ELECTRICAL INSTALLATION

1.0 All the works shall be carried out as per CPWD General specification for Electrical Works, Part-I (Internal) 2023 & Part-II (External) 2023, DG Set 2013,Fire detection & Alarm system 2018, Sub-station 2013, HVAC 2017amended up to date and should also comply with relevant provisions of the Indian Electricity Rules and Acts as applicable, amended up to date.

2.0 The contractor is advised to visit the site of work to have an idea of the execution of the work; failure to do so shall not absolve their responsibility to do the work as specified in agreement.

3.0 **Rates:**

3.1. The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work (except the materials, if any, stipulated for supply by the department) inclusive of all taxes (including works contract tax, if any), duties, and levies etc. and all charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contractor, watch and ward of all materials (including those supplied by the department, if any) for the work at site etc

3.2. Prices quoted shall be firm.

4.0 **Taxes and Duties:**

4.1. Rates are inclusive of GST and all other Taxes, duties, levies and royalties and nothing extra shall be payable to the contractor on account of this.

4.2. The GST shall be deducted from the bills of the contractor as applicable in at the time of payments.

5.0 **Mobilization Advance:**

No mobilization advance shall be paid for the work, unless otherwise stipulated in tender papers for any individual works/ composite work.

6.0 **Completeness of Tender:**

All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.

7.0 **Works to be arranged by the department:**

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

(i) Supply of materials to the contractor if stipulated in the tender documents.

8.0 **Works to be done by the contractor:**

Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost:-

(i) Foundations for equipment and components where required, including foundations bolts.

(ii) Cutting and making good all damages caused during installation and restoring the same to their original finish.

(iii) Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.

(iv) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/distribution gear items, cubical switchboard etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.

(v) Testing and commissioning of completed installation.

(vi) Storage space for all equipment, components and materials for the work

9.0 **Storage and Custody of Materials:**

The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the electrical installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space shall however be arranged by the department at site, if available.

The main contractor shall arrange for proper storage of the electrical fans and fittings at site and that double lock system shall be arranged for the fans and fittings after receipt at site until the time they are taken for installation. The contractor shall however be responsible for proper storage and safe custody of the same till their installation and handing over to the department.

10.0 **Electric Power Supply and Water Supply:**

Power and water supply will be arranged by the contractor at the site for installation purpose.

However, for final testing purpose after complete installation of the electrical items, electricity supply will be made available free of cost to the contractor. Contractor will take due care to ensure safety of electrical installation during execution of work.

11.0 **Tools for handling and Erecting:**

All tools and tackles required for handling of equipment and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

12.0 **Payment Terms:**

Payment shall be made as per the relevant clauses of form PWD 7/8 forming part of the tender documents.

13.0 **Co-ordination with other agencies:**

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

13.1. **Care of buildings:**

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

14.0 **Structural Alterations to Buildings:**

(i) No structural member in the building shall be damaged/altered, without prior approval from the competent authority through the Engineer-n-charge.

(ii) Structural provisions like openings, cutouts, if any, provided by the department for the work, shall be used. Where these required modifications, or fresh provisions are required to be made, such contingent works shall be carried out by the contract at his cost.

(iii) All such openings in floors provided by the department shall be closed by the contractor after installing the cables/conduits/rising mains etc. as the case may be, by any suitable means as approved by the Engineer-in-charge without any extra payment.

(iv) All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost to the original architectural finish of the buildings.

15.0 **Addition to an installation:**

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

16.0 **Work in occupied buildings:**

(i) When work is executed in occupied buildings, there would be minimum of inconvenience to the occupants. The work shall be programmed in consultation with the Engineer-in-charge and the occupying department. If so required, the work may have to be done even before and after the office hours.

(ii) The contractor shall be responsible to abide by the regulations or restrictions set in regard to entry into, and movement within the premises.

(iii) The contractor shall not tamper with any of the existing installations including their switching operations or connections there to without specific approval from the Engineer-in-charge.

17.0 **Drawings:**

(i) The work shall be carried out in accordance with the drawings and the tender documents and also in accordance with modification thereto from time to time as approved by the Engineer-in-charge.

(ii) All wiring diagrams shall be deemed to be 'Drawings' within the meaning of the term as used in Clause 11 of the conditions of contract (PWD 7 or PWD 8). They shall indicate the main switch board, the distribution boards (with circuit numbers controlled by them), the runs of various mains and sub mains and the position of all points with their controls.

(iii) After award of the work, the firm will be required to submit the drawings for the proposed work including layout plan, conduit routes showing location of points and height etc. Work will be carried out as per the approved drawings before start of work.

18.0 **Conformity to IE act, IE Rules, and standards:**

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

19.0 **General requirements of components:**

19.1. **Quality of material:** All materials and equipment supplied by the contractor shall be new. The materials shall satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

20.0 **Inspection of materials and equipment:**

20.1. Materials and equipment to be used in the work shall be inspected by the departmental officers. Such inspection will be of following categories:

(i) Inspection of materials / equipment to be witnessed at the Manufacturer's premises in accordance with relevant BIS /Agreement Inspection Procedure.

(ii) To receive materials at site with Manufacturer's Test Certificate(s)

(iii) To inspect materials at the authorized dealer's go downs to ensure delivery of genuine materials at site.

(iv) To receive materials after physical inspection at site.

20.2. Adequate care to ensure that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall ensure that:

(i) Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.

(ii) As and when the order is placed for the fittings/ fixtures, cables, switchgears, poles, rising main, other main items etc., its copy shall be endorsed to the CPWD Engineer-in-charge.

(iii) The firm will be required to procure material like exhaust fans, MCB's & DB's, switches & sockets, wires & cables, conduits and switchgears etc directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor before installation at site to the department.

(iv) Inspection at factory or at godown of the manufacturer, as required, shall be arranged by the firm for a mutually agreed date. Certificate for genuineness of the fittings shall have to provided duly signed by the manufacturer's officer not below the rank of Regional Manager.

(v) Delivery of material shall be taken up only with the consent of department, after clearance of the material.

(vi) Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.

20.3. Similarly, 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.

21.0 **Ratings of components:**

21.1. All components in a wiring installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installations in which they are used.

21.2. All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current, which will normally flow through them, without their respective ratings being exceeded.

22.0 **Conformity to standards:**

22.1. All components shall confirm to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.

22.2. Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance.

23.0 **Interchangeability:**

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

24.0 **Workmanship:**

24.1. Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall confirm to sound engineering practice.

24.2. Proper supervision/skilled workmen: The contractor shall be a licensed electrical contractor of appropriate class suitable for execution of the electrical work. He shall engage suitably skilled/licensed workmen of various categories for execution of work supervised by supervisors / Engineer of appropriate qualification and experience to ensure proper execution of work. They will carry out instruction of Engineer-in-charge and other senior officers of the Department during the progress of work.

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

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

25.0 **Testing:**

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

26.0 **Commissioning on completion:**

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

27.0 **Guarantee**

The installation will be handed over to the department after necessary testing and commissioning. The installation will be guaranteed against any defective workmanship. Similarly, the materials supplied by the contractor will be guaranteed against any manufacturing defect, inferior quality. The defect liability period of all the wiring, cabling, equipments and components should be 12 (Twelve months) except specialized items of the work from the date of completion or handing over to the client whichever is later and all the LED fittings shall be guaranteed for a period of 5 years. The firm will be required to submit guarantee of material from the manufacturer to the department.

Note : The quantity of material in the BOQ is indicative. Contractor has to assess the actual requirement of material at site before placing the order, keeping in view the drawing and site requirement from the shortest route. No claim for payment for unused excess material shall be entertained.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

28.0 Internal Wiring

Execution of work as per all related items under chapter 1, wiring of DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, approved MEP services drawings for internal).

29.0 MCCB, MCB & DB'S

Execution of work as per all related items under chapter 2, MCCB, MCB, DBs DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings for internal).

30.0 Earthing

Execution of work as per all related items under chapter 5, Earthing DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings).

31.0 Lightning Arrestor & Conductor

Execution of work as per all related items under chapter 6 Lightning Arrestor & Conductor DSR-2025 (E&M) and non-schedule items as per detailed item specification (if any) including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings)

32.0 Light Fixtures and Fans

Execution of work as per all related items under DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings for internal)

33.0 MV Cabling

Execution of work as per all related items under chapter 7 MV Cabling DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings for internal)

34.0 MV Cable end Termination & Jointing

Execution of work as per all related items under chapter 9 MV Cable end Termination & Jointing DSR-2025 (E&M) and non-schedule items if any including all leads, lifts & heights under complete scope of work as shown in drawings (architectural drawings, MEP services drawings for internal)

35.0 EARTHING

Earthing: Earthing's should be done in accordance with CPWD specifications. All the linear items and non-linear items required for providing earthlings as per tender drawings is in the scope of work of contractor. Items should be selected as mentioned

in Item nomenclature i.e. Items in Chapter Earthing DSR-2025 (E&M). All the items including earthing stations, earthing strip copper, GI Strips/Wire, other hardware, chamber etc required for complete installation of earthing as per the tender drawing under the scope of work.

36.0 Additional Condition for LED Luminaires

a. All the LED luminaires indoor or outdoor should be BIS certified.
b. The manufacturer name, logo and fitting model no. need to be embossed on luminaires. If embossing is not possible due to technical reasons, then printing shall also be acceptable. However, sticker for make, model or logo not acceptable at all.
c. All test certificates as mentioned above alongwith manufacturers catalogue (Make and Model) shall be submitted for approval.
d. Material shall be supplied on site only after getting approval from competent authority.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.7 LIST OF PREFERRED MAKES

The contractor shall obtain prior approval from the Engineer-in-Charge before placing order for any specific material. The contractor shall make a detailed submittal with catalogues and highlighted proposed specification.

S. No.	Item	Name of Manufacturers
Internal E.I and Fans		
1	FRLS PVC ins. Copper cond. Single core cable for wiring (ISI marked)	Finolex/ RR Kabel/ KEl/ Havells/ Polycab/ Grandlay/AKG/Bonton/Rallison/ Plaza Cables/HPL/Pi Square/Orient/Agilon
2	MS Conduit (ISI marked • with heavy duty MS Conduit pipe accessories.	BEC/ NIC/ AKG/ RMCON/ Steel kraft/Polycabe/PCG (Note:- the make of accessories shall be same that of conduit pipe & will comply to IS/4768 part2 2003)
3	PVC Conduit (IS marked) with heavy duty PVC Conduit pipe accessories.	AKG/ norpack/ BEC/ Polypack/ Precision/SFMC/PCG
4	DLP cable Management	Legrand/Havells/Polycab/Finolax/KEI/Great white/ R.P controls
5	Ammeter	Rishabh/ LK (FORMER KNOWN AS L&T)/ AEl C&S/ HPL
6	Voltmeter	Rishabh/ LK (FORMER KNOWN AS L&T)/ AEl C&S/ HPL
7	Modular Switch, Socket Telephone socket/' cable TV Socket/ Data outlet socket/ Fan Regulator/ G.I. Boxes Etc (Wiring Accessories) Regulators etc.	Legrand (Arteor) / Schneider Electric (Zencilo) / Wipro(North West)/ Hager (Insyta) / Honeywell /Havells (Murano) / Anchor by Panasonic (Vision)/LK (FORMER KNOWN AS L&T)/HPL/Orient
8	Call Bell	Anchor/Havells/Legrand/Cona
9	Ceiling Rose	Anchor by Panasonic/Havells/Legrand/Cona
10	Armoured/ Unarmoured: telephone cable, coaxial cable	Delton/Finolex/ RR Kabel/ Havells/Bonton/ Rallison/ Plaza Cables/Agilon
11	Cat-6 cable & Fiber optic cable	Amp. Avaya/Beldon/Legrand/Molex/ Schneider/Bonto/ Rallison/ Plaza Cables/Agilon
12	MCB, Isolator, Industrial Plug socket, RCCB, RCBO's	Schneider Electric / Legrand/ Hager/ LK (FORMER KNOWN AS L&T)/ ABB/ Seimens/Havells/HPL/Orient
13	MCB DB & Loose wire Box	Schneider Electric NSX series/ Legrand(DPX3)/ LAURITZ KNUDSEN (Formerly L&T)(D-Sine)/ ABB(TMax)/ Seimens(VLseries)/ C&S(Winbreak-1/2)/Havells/HPL/Orient

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

14	Modular case circuit Breaker (MCCB) Thermal release/Microprocessor based (Ics=Icu=100%)	Schneider Electric / Legrand/ LK (FORMER KNOWN AS L&T)/ ABB/ Seimens/ C&S)/HPL/Orient
15	LED Fittings	Wipro/ Phillips/ Crompton Greaves/ Havells/ Trilux/ Lighting Technology/HPL/Orient/Jaquar
16	Lamps/ Fluorescent Tubes/ T5 Fluorescent Tubes/ LED Lamp	Wipro/ Phillips/ Crompton Greaves / Havells/ Osram/Jaquar/ Surya/HPL/Orient
17	LED Wall Bracket fitting	Havells/ Crompton Greaves/ Decon/ Phillips/ Lighting Technology /Luster/ Jaquar
18	BLDC Fans/Ceiling fans/wall fans	Atomberg / Panasonic/ Orient / Havells / Crompton/ Bajaj
19	Heavy Duty Exhaust Fan/Exhaust Fan/Fresh Air Fan	Havells/ Crompton Greaves/ Usha/ Almonard/ Orient / Bajaj
20	Geysers	Racold/Havells/ Usha/Venus/ AO Smith/ Crompton Greaves/Bajaj/Orient
EXTERNAL EI		
1	Hot Dipped Galvanized Octogonal Pole (Factory Finish with base plate)	Valmont/ Wipro/ Phillips/ Crompton Greaves/ Bajaj/ Paruthi Engineers Pvt. Ltd. /Salasar/Orient
2	Decorative Street Light Pole	Bajaj/Phllips/Crompton Greaves/Jindal/Valmount Structures/Surya Roshni/Orient
3	Hi Mast Pole	Bajaj / Phillips/ Paruthi Engineers Pvt. Ltd / Valmont/ Wipro/Crompton Greaves/Orient
4	GI Pole	Kasper Engineering Private Limited/Bajaj/Phillips
5	MS / GI Cable tray	Pilco/ Slotco/Pasco/ MEM/ BEC/Steelways/Legrand/RMCON/R.P controls
6	LED Street / Flood Light fitting	Wipro/ Phillips/ Crompton Greaves/ Havells/ /Lighting Technology/HPL/Orient
7	LED Post Top fitting	Wipro/ Phillips/ Crompton Greaves/ Havells/ /Lighting Technology/Luster/Twinkle/Orient
8	Pole Junction box	Hensel/ Spelsberg/ Neptune-bals/Sintex
9	LT Panel / Cubical Panel/Meter panel board/Outdoor Feeder Phillar APFC Panels / Bus Ducts	Tricolite Electrical Industries/ Control & Switchgears Pvt. Ltd./ Sterling & Wilson/ Milestone/ Adlec control systems Pvt. Ltd./Advance Panels & Switchgears Pvt. Ltd./ Indo Asian/ Pristine/ASPL (Associated Switchgear Power Ltd.)/ Transcom Power Pvt. Ltd./LK (FORMER KNOWN AS L&T)/KEPL/Precision system Control/ R.P controls /Alcorn/ ASES/Orient/ Ankit Electricals
10	LED type indicating lamp/ Push Button	Schneider Electric / LK (FORMER KNOWN AS L&T)/ Seimens/ C&S/Vaishno

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

11	Analogue/ Digital Measuring Instruments (Voltmeer/ Ammeter/ Enrgy meter KW/ PE/ Multi Function meter)	AE/ Rishabh/ LK (FORMER KNOWN AS L&T)/ C&S/ Conzerve/HPL
12	XLPE insulated PVC Sheathed Alum. / Copper conductor Armored cable of 1.1 KV grade	RR Kabel /KEI/Havells/Polycab/GRANDLAY/ Finolex/AKG/Bonton/ Rallison/ Plaza Cables/ Pi Square
13	D.W. Corrugated HDPE pipe (ISI marked)	Rex/ Duraplast/ Triputi/ Duraline/SFMC
14	Cable glands & Lugs	Comet/ Dowells/ Hax Brass (copper Alloy India)/ Gripwell/Cosmos
15	Polycarbonate Junction box/ Enclosure	Hensel/ Spelsberg/ Neptune-bals/Sintex
16	Power Supply / LED /LED Drivers of LED Signage	Philips / Osram / Tridonic / Nichea / Samsung / ASES/ LG/ EKAVIS
17	PVC Trunking	MK/Schneider Electric / Legrand.
18	MS, ERW Black & GI pipe	Tata / Jindal(Hissar)/ Prakash Surya/Consoul.
19	Terminal Block & Connectors	Elmex/ Wago/ Hensel/ Connectwell
20	Phenolic laminated sheet/ Bakelite sheet	Hylem/ Formica(P-I grade)/ Mylam/ Greenlam.

Note:

- **CE, Dehradun reserves the right to add any IS make/brand of Make In India in the list of preferred makes/brands (provided technical specifications of MII make/brand matches with specifications of the item), on the recommendations of Engineer-in-charge.**
- **CE, Dehradun reserves the right to delete any makes/brands if technical specifications of the makes/brands do not match with specifications of the item, on the recommendations of Engineer-in-charge.**

6.9 GUARANTEE BONDS FOR VARIOUS ITEMS

The contractor shall be duly responsible for and shall guarantee for proper performance of the following items for the specified period of years from the date of completion of the work: -

Sl No.	Item	Gross Value of work done (Rs.)	Remarks (Guarentee period)
5.	All Types of Light Fittings	As per execution	**Two percent** of the gross value of work done against these items, shall be retained as security deposit **for 5(Five) years***

Note:

The amount so withheld would be released after **the years* so specifiedto be reckoned** after the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defects are noticed during the guarantee period, it shall be rectified by the contractor within **seven** days of receipt of intimation of defects in the work. If the defects as pointed out are not attended by the contractor within the specified period, the same will be got rectified from another Contractor at the risk and cost of contractor.

However, the security deposit deducted may be released as per Schedule-F by Engineer-in-charge. The Security deposit against these items of work shall be in addition to the security deposit mentioned else where in contract form.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-VIII

6.10 TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF ALL TYPES OF LIGHT FITTINGS

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

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

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing and unsound materials and other related problems.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable after the expiry of defect liability period prescribed in the contract for the minimum life of **5(Five)** years to be reckonedafter the date of completion of the work.

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

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

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

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

1. _____ 2. _____

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

1. _____
2. _____

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.10 Completion plan and completion certificate (E & M Works)

1. For all works completion certificate after completion of work shall be submitted to the Engineer-in-charge.
2. Completion plan shall submitted alongwith following:

   (i) Warrenty card of materials (catalogue no.) and equipments.

   (ii) Guarantee bonds.

   (iii) NOC as required for statutory/ local body permissions/approvals.

   Note: The fee payable to local body shall be reimbursed to the agency on the actual basis after submission of proof of fee paid by agency to the Engineer-in-charge for such local body approvals.

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

7.0
PART-D

FINANCIAL BID

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

Annexure-IX

7.1 Schedule of Quantities For Civil and E&M Works

A. SCHEDULE OF QUANTITIES OF CIVIL WORKS

Name of Work:- Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.

Sl. No.	Description	Qty	Unit	Rate (Rs.)	Amount (Rs.)
1	**SH : 1 CEMENT CONCRETE**				
1.1	Providing and laying in position excluding cement concrete of level: specified grade the cost of centering and shuttering - All work up to plinth				
1.1.1	1:5:10 (1 cement : 5 coarse sand (zone-lll) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	41.00	cum	6850.01	280850.00
	Total SH : 1			**280850.00**	
2	**SH : 2 CLADDING WORK**				
2.1	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.				
2.1.1	Granite Stone of approved shade	11.00	sqm	4257.85	46836.00
	Total SH : 2			**46836.00**	
3	**SH : 3 WOOD AND P. V. C. WORK**				
3.1	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
3.1.1	300x16 mm	36.00	each	318.66	11472.00
3.2	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
3.2.1	150x10 mm	71.00	each	86.75	6159.00
3.3	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.				
3.3.1	Single rubber stopper	72.00	each	41.61	2996.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

3.4	Providing and fixing factory made Fiberglass Reinforced plastics (F.R.P.) chajja 4 mm thick of required colour, size and design made by Resin Transfer Moulding (RTM) Machine Technology, resulting in void free compact laminate in single piece, having smooth gradual slope curvature for easy drainage of water and duly reinforced by 2 nos vertically and 1 nos horizontally 50x2 mm thick M.S. flat with 12 mm in built hole for grouting on the existing wall along with the 50 mm flanges duly inserted and sealed in the wall complete in one single piece casted monolithically,including all necessary fittings . The FRP Chajja should be manufactured using unsaturated Polyester resin as per IS: 6746, duly reinforced with fibre glass chopped strand mat (CSM) as per IS: 11551 complete with protective Gel coat U/V coating on Top for complete resistance from the extreme of temperature, weather & sunlight (Only plan area of chajjas shall be measured for making payment).	36.00	sqm	5472.20	196999.00
	Total SH : 3			**217626.00**	
4	**SH : 4 STEEL WORK**				
4.1	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	630.00	kg	140.50	88515.00
4.2	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete.				
4.2.1	Stainless steel (grade 304) wire gauze of 0.5 mm dia wire and 1.4 mm aperture on both sides	296.00	sqm	1191.18	352589.00
	Total SH : 4			**441104.00**	
5	**SH : 5 FLOORING**				
5.1	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
5.1.1	Ordinary cement without any pigment	91.00	sqm	1110.06	101015.00
5.2	Providing and laying double charged/GVT/Full body Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
5.2.1	Double charged/GVT/Full body Vitrified tiles Matt/Antiskid finish of size				
5.2.1.1	Size of Tile 600 x 600 mm	291.00	sqm	1539.32	447942.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

5.3	Providing and laying double charged/GVT/Full body Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/sqm including grouting the joint with white cement & matching pigments etc. complete.				
5.3.1	Size of tile 600x1200 mm	772.00	sqm	1705.57	1316700.00
	Total SH : 5			**1865657.00**	
6	**SH : 6 FINISHING**				
6.1	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour :				
6.1.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram/litre	3034.00	sqm	195.09	591903.00
6.2	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	3034.00	sqm	163.99	497546.00
6.3	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				
6.3.1	Old work (one or more coats)	5737.00	sqm	65.89	378011.00
6.4	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	3034.00	sqm	26.43	80189.00
6.5	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:				
6.5.1	One or more coats on old work	1578.00	sqm	108.02	170456.00
6.6	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade				
6.6.1	Old work (one or more coats applied @ 0.83 ltr/10 sqm).	6800.00	sqm	93.05	632740.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

6.7	Providing and applying Self Curing/Curing Free Ready-Mix Plaster of approved brand and manufacture, having minimum compressive Strength of 6 OMPa, of specified thickness in one coat on new/old surface of walls/ceiling, using factory produced. pre-blended, premixed, formulated Self Curing/Curing Free ready- mix mortar supplied in dry form requiring only the addition of water at the site before start of application. The material shall have self-curing properties eliminating the need for post-application of water (curing). The ambient temperature at the time of application should not exceed 40 Celsius * It should be applied on hacked/uneven background such as bare brick/CC and Block/RCC surface after preparation of surface etc. complete, including applying Portland cement slurry @0.40Kg/Sqm, as per manufacturer's specification finished in smooth line and level at locations and all floors_ • In case, ambient temperature exceeds 40C, manufacturer's specification may be followed.				
6.7.1	6 mm thick	548.00	sqm	330.64	181191.00
6.7.2	15 mm thick	1127.00	sqm	633.34	713774.00
	Total SH : 6			**3245810.00**	
7	**SH : 7 REPAIRS TO BUILDING**				
7.1	Renewing glass panes, with putty and nails wherever necessary including racking out the old putty:				
7.1.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	20.00	sqm	1146.10	22922.00
7.2	Supplying and fixing new wooden fillets wherever necessary:				
7.2.1	Hollock wood fillets	35.00	metre	74.35	2602.00
7.3	Dismantling 15 to 40 mm dia G.I. pipe including stacking of dismantled pipes (within 50 metres lead) as per direction of Engineer-in-Charge.	150.00	metre	3.41	512.00
7.4	Taking out existing wooden door shutter, repair by cutting, painting etc. and refixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	36.00	each	450.91	16233.00
	Total SH : 7			**42269.00**	
8	**SH : 8 Dismantling and Demolishing**				
8.1	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
8.1.1	For thickness of tiles 10 mm to 25 mm	1063.00	sqm	77.13	81989.00
8.2	Dismantling of flushing cistern of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	15.00	each	117.74	1766.00
8.3	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	548.00	sqm	57.42	31466.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

8.4	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	330.00	cum	277.37	91532.00
	Total SH : 8			**206753.00**	
9	**SH : 9 Road Work**				
9.1	Providing and laying matt finished vitrified tile of size 300x300x9.8 mm having with water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20 mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	277.00	sqm	1529.66	423716.00
	Total SH : 9			**423716.00**	
10	**SH : 10 SANITARY INSTALLATIONS**				
10.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
10.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	33.00	each	7111.45	234678.00
10.2	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :				
10.2.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	20.00	each	12685.47	253709.00
10.3	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
10.3.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	57.00	each	2783.52	158661.00
10.4	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings.	57.00	each	1768.93	100829.00
10.5	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

10.5.1	Flexible pipe				
10.5.1.1	32 mm dia	57.00	each	125.63	7161.00
10.6	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :				
10.6.1	Rectangular shape 1500x450 mm	22.00	each	2199.41	48387.00
10.7	Providing and fixing toilet paper holder :				
10.7.1	C.P. brass	3.00	each	844.56	2534.00
10.8	Providing and fixing soil, waste and vent pipes :				
10.8.1	100 mm dia				
10.8.1.1	Sand cast iron S&S pipe as per IS : 1729	200.00	metre	1210.46	242092.00
10.9	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
10.9.1	100 mm dia				
10.9.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	24.00	each	596.04	14305.00
10.10	Providing and fixing plain bend of required degree.				
10.10.1	100 mm dia				
10.10.1.1	Sand cast iron S&S as per IS - 1729	24.00	each	494.37	11865.00
10.11	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
10.11.1	100x100x100 mm				
10.11.1.1	Sand cast iron S&S as per IS - 3989	18.00	each	972.77	17510.00
10.12	Providing and fixing single equal plain junction of required degree :				
10.12.1	100x100x100 mm				
10.12.1.1	Sand cast iron S&S as per IS - 3989	30.00	each	853.18	25595.00
10.13	Providing and fixing terminal guard :				
10.13.1	100 mm				
10.13.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	18.00	each	449.55	8092.00
10.14	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :				
10.14.1	100 mm inlet and 100 mm outlet				
10.14.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	36.00	each	898.00	32328.00
10.15	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.	57.00	each	176.90	10083.00
10.16	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms	3.00	each	243.75	731.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

10.17	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.				
10.17.1	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	3.00	each	744.99	2235.00
10.18	Providing and fixing PTMT shelf 440 mm long, 124 mm width and 36 mm height of approved quality and colour, weighing not less than 300 gms.	3.00	each	749.46	2248.00
10.19	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.	3.00	each	15761.70	47285.00
10.20	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	4.00	each	8384.86	33539.00
	Total SH : 10			**1253867.00**	
11	**SH : 11 WATER SUPPLY**				
11.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes,having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
11.1.1	15 mm nominal dia Pipe	75.00	metre	523.11	39233.00
11.1.2	20 mm nominal dia Pipe	105.00	metre	564.93	59318.00
11.1.3	25 mm nominal dia Pipes	72.00	metre	659.13	47457.00
11.2	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :				
11.2.1	25 to 40 mm nominal bore	12.00	each	958.26	11499.00
11.3	Providing and fixing uplasticised PVC connection pipe with brass unions :				
11.3.1	30 cm length				
11.3.1.1	20 mm nominal bore	36.00	each	98.30	3539.00
	Total SH : 11			**161046.00**	
12	**SH : 12 WATER PROOFING**				
12.1	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :				

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

	(a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours.				
	(b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours.				
	The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	47.00	sqm	648.42	30476.00
12.2	Providing and applying fibre reinforced elastomeric liquid water proofing membrane with resilient acrylic polymers having Sun Reflectivity Index (SRI) of 105 on top of concrete roof in three coats @10.76 litre/ 10 sqm. One coat of self-priming of elastomeric waterproofing liquid (dilution with water in the ratio of 3:1) and two coats of undiluted elastomeric waterproofing liquid (dry film thickness of complete application/system not less than 500 microns). The operation shall be carried out after scrapping and properly cleaning the surface to remove loose particles with wire brushes, complete in all respect as per the direction of Engineerin- Charge.	2839.00	sqm	591.73	1679921.00
	Total SH : 12			**1710397.00**	
13	**SH : 13 CONSERVATION OF HERITAGE BUILDINGS**				
13.1	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40 mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc, wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. Note:- (1) The elevational area of the scaffolding shall be measured for payment purpose. (2) The payment will be made once only for execution of all items for such works.	2468.00	sqm	355.45	877251.00
	Total SH : 13			**877251.00**	
14	**SH : 14 NEW TECHNOLOGIES AND MATERIALS**				

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

14.1	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge				
14.1.1	50 mm average thickness	451.00	sqm	269.38	121490.00
14.1.2	25 mm average thickness	676.00	sqm	133.20	90043.00
14.2	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge.				
14.2.1	Bars upto 12 mm diameter	200.00	metre	8.67	1734.00
14.3	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer- In-charge complete in all respect.				
14.3.1	SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer	1127.00	sqm	148.38	167224.00
14.4	Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75 mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm2).				
14.4.1	25 mm average thickness in 2 layers.	676.00	sqm	617.21	417234.00
14.4.2	50 mm average thickness in 3 layers	451.00	sqm	1234.42	556723.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

14.5	Providing and laying SBR Polymer modified (of approved make @ minimum 2% by wt. of cement used) plain/reinforced concrete jacket for the structural members e.g. columns, pillars, piers, beams etc with concrete having the specified minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10 mm maximum size in proportion as per design criteria] with specified average thickness all-round existing core of RCC member. Note: Rates shall be for finished surface area of concrete and shall include the cost of making holes in existing RCC slab, if required, for pouring concrete in shuttering mould of jacket and appropriate approved Super-Plasticiser for rendering concrete as flowable self compacting and SBR polymer but shall exclude cost of reinforcement, bond coat, Shear Keys, centering and shuttering, strutting, propping etc (Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument)				
14.5.1	50 mm thick in Grade M25 with cement content not less than 330 kg per cum	1127.00	sqm	598.08	674036.00
14.6	Providing and inserting 12 mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diametre (20mm to 30mm) up to depth from 30mm to 80mm at required spacing and making the hole & crack dust free by blowing compressed air, sealing the distance between injection nipple with adhesive chemical of approved make and allow it to cure complete as per direction of Engineer-In-Charge.	3131.00	each	248.94	779431.00
14.7	Providing and fixing in position, 200 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shortcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree) . The EPS core shall consist of 100 mm thick EPS of density not less than 20 kg/ per cum. Both the outer faces of the panel shall be finished by applying the layer of 50 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} À with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100Kn/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	1127.00	sqm	4568.16	5148316.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

14.8	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory Yvindows & other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm2, modulus of elasticity 900 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
14.8.1	Frame size 45 x 85 mm	212.00	metre	973.45	206371.00
14.9	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
14.9.1	30 mm thick	82.00	sqm	4567.69	374551.00
	Total SH : 14			**8537153.00**	
15	**SH : 15 Non Schedule Items**				
15.1	Credit of dismantled Fuel Wood Doors, Windows and Chokhats which shall be the property of contractor and should be removed from the site as per direction of engineer in charge. (Nothing extra shall be paind on this account).	136.40	kg	-5.00	-682.00
	Total SH : 15			**-682.00**	
	Total Rs. (SH:1 to SH 15)				**19309653.00**

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

B. SCHEDULE OF QUANTITIES OF E&M WORKS					
Name of work:- Repair and Rehabilitation of School Building including renovation of toilets at Kendriya Vidyalaya No. 1 Salawala Dehradun (SH: Electrical work)					
S.No.	**Description of item**	**Qty**	**Unit**	**Rate (In Rs.)**	**Amount**
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 steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
1.1.1	Group A	24.00	Point	1509.84	36236.00
1.2	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.				
1.2.1	Group A	16.00	Point	720.32	11525.00
1.3	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
1.3.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	80.00	Meter	387.95	31036.00
1.3.2	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	60.00	Meter	499.09	29945.00
1.4	Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	4.00	Each	846.14	3385.00
1.5	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	4.00	Each	571.43	2286.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

1.6	Supply, installation, testing and commissioning of decorative type surface mounting, following Size LED wall/ mirror light luminaire of 10-12 W with crome finish Aluminium housing, Luminaire efficacy ≥ 100 lm/watt, CCT-4000-6500K, PF ≥ 0.90 with integral electronic driver etc., suitable for operation on 140-270V, single phase, 50Hz AC supply system, complete including connections with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable, earthing etc. as required.	8.00	Each	543.00	4344.00
1.7	LED Batten light (System lumen efficacy ≥105 <120 lm/Watt). Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140 270 Volt, frequency 50/60 hz, Operating temp range -5 °C to 40 °C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10%, P. F.≥0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
	Powder Coated CRCA Sheet Body (Thickness > 0.50 mm)				
1.7.1	18- 22 Watt	8.00	Each	659.51	5276.00
1.8	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
1.8.1	5/6 A switch	16.00	Each	126.87	2030.00

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

1.9	Supplying, installation, testing and commissioning of plastic body fresh air fan of 250 mm (10") sweep, 230 V, 50 Hz, single phase, with factory-built louvers/gravity shutters, including mounting in existing/new wall opening, providing all fixing accessories, making good the surface, providing and laying flexible copper cable 3 × 1.5 sq mm from the nearest junction/control point to the fan, terminations with suitable lugs, connection, earthing etc complete as required.	8.00	Each	2420.00	19360.00
1.10	Supply, installation, testing and commissioning of 300mm x 300mm LED square Panel Light having CRCA/Aluminium housing, white color, 18 watt power, efficacy greater than equal to 100 Lumes/watt, PF 0.90, IP20 i/c making connection etc. complete as required.				
1.10.1	18 Watt	16.00	Each	1284.00	20544.00
1.11	SITC of 25 lit (Storage Capacity), 5 star, S.S. tank vertical type electrical water heater suitable to operate on 230V, 50 Hz AC supply & consumes power not more than 2 KW i/c providing & fixing 2 nos. heat insulated pipes of standard length & 1 nos. 3 pin 16 Amp plug top and making electrical connections complete etc. required.	4.00	Each	12046.00	48184.00
			Total		**2,14,151.00**

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
DEHRADUN ZONE,UTTERAKHAND

Annexure-X

Price Bid Sheet

Central Public Works Department					
NIT No: 97/CE/EE(C)-1/CPWD/Dehradun/2026-27					
Name of work:- Repair and Rehabilitation of School Building including Renovation of toilet of at Kendriya Vidyalaya-01 , Salawala, Dehradun.					
SCHEDULE OF QUANTITIES					
Name of the Contractor / Company Name					
Sl. No	**Name of component**	**Estimated cost**	**Percentage above or below the estimated cost**	**% in Figures**	**Total Cost**
1	Total Cost of Civil Works	Rs. 1,93,09,653/-	Select	0.00	-
2	Total Cost of E&M Works	2,14,927/-	Select	0.00	-
	Grand Total	**Rs. 1,95,24,580/-**			

Corrections	NIL	Insertions	NIL
Omissions	NIL	Overwriting	NIL
AE(P) C	AE (P) E	EE (P)	