

PART-A & B for Civil & PART-C for Electrical Component

Name of work : Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.

INDEX

Sl. No.	Description	Page No.
Part-A	Index	1 to 2
--do--	Information & Instruction for Bidders for e-tendering	3 to 4
--do--	NIT (Form CPWD-6)	5 to 13
--do--	Proforma for EMD Receipt	14
--do--	Form of Bank Guarantee for Earnest Money Deposit /performance Security/Security Deposit/Mobilization Advance	15 to 16
--do--	Form 'F' - Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects.	17
--do--	Percentage Rate Composite Bid (Form CPWD-7) for Civil Component	18 to 19
--do--	Acceptance	20
--do--	Proforma of Schedules	21 to 27
--do--	Establishing Site Laboratory & Testing of Materials (Appendix –I)	28
--do--	Requirements of Plant and Equipment at Site (Annexure-II)	29
Part-B (Civil Works)	Brief Scope of Work	30
--do--	General Requirement for the tender	31 to 32
--do--	Material and Quality Assurance	33 to 35
--do--	Additional conditions for cement	36

Sl. No.	Description	Page No.
--do--	Additional conditions for Steel Reinforcement	37 to 39
--do--	General Terms and Conditions	40 to 51
--do--	Particular Specification & Special Condition of work	52 to 77
--do--	Guarantee Bonds	78 to 85
--do--	List of Approved Make of Materials	86 to 88
--do--	Schedule of Quantities for Civil Components of Work	89 to 96
Part-C (Electrical Works)	Part-C (Electrical Works)	E-1
--do--	Additional conditions	E-2 to E-15
--do--	List of preferred make of materials	E-16 to E-20
--do--	Schedule of Quantities for Electrical Components	E-21 to E-27

This Composite NIT contains 1 to 96 pages (Part-A & Part-B) for Civil Works including this page & E-1 to E-27 for Electrical Works.

AE(C)

AE(E)

**EE & SM(C-I)
Rajarhat**

**EE & SM(E)
Rajarhat**

NIT amounting to Rs. 3,63,90,077/- (Rupees Three Crore Sixty-Three Lakh Ninety Thousand Seventy-Seven) only

Approved

SE & PD (Rajarhat)

INFORMATION AND INSTRUCTIONS FOR-BIDDERS FOR E-TENDERING FORMING PART OF BID DOCUMENT

The Executive Engineer & Senior Manager(C-I)-Rajarhat, Central Public Works Department, Nizam Palace, Kolkata-20 (Telephone no. **033- 22889017** & e-mail id. **eesmc1cpwdkol@gmail.com/ kol-eesmc1@cpwd.gov.in**) on behalf of the President of India invites online ~~Item rate/~~**percentage rate bids** from approved and eligible contractors of CPWD under Buildings & Roads category for the following work(s):

Sl. No.	NIT No.	Name of Work & location	Estimated cost put to bid (Rs.)	Earnest Money	Stipulated Period of Completion of work (in months)	Last date of online submission of bid, copy of receipt of deposition of original EMD and other documents as specified in the bid document	Date & time of opening of bid
1	2	3	4	5	6	7	8
1.	02/SE&PD/Rajarhat(Kol)/CPWD/2026-2027	Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.	Part-B for Civil Work = Rs.3,01,00,232/- Part-C for Electrical Work =Rs.62,89,845/-Total == Rs.3,63,90,077/-	Total = = Rs.7,27,802/-	6 months	Up to 03:00 P.M on 22.08.2026	03:30 P.M on 22.08.2026

- The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit this bid if he considers himself eligible and he is in possession of all the documents required.
- Information and Instructions for bidders posted on website shall form part of bid document.
- The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website **<https://etender.cpwd.gov.in>** or **www.cpwd.gov.in** free of cost.
- But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or Bankers Cheque or Fixed Deposit Receipts or/and Bank Guarantee including e-Bank Guarantee (for balance amount as prescribed) from any of the Commercial Bank towards EMD in favour of Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/AE), CPWD and other documents as specified.

*** Blanks to be filled by EE & SM(C-I)-Rajarhat, CPWD, Kolkata.**

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

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

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

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

- I. Insurance Surety Bond, Demand Draft/Account Payee Banker's Cheque/FDR/ Bank Guarantee of any commercial Bank against EMD.
- II. Enlistment Order of the Contractor.
- III. EMD Deposition Receipt.
- IV. GST registration certificate, if already obtained by the bidder.

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

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

- V. Undertaking on structural stability and soundness as per prescribed format Form 'F'.
- VI. Certificate of ERP Training through any of the CPWD Regional Training Institutes (RTIs) or through the National CPWD Academy (NCA) Gaziabad or through other special training arranged by ERP unit at CPWD.
- ~~VII. Undertaking Regarding BIM Implementation for the Project (Form J).~~

CPWD-6

CPWD

CPWD-6 FOR E-TENDERING

1. ~~Item rate/Percentage rate~~ bids are invited on behalf of President of India from approved and eligible contractors of CPWD under Buildings & Roads category for the work of :

“Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.”

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

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

- 1.1 The work is estimated to cost **Rs.3,63,90,077/-**. This estimate, however, is given merely as a rough guide.

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

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

~~Criteria of eligibility for submission of bid documents~~

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

~~For works estimated cost upto tendering limit of class 1 Buildings & Roads (erstwhile Composite/Building/Infrastructure) category Contractor (However, for Horticulture category, it may be modified as per bidding limit of CPWD class I contractors of Horticulture category):-~~

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

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

Note :-

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

1.2.2 Criteria of eligibility for CPWD as well as non-CPWD contractors.

~~For works estimated to cost above the tendering limit of class 1 (Super) Buildings & Roads (erstwhile Composite/Building/Infrastructure) category Contractor (However for Horticulture category, it may be modified as per bidding limit of CPWD class I contractors of Horticulture Category).~~

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

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

~~Or~~

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

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

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

~~The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bid. This is applicable for 1.2.1 as well as 1.2.2 (Para 1.2.1 (i) and Para 1.2.2 (i) are not applicable for CPWD enlisted contractors of appropriate class. Para 1.2.1 (ii) and Para 1.2.2 (ii) are also applicable for CPWD enlisted contractors of appropriate class).~~

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

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

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

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

2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD-7/8** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **6 months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. (i) The site for the work is available.
or
The site for the work shall be made available in parts as specified below :-
.....
(ii) The architectural and structural drawing for the work is available
or
The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.
5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.

CPWD-6

CPWD

6. After submission of the bid the contractor can re-submit revised bid any number of times **or withdraw it** before last **date and time** of submission of bid as notified. **No post-tender modification is allowed by the tenderers except through negotiations, if required. In case, any tenderer does so, the tender will be rejected and the tenderer will be debarred for future tendering in CPWD for two years by the concerned enlisting authorities (in case of CPWD enlisted contractor) and by the concerned CE/SE (in case of non-enlisted contractor).**
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. ~~When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.~~
9. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee including e-Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks (drawn in favour of **Executive Engineer & Senior Manager (C-I), Rajarhat, CPWD, Kolkata**) shall be scanned and uploaded on the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT. A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lacs, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee including e- Bank Guarantee of any Commercial bank having validity for a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.
The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.
Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority.
Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited EMD with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at 03:30 PM on **22.08.2026**

*** Blanks to be filled by EE & SM(C-I)-Rajarhat, CPWD, Kolkata**

CPWD-6**CPWD**

10. The bid submitted shall become invalid and e-Tender processing fee (if applicable) shall not be refunded if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
 - (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.
 - (iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in schedule E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work within the period specified in Schedule F.
12. **The description of the work is as follows:**

“Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.”

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

CPWD-6

CPWD

13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
15. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
16. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
18. The bids for the work shall remain open for acceptance for a period of 30 (thirty) days from the date of opening of bids in case of single bid system and ~~75 (seventy five) days from the date of opening of technical bids in case bids are invited in 2 or 3 bid system.~~ Further
 - (i) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date **and time (24 hours basis)** of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry 7 days after last date **and time (24 hours basis)** of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (iii) **Withdrawal of the tender, by the tenderer, shall only be made through e-tender portal. Any other method i.e. through letter/e-mail etc. shall not be considered.**
 - (iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.

CPWD-6**CPWD**

19. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
- The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.
20. **For Composite Bids**
- 20.1.1 The Executive Engineer in charge of the major component will call bids for the composite work. The cost of bid document and Earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite bid.
 - 20.1.2 The bid document will include following three components:
Part A:- CPWD-6, CPWD-7/8 including schedule A to F for major component of the work, Standard General Conditions of Contract for CPWD **2023** for Construction work as amended/modified up to last date of submission of bid.
Part B :- General/specific conditions, specifications and schedule of quantities applicable to major component of the work.
Part C :- Schedule A to F for minor component of the work (competent authority under clause 2 and clause 5 shall be same authority as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.
 - 20.1.3 The bidders must associate himself, with agencies as per NIT conditions.
 - 20.1.4 The eligible bidders shall quote rates for all items of major component as well as for all items of minor components of work.
 - 20.1.5 After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two or more copies of agreement depending upon number of EE's/DDH in charge of minor components. One such signed set of agreement shall be handed over to EE/DDH in charge of minor component(s).
EE of major component will operate Part A and Part B of the agreement. EE/DDH in charge of minor component(s) shall operate Part C along with Part A of the agreement.
 - 20.1.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.
 - 20.1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.
 - 20.1.8 The main contractor has to associate agencies for specialized component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-charge of relevant component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of relevant component(s).

- 20.1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of relevant specialized component(s).
The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
- 20.1.10 The main contractor has to enter into MoU with agency(s) associated by him. Copy of such MoU shall be submitted to EE/DDH in charge of each relevant component as well as to EE in charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU/agreement with the new contractor associated by him.
- 20.1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main contractor. The CMB shall be maintained independently by Engineer-in-Charge of major and minor components.
- 20.1.12A The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components.
- 20.1.12B Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.
- ~~21. Integrity Pact: The contractor shall download the Integrity Pact, which is a part of tender documents, affix his signature in the presence of a witness, and uploaded the same while submitting online bids for all works of estimated cost put to tender equal or more than the threshold value given in Schedule F. In the event of his failure to sign and upload the Integrity Pact along with other bid documents, his bid shall be rejected.~~
22. The intending bidders are required to update their profile in CPWD e-tender portal and to upload their bid well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer/Assistant Engineer (Phone No. **033- 22889017**, e-mail id **eesmc1cpwdkol@gmail.com/ kol-eesmc1@cpwd.gov.in**) or ERP help line no.18001803286 or e-mail Id. cpwd.support@techmahindra.com. The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.
23. **Price Preference to SC/ST individual contractor for item rate/percentage rate tender:**
Price preference in quoted item rate/percentage rate tender shall be applicable to the individual enlisted/non-enlisted SC/ST contractor as under:-
- (i) For work(s) upto and equal to an estimated cost of Rs. 2.70 lakh a price preference upto 5% (with reference to the lowest valid tender) may be allowed in favor of individual SC/ST enlisted/non-enlisted contractor. No earnest money is required in such case(s).

CPWD-6**CPWD**

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

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

Format of receipt of deposit of original EMD

Receipt of deposition of original EMD (Receipt No.-...../ date :-.....)

Name of work:- **Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.**

NIT No.- **02/SE&PD/Rajarhat(Kol)/CPWD/2026-2027**

1. Estimated Cost:-**Rs. 3,63,90,077/-**
2. Amount of earnest Money Deposit:-**Rs. 7,27,802/-**
3. Last date of submission of bid:-**Up-to 15:00 Hrs on 22.08.2026**

-
1. Name of Contractor:-.....#.....
 2. Form of EMD:-.....#.....
 3. Amount of earnest Money Deposit:-.....#.....
 4. Date of submission of EMD:-.....#.....

Signature, Name and Designation of EMD
Receiving officer (EE/DDH)
Along with Office stamp

(# To be filled by EMD receiving EE)

On non-judicial stamp paper of minimum Rs.100

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

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

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

OR**

Whereas the Executive Engineer (name of division) CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with (name and address of the contractor) (hereinafter called "the Contractor") for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)..... as **Performance Guarantee/Security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

2. We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs. (Rupees only) on demand by the Government within 10 days of the demand.
3. We, (indicate the name of the Bank), do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupeesonly).
4. We, (indicate the name of the Bank) , further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

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

Date.

Witnesses:

1. Signature
Name and address

Authorized signatory

Name

Designation

2. Signature
Name and address

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 security/security deposit/mobilization advance, as the case may be.

Form 'F'

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

Name of Work:- **Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.**

NIT No.:- **02/SE&PD/Rajarhat(Kol)/CPWD/2026-2027**

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

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

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

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

Signature of
notary with seal

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

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

CPWD-7

CPWD

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

Percentage Rate Tender/~~Item Rate Tender~~ & Contract for Works

(A) Tender for the work of:-

“Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.”

- (i) To be uploaded by **15:00** hours on **14.08.2026** to/upload at **<https://etender.cpwd.gov.in>** or **www.cpwd.gov.in**.
- (ii) To be opened in presence of tenderers who may be present at **15:30** Hours on **22.08.2026** in the office of **Executive Engineer & SM(C-I)-Rajarhat, CPWD, Kolkata.**

TENDER

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

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

I/We agree to keep the tender open for 30 days from the due date of its opening in case of single bid system ~~75 days from the date of opening of technical bid in case tenders are invited on 2-/3 bid/ system for specialised work~~ and not to make any modification in its terms and conditions.

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

*** Blanks to be filled by EE & SM(C-I)-Rajarhat, CPWD, Kolkata**

CPWD-7**CPWD**

A copy of earnest money deposit receipt of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee including e-Bank Guarantee (as prescribed) issued by a Commercial Bank is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

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

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

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

Dated:**

Signature of Contractor **

Witness: **

Address: **

Postal Address **

Occupation: **

**** To be filled by Contractor**

CPWD-7**CPWD****ACCEPTANCE**

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

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

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

For & on behalf of President of India

Signature..... *

Dated: *

Designation..... *

*** Blanks to be filled by EE & SM(C-I)-Rajarhat, CPWD, Kolkata**

PROFORMA OF SCHEDULES**CPWD****PROFORMA OF SCHEDULES****(Separate Proforma for Civil & Elect. Works in case of Composite Tenders)****SCHEDULE 'A'**Schedule of quantities (as per PWD-3) : Page no. 89 to 96**SCHEDULE 'D'**Extra schedule for specific requirements/ document : **NIL**
for the work, if any**SCHEDULE 'E'**Reference to General Conditions of Contract (~~GCC-EPC Projects 2022/GCC Maintenance Works 2023/GCC Construction Works 2023~~) : **General Condition of Contract 2023 for Construction work with amendments upto the last date of submission of bids.**Name of Work : **"Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata."**Estimated cost of work

- | | | | |
|-------|-----------------------|---|--|
| (a) | Civil Component | : | Rs. 3,01,00,232/- |
| (b) | Electrical Component | : | Rs. 62,89,845/- |
| | Total | : | Rs.3,63,90,077/- |
| (i) | Earnest Money | : | Rs.7,27,802/- (to be returned after receiving performance guarantee) |
| (ii) | Performance Guarantee | : | (a)5% of Tender 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 |

SCHEDULE 'F'**GENERAL RULES & DIRECTIONS**Officer inviting bid : **EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata**~~Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3. See below~~

PROFORMA OF SCHEDULES**CPWD****Definitions**

- 2(v) Engineer-in-Charge : **EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata**
- 2(viii) Accepting Authority : **SE & PD, Rajarhat, CPWD, Kolkata**
- 2(x) Percentage on cost of materials and labour to cover all overheads and profits: : **15%**
- 2(xi) Standard Schedule of Rates : **DSR' 2023 for Civil Items with upto date correction slip**
- 2(xii) Department : **CPWD**
- 9(ii) Standard CPWD Contract Form General Conditions of Contract Construction Works 2023, CPWD Form 7/8 as modified & corrected upto previous day of the last date of submission of the tender : **CPWD Form 7 and GCC 2023 for Construction work modified & Corrected upto the last date of submission of bids.**

Clause 1

- (i) Time allowed for submission of Performance Security, Programme Chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance : **7 days**
- (ii) Maximum allowable extension with late fee @0.1% per day of Performance Guarantee amount beyond the period provided in(i) above : **3 days**

Clause 2

Authority for fixing compensation under clause 2 : **SE & PD, Rajarhat, CPWD, Kolkata**

Clause 5

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

PROFORMA OF SCHEDULES**CPWD****Mile Stone(s) as per table given below: -**

S. No.	Description of Milestone (Physical)	Time allowed in months (from date of start)	Amount to be withheld in case of non-achievement of milestone
1	Site Preparation, Setting Out & Mobilisation – Mobilisation of manpower, materials, plant & machinery, site clearance, setting out and preparation of the work area.	0.5 Month	1% of Contract Value
2	Piling & Foundation Works up to Plinth Level – Complete piling works, pile caps, excavation, PCC, reinforcement, footing/foundation, RCC works and all associated works up to plinth level.	2.5 Months	1% of Contract Value
3	Superstructure Works – RCC columns, beams, masonry works and all associated structural works of the boundary wall.	4 Months	1% of Contract Value
4	MS, GRC, Ornamental & Lighting Works – Complete MS works, gates, vertical slats, decorative panels, GRC works, all ornamental/decorative works, architectural finishes and lighting works.	5.5 Months	1% of Contract Value
5	Final Completion, Finishing & Handover – Completion of all works as per approved drawings and scope of work, final finishing, testing, rectification of defects, cleaning of site and handing over of the completed boundary wall.	6 Months	1% of Contract Value
	Time allowed for execution of work	<u>6 months</u>	

Authority to decide:

- (i) Authority to convey the decision of shifting of milestone and extension of time : **EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata**
- (ii) Authority to decide rescheduling of mile stones and extension of time : **SE & PD, Rajarhat, CPWD, Kolkata**
- (iii) Shifting of date of start in case of delay in handing over of site : **SE & PD, Rajarhat, CPWD, Kolkata**

PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site

Part	Portion of site	Description	Time period for handing over reckoned from date of issue of letter of intent
Part A	Portion without any hindrance	Site is Available	Nil
Part B	Portions with encumbrances	--	N. A.
Part C	Portions dependent on work of other agencies	--	N. A.

Clause 6

Computerized Measure Book (CMB)/Electronic Measurement Book (EMB)

Mode of Measurement :

CMB/EMB

PROFORMA OF SCHEDULES**CPWD****Clause 7**

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment **Rs.50.00 lacs**

Clause 7A

Whether clause 7A shall be applicable : **Yes**
(No RA Bill shall be paid till submission of EPFO and ESIC registration)

Clause 8

Competent Authorities to inspect and issue part/ final completion certificate : **EE & SM(C-I)-Rajarhat, CPWD, Kolkata**

Clause 8A

Authority to decide compensation on account if contractor fails to submit completion plans : **EE & SM(C-I)-Rajarhat, CPWD, Kolkata**

Clause 10A

List of testing equipment to be provided by the contractor at site lab : **List attached as Appendix-I**

Clause 10C ----Applicable/ Not Applicable---

Component of labour expressed as percent of value of work : **25%**

Clause 10CC ---- Applicable/ Not Applicable**A. For construction period**

S.No.	Relevant component of Material /Labour for price escalation	Percentage of total value of work (Civil Component)
1.	Cement component	15 %
2.	Labour component	25 %
3.	Civil component of other Construction Materials	40 %
4.	E&M (Electrical and Mechanical) component of Construction Materials	%
5.	POL (Diesel) component	%
6.	Reinforcement steel bars/TMT bars/structural steels (including strands and cables) component	20 %
7.	Bitumen component	%
	Total	100 %

PROFORMA OF SCHEDULES**CPWD****B. For maintenance period**

S.No.	Relevant component of Material /Labour for price escalation	Percentage of total value of work
1.	Labour component	--
2.	Civil component of other Construction Materials	--
3.	E&M (Electrical and Mechanical) component of Construction Materials	--
4.	Bitumen component (For Road work component)	--
	Total	--

Clause 11

Specifications to be followed for execution of work

CPWD Specifications 2019 volume – I & II with corrections of slips upto the last date of submission of bid.

~~(i) Building information model (BIM) is applicable and BIM professional to be deployed by Contractor~~ **Yes**

Clause 12

12.2(c) Deviation limit beyond which clauses 12.2 (c) shall apply for building work

100%

12.4 (i) Deviation limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)

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:-

SE & PD, Rajarhat, CPWD, Kolka**Clause 18**

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

List as per Annexure-II

- Clause 19 C EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata authority to decide penalty for each default.
- Clause 19D EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata authority to decide penalty for each default.
- Clause 19 G EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata authority to decide penalty for each default.
- Clause 19K EE & SM(C-I)-Rajarhat, C.P.W.D., Kolkata authority to decide penalty for each default.

PROFORMA OF SCHEDULES**CPWD****Clause 25**

(i)	Conciliator	:	SDG (Kolkata), CPWD or successor thereof
(ii)	Arbitrator Appointing Authority	:	SE & PD, Rajarhat, CPWD, Kolkata or successor thereof
(iii)	Place of Arbitration	:	Kolkata

Clause 32**Requirement of Technical Representative(s) and recovery Rates are as below**

S. No.	Minimum Qualification of Technical Representative	DISCIPLINE	Designation (Principal Technical/ Technical Representative)	Minimum Experience (Years)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32	
						Figure	Words
1.	Graduate Engineer or Diploma Engineer	Civil Electrical	Project Manager cum planning/ quality/ Site/billing Engineer Engineer	2 or 5 respectively	1 + 1	Rs.15,000/-	fifteen thousand only p.m. per person

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

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

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

PROFORMA OF SCHEDULES**CPWD****Clause 38**

- (i) (a) Schedule/statement for determining : **Delhi Schedule of Rates 2023 for Civil with amendments upto date of submission of bid**
theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates printed by C.P.W.D.
- (ii) Variations permissible on theoretical quantities:
- (a) Cement
For works with estimated cost put to tender not more than Rs.25 lakh. : **3%plus/minus.**
For work with estimated cost put to tender more than Rs.25 lakh. : **2%plus/minus.**
- (b) Bitumen All Works : **2.5%plus only& 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**

Appendix-I

ESTABLISHING SITE LABORATORY AND TESTING OF MATERIALS

Equipments for conducting necessary tests (as per CPWD Specifications 2019 Volume-I) 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	Specification / Capacity	Quantity
1	Balances		
1(i)	Semi-self indicating balance	7–10 kg capacity; accuracy 10 g	1
1(ii)	Semi-self indicating balance	500 g capacity; accuracy 1 g	1
1(iii)	Pan balance	5 kg capacity; accuracy 10 g	1
2	Electric oven	Thermostatically controlled up to 110°C; sensitivity 1°C	1
3(i)	I.S. sieves	450 mm internal diameter; 100, 80, 63, 50, 40, 25, 20, 12.5, 10, 6.3 and 4.75 mm; complete with lid and pan	1 set
3(ii)	I.S. sieves	200 mm internal diameter, brass frame; 2.36 mm, 1.18 mm, 600, 425, 300, 212, 150, 90 and 75 microns; complete with lid and pan	1 set
4	Sieve shaker	Suitable for 200 mm and 300 mm dia. sieves; manually operated with timing switch assembly	1
5	Slump test equipment	Slump cone, steel plate, tamping rod, steel scale and scoop	1 set
6	Dial gauges	25 mm travel; 0.01 mm/division least count	2
7	Compression testing machine	100 tonnes capacity; electrical-cum-manually operated	1
8	Graduated measuring cylinders	200 ml capacity	3
9(i)	Enamel trays	300 × 250 × 40 mm, for efflorescence test of bricks	2
9(ii)	Circular enamel plates	250 mm diameter	4

Annexure-II

REQUIREMENTS OF PLANT AND EQUIPMENT AT SITE

Note: 1. The Bidder is required to deploy T&P as per requirement of work.

2. All the plants & equipments are to be deployed as and when required or directed by Engineer-in-Charge.

PART-B for Civil Component

BRIEF SCOPE OF WORK

Name of Work	:	Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.
Estimated Cost	:-	Rs. 3,01,00,232/- (Civil) <u>Rs. 62,89,845/- (Electrical)</u> Total Rs. 3,63,90,077/-
Period of Completion	:-	6 months
Location	:-	Financial Hub in Rajarhat, Newtown, Kolkata.

The work shall be carried out as per Schedule of Quantity attached with the NIT, approved Architectural drawings, structural Drawings, CPWD Specifications under the direction of Engineer-in-charge as mentioned in Schedule -F.

Work shall be executed according to General Condition of Contract for Central P.W.D. works available separately at printer's outlets. The bidder may obtain the address of the outlet from the Executive Engineer.

GENERAL REQUIREMENTS FOR THE TENDER

Name of Work: Construction of a new campus for Canara Bank at Plot Nos. CBD-97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5)-storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ-97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.

1. The tenderer is advised to read and examine the tender documents for the work and the set of drawings available with Engineer-in-charge. He should inspect and examine the site and its surroundings by himself before submitting his tender.
2. Separate schedule of quantity is included in this tender for civil and electrical items of work. If the tenderer wants to offer any unconditional rebates on their rates, the same should also be offered in the respective components of civil and electrical schedule separately. The contractor shall quote the percentage rates in figures and words accurately so that there is no discrepancy in rates written in figures and words.
3. Time allowed for the execution of work is **6 months**.
4. The contractor(s) shall submit a detailed program of execution in accordance with the **master programme/milestone within seven days** from the date of issue of letter of acceptance.
5. ~~Contractor has to arrange and install Fully Automatic concrete batching plant with computer control of 30 cum / hour capacity within 1.0 month of date of start of the work or handing over the site whichever is later during the currency of work and nothing extra will be paid on this account. In case of delay in installation of batching plant a non-refundable recovery of Rs. 5000/- per day shall be made from Running account bill of the contractor for each delayed days.~~
6. Quality of the project is of utmost importance. This shall be adhered to in accordance with the provisions of CPWD specifications and guidelines given in the relevant paras.
7. ~~Space for the installation of Batching plant, construction of stores/steel yard, Office and labour hutment is not available in the campus of Directorate of Enforcement where the work is to be executed. The agency has to arrange space for the same in proximity of the work site not more than in radius of 10.00 (Ten) kms and will take prior approval of Engineer in charge. Contractor has to transport concrete from the batching plant to the work site by Transit Mixer only. The bidder must quote his rate accordingly and nothing extra shall be paid on this account.~~
8. Ready mix concrete must be used with prior approval of Engineer in Charge. Nothing extra shall be paid for this. Ready mix concrete may be procured from Ready mix concrete plant of approved make.
9. The contractor (s) shall make his own arrangements for electricity and water required for the execution of work and nothing extra shall be paid on this account.
10. **Cement shall be arranged by the contractor himself.**
11. **Steel Reinforcement shall be arranged by the contractor himself.**
12. Contractor has to engage specialized agencies for specialized items of works such as Water proofing, Aluminium work, uPVC work, Structural Glazing work, Sanitary Installation & plumbing work, Fire Doors and Water filtration plant. Only those specialized agencies/firms who have satisfactorily executed works as per following criteria during last seven years are eligible for the specialized works-

- (a) Three works each costing not less than 40% of estimated cost for concerned sub head.
Or
(b) Two works each costing not less than 60% of estimated cost for concerned sub head.
Or
(c) One work costing not less than 80% of estimated cost for concerned sub head.

The value of specialized executed works shall be brought to the current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion of specialized work to the previous date of last date of submission of tender.

Approval of the specialized agencies for each specialized work shall be obtained from the Engineer-in-Charge within one month of award of work. Even if, such specialized items of work shall be executed by the specialized agencies, the work shall be deemed to be executed by the tenderer for all purposes and the responsibility of the quality of items of works executed etc. shall continue to be that of the tenderer only.

13. Contractor has to deploy required Plant and machinery on the project. In case the contractor fails to deploy the plant and machinery whenever required and as per the direction of the Engineer-in-charge, he (Engineer-in-charge) shall be at a liberty to get the same deployed at the risk and cost of the contractor.
14. The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time.

MATERIAL AND QUALITY ASSURANCE

1. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
2. The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
3. The contractor shall submit shop drawings of staging and shuttering arrangement, aluminum & glazing work, fire doors and fittings, plumbing 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. Test Laboratories :

A) Laboratory at site :

~~The contractor shall establish a testing lab at site within 1.0 month of date of start of the work or handing over the site whichever is later during the currency of work 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. **In case of delay in establishment of Lab at site, anon refundable recovery of Rs. 1000/- per day shall be made from Running account bill of the contractor for each delayed days.**~~

~~— 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 equipment as mentioned in Appendix I.~~

~~— 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 of IITs/ NITs/ Government Engineering College as approved by Engineer in Charge, the contractor shall supply free of charge all the materials required for testing, including transportation. Testing charges for the tests conducted from external laboratories shall be borne by the contractor.~~

Note: The testing of all the materials shall be done as per CPWD Specification, frequency of testing from the lab as approved by Engineer-In-Charge.

B) Other Laboratories :

The contractor shall arrange carrying out all tests required under the agreement through the laboratory of IITs/ NITs/ Government Engineering College as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including charges for testing for all materials.

C) Sampling of Materials :

- C1 Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.
- C2 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.
- C3 BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.
- C4 The contractor shall procure all the materials in advance so that there is sufficient time for testing and approval of the materials and clearance of the same before use in work.
- C5 All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
- C6 The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.
- 5 The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the Jr. Engineer/Assistant Engineer -in-Charge of work and which shall be duly signed by the contractor or his authorized representative.
- 6 The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However, cost of photographs, slides, audio/videography etc shall be borne by the department.
- 7 The contractor shall be fully responsible for the safe custody of materials brought by him or issued to him even though the materials are under double lock key system.
- 8 Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

- 9 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.
- 10 Contractor shall construct a temporary site office as per plan approved by Engineer-in-Charge (minimum 300 sqft) along with furnitures adjacent to the site laboratory at the site for the purpose of CPWD site office and displaying samples approved by the engineer-in-charge. Contractor will demolish the site office and take away furnitures/room after completion of work and finalization of accounts. Nothing extra shall be paid for construction, providing furnitures and dismantling.

D) Maintenance of Cement Register :

- (i) All the register of tests to be carried out at construction site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff.
- (ii) The test registers to be issued to the contractor are :
 - a) Materials at site account register.
 - b) Cement register.
 - c) Master test registers.
 - d) Cube test register.
 - e) Paint register.
 - f) Drawing register.
- (iii) All the entries in the register will be made by the designated engineering staff of the contractor and same should be regularly reviewed by JE/AE/EE.
- (iv) Contractor shall be responsible for safe custody of all the test registers.
- (v) Submission of copy of all test registers, material at site register along with each alternate running account bill and final bill shall be mandatory.

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, NUVOCO and J.K. Cement. Any other brand if proposed to be used will be approved by the Superintending Engineer cum Project Director in charge of the work only on reasonable ground.
2. Supply of cement shall be made in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of the relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS code the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.
2. The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer-in-Charge. The cement godown of the required capacity to store the cement shall be constructed by the contractor at the location where batching plant is installed and shall arrange a temporary container for cement godown at work site of capacity 1000 bags each. Nothing extra shall be payable to the contractor.
3. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
4. The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to test laboratories. The cost of tests shall be borne by the contractor.
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 be made.
6. The cement brought to site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-Charge.
7. The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.
8. Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot & arid regions, the minimum curing period shall be 14 days or its equivalent.
9. Till the time, BIS makes it mandatory to print the %age of fly ash on each bag of cement, the certificate from the PPC manufacturer indicating the same shall be obtained and permission obtained from Engineer-in-Charge before use of such cements in works.
10. 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.

ADDITIONAL CONDITIONS FOR STEEL REINFORCEMENT

1. The contractor shall procure Corrosion Resistant TMT bars of **Fe 500D** grade (the grade to be procured is to be specified) 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 The TMT bars procured from primary producers shall conform to manufacture's specifications.
 - 1.2 TMT bars procured from primary producers, the specifications shall meet the provisions of IS 1786: 2008 pertaining to **Fe 500 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 steel 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 steel reinforcement shall be brought to the site in bulk supply of 50 tonnes or more or as directed by the Engineer-in-charge.
5. The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent distortion & corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
6. For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

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

7. The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.
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. The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of the test shall be borne by the contractor.
11. If the quantity of steel actually used in the work is found to be more than the theoretical quantity of steel 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 steel used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in clause 38). The cost of quantity of steel so less used shall be recovered from the contractor at rate as specified in schedule 'F'. Decision of the Engineer-in-Charge in regard to theoretical quantity of steel which should have been actually used and recovery of the rate specified shall be final and binding on the contractor.
12. 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.
13. 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.
14. 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, Tor steel bars and TMT bars into standard weight.
15. 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.
16. If the derived weight as in para 15 above is lesser than the standard weight as in para 14 above, the derived actual weight shall be taken for payment.

If the derived actual weight is found more than the standard weight then the standard weight as worked out in para 14 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.
17. 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.

18. 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	-8%
2	Over 10 upto& including 16	-6%
3	Over 16	-4%

GENERAL TERMS AND CONDITIONS

- 1 In the case of discrepancy between the schedule of quantities, the specifications and / or the drawings, the following order of preference shall be observed:-
 - i) Nomenclature of items as per schedule of quantities.
 - ii) Particular specification and special condition, if any.
 - iii) Architectural Drawings
 - iv) CPWD specifications.
 - v) Indian standard specifications of B.I.S.
 - vi) Sound Engineering Practice
 - vii) Decision of Engineer-in-Charge.

A reference made to any Indian Standard specification in these documents, shall imply to the latest version of that standard. Including such revision/amendments as issued by the bureau of Indian standard upto last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian standard applicable to the work at site.
- 2 Except for the items, for which particular specifications are given or where it is specifically mentioned otherwise in the description of items in the schedule of quantities the work shall generally be carried out in accordance with the "CPWD specifications 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.
- 3 Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same. Extra payment for centering/shuttering, if required to be done for heights greater than 3.5 m shall however be admissible at the rates arrived at in accordance with clause 12 of the agreement, if not already specified.
- 4 The quality of work is of paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work.
- 5
 - a) The contractor (s) shall inspect the site of work before tendering and acquaint himself with the site conditions and no claim on this account shall be entertained by the department.
 - b) The contractor (s) shall get himself acquainted with nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction.

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

- 16 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.
- 17 There is space limitation in the campus in which work is to be carried out and no space shall be provided for erection of labour hutment in the campus. Contractor has to arrange space for erection of labour hutment at any other place in proximity of the campus. Nothing extra shall be paid on this account.
- 18 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.
- 19 For the purpose of recording measurements and preparing running account bills, the abbreviated nomenclature indicated in the publications Abbreviated Nomenclature of Items of DSR 2023 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.
- 20 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.
- 21 It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.
- 22 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.
- 23 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.
- 24 The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, sand, earth 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.

25 PROGRAMME CHART

- 25.1 The contractor shall submit a Detailed construction programme (Time and Progress Chart) for execution of work in stipulated period of completion considering each mile stone within 07 (seven) days of date of issue of letter of acceptance. The Engineer-in-charge may within 30 days thereafter, if required modify, and communicate the programme approved to the contractor failing which the programme submitted by the contractor shall be deemed to be approved by the Engineer-in-charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates by which these details are required by contractor without causing any delay in execution of the work. The chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of

various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in Schedule "F".

- 25.2 In case of non submission of construction programme by the contractor the program approved by the Engineer-in-charge shall be deemed to be final.
- 25.3 The approval by the Engineer-in-charge of such programme shall not relieve the contractor of any of the obligations under the contract.
- 25.4 The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 5000/- shall be made on per week or part basis in case of delay in submission of the monthly progress report.
- 25.5 The program chart should include the following: -
 - a) Descriptive note explaining sequence of various activities.
 - b) BAR CHARTS prepared in mutually agreed software or in other format decided by Engineer-in-charge which will indicate resources in financial terms, manpower and specialized equipments for every important stage.
 - c) Program for procurement of materials by the contractor.
 - d) Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.
 - e) Program of deployment of machinery/equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
 - f) Programme for achieving milestones.
- 25.6 The submission for approval by the Engineer-in-charge of such programme or such particulars shall not relieve the contractor of any of the 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.
- 26 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.
- 27 If the work is carried out in more than one shift or during night, no claim on this accounts shall be entertained.

- 28 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.
- 29 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.
- 30 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.
- 31 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.
- 32 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.

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

- i) The works shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available thereof is complete and unambiguous.

The discrepancy, if any shall be brought to the notice of the Engineer-in-Charge before execution of the work. The contractor alone shall be responsible for any loss or damage executing by the commencement of work on the basis of any erroneous and or incomplete information.

- ii) 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.
- 35 The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.
- 36 The works to be undertaken by the contractor shall inter-alia include the following:
- (i) Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
 - (ii) Obtaining of Statutory permissions where-ever applicable and required.
 - (iii) Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
 - (iv) Warranty obligation for the equipments and / or fittings/fixtures supplied by the contractor. Contractor shall provide all the shop drawings or layout drawings for all the co-ordinated services before starting any work or placing any order of any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-Charge prior to delivery of material at site.
- 37 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/bailing 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.

38 PREVENTION OF NUISANCE AND POLLUTION CONTROL

- a) 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 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.
- b) 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 materials are fully covered.
- c) The contractor shall ensure that the construction materials including transportation of earth are covered by tarpaulin.

39 Security and Traffic Arrangements

- a) In the event of any restrictions being imposed by the Security agency, CPWD, Traffic 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 such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.
- b) No payment shall be made for any damages caused by rain, snowfall, flood, earth quake or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. 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.
- c) The contractor shall construct suitable godowns, yard at the site of work for storing all materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.
- d) The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all 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 local body and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. 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. He 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.

- e) For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do the same at his own cost and nothing extra shall be paid.
- f) The Contractor shall make all necessary arrangements for protecting from rains, fog or likewise extreme weather conditions, the work already executed and for carrying out further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account and also no claims for hindrance shall be entertained on this account.
- g) In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any. Further, no claims for hindrance shall be entertained on this account.
- h) The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (tree/plant/vegetation) from the project area.

40. Setting out

- a) The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of buildings/ roads/ services in consultation with the Engineer -in-Charge & proceed further. Any discrepancy between architectural drawings and actual layout at site shall be brought to the notice of the Engineer -in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and centre lines, etc., Nothing extra shall be payable on this account.
 - b) The Contractor shall establish, maintain and assume responsibility for grades, lines, levels and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc. to the Engineer -in-Charge before commencing work. Commencement of work shall be regarded as the Contractor's acceptance of such grades, lines, levels, and dimensions and no claim shall be entertained at a later date for any errors found.
 - c) If at any time, any error appears due to grades, lines, levels and benchmarks during the progress of the work, the Contractor shall, at his own expense rectify such error, if so required, to the satisfaction of the Engineer -in-Charge. Nothing extra shall be payable on this account.
 - d) The approval by the Engineer-in-Charge, of the setting out by the Contractor, shall not relieve the Contractor of any of his responsibilities and obligation to rectify the errors/ defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.
 - e) 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.
 - f) The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work (including marking of reference points, center lines of buildings), construction and maintenance of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, signage, labour safety, labour welfare and labour training measures, preparatory works, working during monsoon, working at all depths, height and location etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account.
41. The contractor should have own constructions equipment required for the proper and timely execution of the work. Nothing extra shall be paid on this account. No tools and plants including

any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account

42. 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 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.
43. The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency to deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided by contractor commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his workshop for this work, shall be exclusively used in the construction of this work and they shall not be shifted/ removed from site without the permission of the Engineer-in-Charge.
44. The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.
45. The Contractor shall take all precautions to abide by the environmental related restrictions imposed by any statutory body having jurisdiction in the area 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. 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.
46. The Contractor shall cooperate with and provide the facilities to the associate Contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the Department (CPWD) against any claim(s) arising out of such disputes. 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 bench marks to his associate 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/ associate contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.
47. The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, fire fighting & fire alarm system, information technology, communication & electronics and any other services.
48. All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on project location during excavation/construction shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precaution to prevent his work men or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal acquaint the Engineer-in-charge of such discovery and carry out the official instructions of Engineer-in- charge for dealing with the same, till then all work shall be carried out in a way so as not to disturb/damage such article or thing.
49. He shall protect and indemnify the Department(CPWD) 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.
50. 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.

51. **Supervision of work**

The Contractor shall depute Site Engineer & 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 deploy key 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, the Contractor shall deploy more staff or better experienced staff at site to complete the work with quality and in stipulated time limit. Principle Technical representative of the Contractor having minimum experience in similar nature of work as mentioned in the clause 36 of the General Conditions of the Contract, shall always be available at the site during the actual execution of the work.

52. Cleanliness of site

- a. The Contractor shall not stack building material/malba/muck on the land or road of the institute or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local bye laws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material/malba as stated above, the Contractor shall be liable to pay the stacking charges/penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above accounts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.
- b. The contractor shall take instructions from the Engineer-In-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed.
- c. The Contractor shall take all care to prevent any water- logging at site. The waste water, slush etc. shall not be allowed to be collected at site. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

53. Inspection of work

Officers of CPWD, Local authorities and other Govt. authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing.

- a) Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.
- b) Entrance and area surrounding to be kept cleaned.
- c) Display layout plan key plan, Building drawings including plans, elevations and sections.
- d) Upto date displays of Bar chart, CPM and PERT etc.
- e) Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
- f) Keep plastic / cloth mounted one sets of building drawings.
- g) Set of Helmets and safety shoes for exclusive use for officers/dignitaries visiting at site.

54. 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:
- Route of all piping and their diameters including soil waste pipes & vertical stacks.
 - Ground and invert levels of all drainage pipes together with locations of all manholes and connections upto outfall.
 - Route of all water supply lines with diameters, location of control valves, access panels etc.

55. 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 six 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 month, the said component of secured advance shall be recovered from next running account bill paid to the agency.

56. TEMPORARY BARRICADING

Proper temporary barricading by fencing with painted M.S. sheets with lettering, shall be carried out by the Contractor at the start of work to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent to the sites. It shall be done by providing, erecting, maintaining temporary protective barricading, 3.0 metres high as per drawing approved by Engineer-in-charge. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 1.8 metres spacing, for the entire duration till completion of the work. Contractor shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in-Charge. Nothing extra shall be payable on this account.

PARTICULAR SPECIFICATION & SPECIAL CONDITION OF WORK

- A. 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 guidance only).
- B. Stone aggregate of all grades shall be of hard stone variety fulfilling CPWD/IS Codal specifications to be obtained from quarries at ~~Domchanch (Koderma)/Pakur~~ or as approved by Engineer-in-charge.
- C. Sand to be used in cement concrete work, mortar for masonry and plaster work shall be of standard quality conforming to CPWD/IS codal specification and shall be obtained from source at ~~Sone/ Koilwar/ Nadariganj/ Kharal More, Nawada~~ or as approved by Engineer-in-charge.
- D. Common burnt clay FPS (non-modular) brick of 7.5 class designation shall be used in size 250mmx125mmx75mm. Brick shall be procured from approved kiln as approved by Engineer-in-charge.
- E. Fly-ash brick of class designation 10 shall be used in size 250mmx125mmx75mm and shall be procured from kiln as approved by Engineer-in-charge.

1.0 EARTH WORK

- 1.1 The work shall be done in accordance with CPWD specifications.
- 1.2 The earthwork in excavation, wherever required, shall be carried out in slushy position. Rates for earthwork shall include cost of the element for working in or under water / liquid mud including pumping of water / liquid mud. Nothing extra shall be payable on this account. Therefore, the Contractor shall quote his rates after studying the site conditions.
- 1.3 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.
- 1.4 De-watering shall be carried out by suitable means with adequate stand-by arrangements of pumps etc. and it shall be ensured that its disposal is carried out as per the regulations of the local bodies. The agencies are, therefore, advised to inspect and acquaint themselves of the site and location of disposal point(s) of water / slush and satisfy themselves as regards method of pumping and disposal required to be adopted. Any default or failure on the part of the Contractor to acquaint himself with the aforesaid aspect of work shall not absolve him from his responsibility for the execution / performance of this contract. Also, all permissions in this regard, to be taken from local authorities, shall be obtained by the Contractor. Nothing extra shall be payable on these accounts.
- 1.5 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.
- 1.6 The cost of de watering or working under water and / or liquid mud for execution of all the items for the work is deemed to be included in quoted rates of the respective items and shall not be measured separately for payment. Nothing extra shall be payable for de watering in this work, irrespective of whether specified or not, in the item descriptions or in the specifications / conditions in this contract agreement.
- 1.7 This shall also include water encountered from any source such as rains, floods, sub soil water table being high and/or due to any other cause whatsoever.

2.0 RCC WORK

- 2.1 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including 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 SE & PD, Rajarhat CPWD 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

2.6 DESIGN MIX CONCRETE:

The contractor shall be required to submit two separate design mix of concrete with and without using plasticizers, separately for Ready mix concrete. The decision of the engineer-in-charge to specify the design mix of concrete based on above shall be final.

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 chlorides content in the admixture shall satisfy the requirements of BS: 5075. The total amount of chlorides admixture mixed concrete shall also satisfy the requirements of IS: 456. 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:

	Grade designation	Compressive strength on 15 cm cubes min. 7 days (N/mm ²)	Specified characteristic compressive strength at 28 days (N/mm ²)	Minimum cement quantity (Kg. per cum. Mtr.)	Maximum water cement ratio
i	M 25	As per design	25	330	0.50
ii	M 30	As per design	30	340	0.45
iii	M 35	As per design	35	350	0.45
iv	M 40	As per design	40	360	0.40

Note-

- 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
- The minimum/maximum cement content for design mix concrete shall be maintained as per the quantity mentioned above.

- (iii) Design slump has to be constantly monitored and maintained during placing of concrete through slump tests carried out as per CPWD specification 2019 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) Jadavpur
- (ii) IIT, Kharagpur
- (iii) IEST, Shibpur
- (iv) Approved Govt. Engineering Institutions as directed by the Engineer-in-charge.

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 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 above mentioned approved laboratory shall be submitted by the contractor as per the direction of the Engineer-in-Charge. No payment will be made for revised mix design.

2.7 APPROVAL OF DESIGN MIX

The mix design for a specified grade of concrete shall be done for a target mean compressive strength $T_{ck} = F_{ck} + 1.65s$.

Where F_{ck} = 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 bellows:

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 specimens of each set three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days.

- 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 batching plant shall conform to IS:4925. 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

- (i) In case the test result of all the samples is above the characteristic compressive strength, the concrete shall be accepted.
- (ii) In case the test result of one or more samples fails to meet the requirement (i) above it shall be accepted if both the following conditions are met:
 - a) Any individual test result is not less than $(F_{ck} - 3) \text{ N/mm}^2$
 - b) The mean of test result from any group of four consecutive samples is more than $(F_{ck} + 3) \text{ N/mm}^2$.
- (iii) Concrete of each grade shall be assessed separately
- (iv) Concrete is liable to be rejected if it is porous or honeycombed, its placing has been interrupted without providing a proper construction joint the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been

met. However the hardened concrete may be accepted after carrying out suitable remedial measures to the satisfaction of the Engineer-in-Charge for which nothing extra is payable to the contractor

- 2.13 Only MS centering/shuttering 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.
- 2.14 In case of actual average compressive strength being less than specified strength which shall be governed by para "Standard of Acceptance" as above the rate payable shall be worked out accordingly on pro rata basis.

2.15 Ultrasonic Pulse Velocity Method of Test for RCC

- i) The underlying principle of assessing the quality of concrete is that comparatively higher velocities are obtained when the quality of concrete in terms of density, homogeneity and uniformly is good. The consistency of the concrete as regards its general quality gets established. In case of poorer quality lower velocities are obtained. If there are cracks, voids or flaws inside the concrete which come in the way of transmission of pulse, lower velocities are obtained.
- ii) The quality of concrete in terms of uniformity, incidence or absence of internal flaws, cracks and segregation etc. indicative of the level of workmanship employed, can thus be assessed using the guidance given in table below, which have been evolved for characterizing the quality concrete in structure in term of the ultrasonic pulse velocity.

Velocity criterion for Concrete Quality Grading.

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

Note : In Case of "doubtful" quality it may be necessary to carry further tests.

- iii) Pulse velocity method of test of concrete is to be conducted for CPWD works as a routine test. The acceptance criteria as per the above table will be applicable which is as per IS 13311 (part-1): 1992. From the above "Good" and "Excellent" grading are acceptable and below these grading the concrete will not be acceptable.
- iv) 5% of the total number of RCC members in each category i.e. beam, column, slab and footing may be tested by UPV test method for establishing quality of concrete. It is suggested that test be conducted on RCC beam near joint with column, on RCC column near joint with beam, on RCC footings and rafts. On RCC rafts a suitable grid can be worked out for determining number of tests. In addition doubtful areas such as honeycombed locations, locations, where continuous seepage is observed, construction joints and visible loose pockets will also be tested.

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

2.16 Necessary arrangements shall be made for field tests and all required equipment's shall be arranged 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.

SAMPLE POUR CARD FOR RCC WORK

Name of work: ~~Construction of a new campus for Canara Bank at Plot Nos. CBD 97, 98 and 99, Financial Hub, Rajarhat, New Town, Kolkata. SH: Construction of a (G+5) storied RCC building with RCC pile foundation. Sub work: Construction of compound wall i/c Providing of LED Façade lighting around plot no. CBZ 97, 98, 99 of Canara Bank located in financial hub at new town, Kolkata.~~

1.0 GENERAL

- 1.1 Name of Agency :
- 1.2 Structural Element:
- 1.3 Location :
- 1.4 Architectural drawing No:
- 1.5 Structural drawing No:
- 1.6 Approximate quantity and grade of concrete :
- 1.7 Expected start time :
- 1.8 Expected finish time :
- 1.9 Name of Contractor's Engineer :

2.0 CENTRING TYPE

- 2.1 Adequate vertical supports Y/N
- 2.2 Adequate lateral supports Y/N

3.0 SHUTTERING TYPE

- 3.1 Cleaned Y/N
- 3.2 Oiled Y/N
- 3.3 Leveled Y/N
- 3.4 Holes plugged Y/N

4.0 REINFORCEMENT TYPE

- 4.1 Cover blocks Y/N
- 4.2 Conforms to Drawings Y/N
- 4.3 Tied Properly Y/N

4.4 Space Bars / chairs	Y/N
4.5 Pre-stressing operations completed	Y/N
5.0 CONCRETE	TYPE
5.1 Plant informed about mix and type	Y/N
5.2 Transit mixer ready	Y/N
5.3 Tower crane ready	Y/N
5.4 Concrete pump ready	Y/N
5.5 Vibrators (Electrical & Diesel Ready)	Y/N
5.6 Predetermined Holes left wherever required	Y/N
5.7 Boards for construction joints	Y/N
5.8 Conduits placed in position	Y/N
5.9 Fan clamps placed in position	Y/N
5.10 Steel templates	Y/N
5.11 Cement slurry	Y/N

Date:

The above information filled by me after proper verification

(SITE ENGINEER OF FIRM)

The above information checked by me

(ASSISTANT ENGINEER)

CONCRETING MAY BE ALLOWED

(EXECUTIVE ENGINEER)

3.0 PRE-CAST RCC WORK

- 3.1 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks, flats etc. And forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer-in-Charge before taking up the work.
- 3.2 Pre-cast units shall be clearly marked to indicate the top of member and its locations.
- 3.3 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.

4.0 BRICK WORK

- 4.1 The work shall be carried out as per the CPWD specifications.
- 4.2 RCC mullions of required size shall be provided in half brick and in full brick wall wherever required for fixing the door as per direction of Engineer-in-charge. The cost of concrete and steel shall be paid in relevant item. However, the cost for drilling steel bars in RCC/CC/Brick for mullion is included in item and shall not be paid extra.

5.0 Particular Specifications for Flooring & Dado / Cladding

- 5.1 General (applicable for all kinds of flooring and dado / cladding works under this sub-head):
 - 5.1.1 The work under this sub-head in general shall be carried out as per the CPWD Specifications, as per the architectural drawings and as per the direction of Engineer-in-Charge.
 - 5.1.2 The Engineer-in-Charge or his representative may, if required, visit the source of supply of the various stones to assess the quality as well as availability of the material in the required quantities. The Department shall bear the cost of such visits of the officers of the Department.
 - 5.1.3 Based on the samples approved by the Engineer-in-Charge for various flooring and dado /cladding materials as specified hereinafter, the contractor shall prepare mock up(s) at site of work as specified under relevant flooring and dado / cladding items, for approval of quality of workman ship and material specified. If the quality of the workmanship and the material is asper the required standards and approved by the Engineer-in- Charge, the mock up shall be allowed as part of the work and measured for payment. Otherwise, it shall be dismantled by the contractor as directed by the Engineer-in-Charge and taken away from the site of the work at his own cost. The mock up(s) so made shall be kept till completion of respective works for reference. Nothing extra shall be payable on this account.
 - 5.1.4 The stones / tiles shall be transported to site well packed in boxes or otherwise. These shall be handled carefully to prevent any damage. The various types of stones and tiles, procured shall be free of any surface defect or any edge damage. The damaged stones and tiles shall not be allowed to be used in the work. So, the contractor shall procure additional quantity of the stone and tiles to cover such contingencies. However, nothing extra shall be payable on this account.
 - 5.1.5 For the enclosures with circular or curved profile, only the actual area of the flooring shall be measured for payment and nothing extra shall be payable for labour, material, wastages and any other incidental charges.

- 5.1.6 For the skirting in the enclosures with curvilinear profiles, the tiles / stones shall be cut to the required size and the shape to match the profile and/ or the joints as per the architectural drawings. Similarly, the skirting shall be fixed in a manner as to flush or project from the finished face of the wall as per the architectural drawings and as directed by the Engineer – in– Charge. Any chasing of the CC/Brick masonry works required for such fixing is deemed to be included in the cost of masonry. Nothing extra shall be payable on this account.
- 5.1.7 For flooring work, the joints between the different types of flooring shall be located as per the architectural drawings and the measurement shall be done as per item description. Also, the Contractor shall maintain the uniform level of the finished flooring of the different types unless specifically mentioned on the architectural drawings. Nothing extra shall be payable on these accounts.
- 5.1.8 All the flooring works specified under this sub-head shall be adequately protected by a layer of plaster of paris which shall be laid over a 400 micron PVC film. The protective layer shall be maintained throughout the execution of works and removed just before handing over of the site for which nothing extra shall be payable.
- 5.1.9 At the time of handing over, flooring & dado / cladding shall be free of any scratches, stains etc. The flooring & dado / cladding shall be properly cleaned before handing over. However, abrasive cleaners shall not be used to clean the marks and other scratches.

5.2 Granite stone work

- 5.2.1 The Contractor shall procure and submit the samples of different types of granite stones, for the approval of the Engineer-in-charge prior to the execution of the item.
- 5.2.2 The mock up (one each) shall be prepared in staircase, lift wall and lift lobby, kitchen counter and window sill.
- 5.2.3 The entire supply for each type of granite stone slab shall be procured from one location (in one quarry), and supplied preferably, in one lot to keep variations to the minimum. The Contractor shall also segregate and sort the slabs according to colour, shade, texture and size of grains etc. to keep variation(s) in stones used at any one location to the minimum. Any slab with variation in the colour, shade, texture and size of grains etc., not acceptable to the Engineer-in-Charge, shall not be used in the work and shall be removed and replaced by the Contractor. Nothing extra shall be payable on these accounts. Also no claim of any kind shall be entertained from the Contractor on this account.
- 5.2.4 Granite stone slabs shall be pre polished (mirror polished) or given any other surface treatment as specified in the item nomenclature, as per the Architectural drawings and as directed by the Engineer-in-Charge.
- 5.2.5 Machine polishing and cutting to required size shall be done with water (as lubricant) only. Sawing shall also be done preferably with water as lubricant but as a special case, the Engineer-in-Charge may permit, at his discretion, oil or kerosene as lubricant subject to all kerosene or oil in the body and surface of tiles / slabs being thoroughly dried in ovens. Tiles /slabs with stains or patches due to the use of oil or otherwise, either before or after

installation, shall be rejected and shall be replaced by the Contractor at his own cost. Nothing extra shall be payable on this account.

- 5.2.6 The stone work may be required to be carried out in patterns, design and / or in combination with granite stones of different colour and shade with or without borders and in combination of different stone slabs / tiles for which nothing extra shall be payable. The stones shall be provided in sizes and shapes as per the architectural drawings and wastages and incidental costs, if any, shall be deemed to be covered in the cost of the relevant items. Nothing extra shall be payable on this account.
- 5.2.7 For the flooring portions curved in plan, the stone slabs (at the edge) shall be cut to the required profile and shape as per the architectural drawings. Nothing extra shall be payable on this account and any consequent wastages and incidental charges on such accounts shall be deemed to be included in the cost of such items. For the purpose of payment, the actual area of granite stone shall be measured separately as specified under the relevant items.
- 5.2.8 The granite slabs used for providing and fixing on the tread of stairs, sills, soffits and jambs of doors, windows, ventilators and similar locations shall be in single piece unless otherwise directed by the Engineer-in-Charge. Wherever stone slab other than in single piece is allowed to be fixed, the joints shall be provided as per the architectural drawings and as per the directions of the Engineer-in-Charge. In the cabin areas, the joints in sills shall preferably be provided in line with the partition wall. Depending on the number of joints, as far as possible, the stone slabs shall be procured and fixed in slabs of equal lengths as per the architectural drawings and as directed by Engineer-in-Charge.
- 5.2.9 The specifications for dressing, laying, curing, finishing, measurements, rate etc. for the granite stone flooring shall be same as that of works for the Marble flooring, skirting and risers of steps under Flooring Sub Head of the CPWD Specifications. The wall lining / veneer work with granite stone shall be as per the CPWD Specifications for Marble work Sub Head.

5.3 Vitrified and ceramic tiles work

- 5.3.1 The contractor shall procure and submit the samples of approved make, shade and thickness of different types of vitrified and ceramic tiles, for the approval of the Engineer-in-charge prior to the execution of the item.
- 5.3.2 The mock up (one each) shall be prepared for flooring and dado, for vitrified tiles etc.
- 5.3.3 The entire supply for each type of tiles shall be procured from one manufacturer / authorized dealer, preferably, in one lot to keep variations to the minimum.
- 5.3.4 The tiling work may be required to be carried out in patterns, design and / or in combination with tiles of different colour and shade and in combination of different stone slabs / tiles for which nothing extra shall be payable. The tiles shall be provided as per the architectural drawings and wastages and incidental costs, if any, shall be deemed to be covered in the cost of the relevant items. Nothing extra shall be payable on this account.
- 5.3.5 For the flooring portions curved in plan, the tiles (at the edge) shall be cut to the required profile and shape as per the architectural drawings. Nothing extra shall be payable on this

account and any consequent wastages and incidental charges on such accounts shall be deemed to be included in the cost of such items.

- 5.3.6 The Contractor shall obtain and submit to the Department the manufacturer's test certificate for compliance of various parameters for the material as per the manufacturer's specifications, with each lot of material received at site.
- 5.3.7 The flooring and dado / cladding should be set out such that the perimeter/ corner tiles are in excess of half a tile so that the edge panels on both the sides are of equal sizes, as far as possible. The tiles shall be cut to required size and shape in a workman like manner but with all precautions, as per the manufacturer's specifications.
- 5.3.8 For dado / cladding / skirting work, the tiles shall be chamfered at the meeting edges on the corners in a manner that butt edges are not visible. It shall be ensured that the edges shall be ground / filed to chamfer the edges so that the glazing layer at the edges of the tiles is not chipped off otherwise the work shall be rejected and redone by the Contractor at his own cost.

5.4 Particular Specifications – Roofing (False ceiling)

General (applicable for all kinds of roofing works under this sub-head):

- 5.4.1 The work in general shall be carried out as per the CPWD specifications, as per the manufacturer's specifications, as per architectural drawings and as per directions of Engineer in-Charge.
- 5.4.2 Various false ceiling shall be done in different levels in linear and curvilinear pattern in plan and elevation and in combination with other types of false ceiling as specified in schedule of quantities, as per the architectural drawings. However, payment shall be made under respective items.
- 5.4.3 The tiles and the suspension system shall be as specified in the item nomenclature. The contractor shall procure and submit the samples of tiles and grid system of approved make, for the approval of the Engineer-in-charge prior to execution of the item.
- 5.4.4 The Contractor shall prepare the mock-up at site for approval of material and quality of workmanship by the Engineer-in-Charge. Only after the approval of Mock-up, the Contractor shall start the mass work. If the quality of the workmanship and the material is as per the required standards and approved by the Engineer-in- Charge, the mock up shall be allowed as part of the work and measured for payment. Otherwise, it shall be dismantled by the contractor as directed by the Engineer-in-Charge and taken away from the site of the work at his own cost. The mock up(s) so made shall be kept till completion of respective works for reference. Nothing extra shall be payable on this account.
- 5.4.5 Once the material and mock up are approved, the entire material (tiles as well as grid system) shall be procured from the approved manufacturer or its authorized dealer.
- 5.4.6 The installation shall be got done through an experienced installer, executing similar works.
- 5.4.7 The material shall be transported to site well packed. The ceiling material procured shall be free of any surface defect, edge damage and any other such defects. The contractor shall

ensure careful handling and storage and prevent any rough handling, rolling of cartons or dropping cartons to prevent any edge damage or breakage. The defective / damaged material shall not be allowed to be used in the work. So, the contractor shall procure additional quantity of material to cover such contingencies. However, nothing extra shall be payable on this account.

- 5.4.8 Adequate care shall be taken before installation as well as afterwards till completion of the work. It shall be protected from rains, excessive humidity, chemical fumes, vibrations, dust etc. Any tile with edge damaged or crack etc. shall not be allowed to be used in the work and shall be replaced by the contractor at his own cost. Similarly, adequate care shall be taken by the contractor while placing or removing and handling the tiles so as not to cause any damage. The ceiling shall be cleaned as per manufacturer's specifications. Abrasive cleaners shall not be used to clean the marks.
- 5.4.9 The Contractor shall obtain and submit to the Department the manufacturer's test certificate /report for compliance of the material to the relevant standards along with each lot of material supplied for the work.
- 5.4.10 The suspension system for various types of false ceiling shall be as per manufacturer's specifications. The false ceiling tiles shall be fixed on to coordinated suspension ceiling system with supporting grids system that fully integrates with the ceiling tiles as per manufacturer's specifications. It shall be ensured that the suspension system shall be suitable to take all designed dead, imposed and all incidental loads efficiently and shall not sag. The true line and levels for false ceiling work shall be maintained.
- 5.4.11 The luminaries, air grills / diffusers, signages 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.
- 5.4.12 The rate for the item of various false ceiling system 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. However, for the purpose of payment only the actual area of the false ceiling shall be measured in sqm.

6.0 SANITARY INSTALLATIONS, WATER SUPPLY AND DRAINAGE

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

- (i) The entire plumbing drawing and sanitary installation drawing/ details shall be submitted by the contractor and got approved by the Engineer-in-Charge before the execution.
 - (ii) The entire responsibility for the quality of work will however rest with the building contractor only.
- 6.2 The work of water supply, internal sanitary installations and drainage etc. shall be carried out as per the bylaws of the Municipal Corporation or any other local body and the contractor shall produce necessary completion certificates from such authority after completion of work.
- 6.3 All water tanks, taps, sanitary, water supply and drainage pipes fittings and accessories etc. shall conform to the bylaws and specifications of the Municipal Body/Corporation where CPWD specifications are not available.
- 6.4 The contractor shall engage licensed plumbers for the work and the materials (fixtures/fittings) tested by the local Municipal Body/Corporation wherever required at his own cost. Nothing extra shall be paid/reimbursed for the same.
- 6.5 The contractor shall give a performance test of the entire installation(s) as per standing specifications before the work is finally accepted by making his own arrangements for water supply, electricity etc. and nothing extra whatsoever shall be payable for the same.
- 6.6 The work in general shall be carried out as per CPWD specifications. Rate includes all materials, labour and all the operations mentioned in the respective items unless and other wise specifically mentioned.
- 6.7 The contractor shall give a satisfactory performance test of the entire installation (s) before the work is finally accepted and nothing extra shall be payable to the contractor on this account.
- 6.8 P or S and floor traps (long arm upto 900 mm length or more) in WCs shall be of deep seal type of RIF make or equivalent and shall have a minimum water seal of 75 mm. Floor traps (long arm upto 900 mm length or more) shall have a minimum water seal of 50 mm.
- 6.9 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.
- 6.10 The pig lead for caulking of joints of SCI pipes shall be used as per the CPWD Specifications.
- 6.11 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.
- 6.12 The work shall carry two years guarantee after expiry of maintenance period prescribed in the contract against unsound material, workmanship and any defect as per guarantee bond. Two years guarantee in prescribed Performa given in this NIT must be given by the specialized firm, which shall be counter signed by the contractor, in token of his overall responsibility. 10% (ten percent) of the cost of these items would be retained as security deposit and the amount so deducted would be released two years after expiry of maintenance period prescribed in the contract agreement, if the performance of the items is found satisfactory. If any defect is noticed

during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

7.0 Aluminium doors, windows, ventilators etc. glazing specifications

- 7.1 **Extent and Intent:** - The work shall be carried out in the factory/site work shop through an approved Special Agency, who shall furnish all material, labour, accessories, equipment, tool and plants and incidentals required for providing and installing anodized/powder coated aluminium doors, windows, claddings, louvers and other items as called for on the drawings. The drawings and specifications cover the major requirements only. The supplying of additional fastenings, accessories, fixtures and other items not mentioned specifically herein, but which are necessary to make a complete installation shall be a part of this contract. Hinges for openable panel shall be stainless steel friction hinges / stays selected for specified wind load and dead loads or specifically extruded in-built hinges.
- 7.2 **General:** - Aluminium doors, windows etc. shall be of sizes, section details as shown on the Architectural drawings. The details shown on the drawings indicate generally the sizes of the component parts and general standards. These may be varied slightly to suit the standard adopted by the manufacturers. 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.
- 7.3 **Shop Drawings:** - The contractor shall submit the shop drawings of doors, windows, louvers, cladding and other aluminium work, based on the architectural drawings to the Engineer-in-Charge for his approval. The shop drawing 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.
- 7.4 **Samples:** - Samples of doors, windows louvers etc. shall be fabricated, assembled in the factory/site work shop and submitted to 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.
- 7.5 **Sections:** - Aluminium doors and windows shall be fabricated from extruded sections of profiles as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineer-in-Charge. The aluminium extruded sections shall conform to BIS designation IIE/IIV 9 WP alloy, with chemical composition technical properties, as per IS: 733 and IS: 1285. The permissible tolerance of the extruded sections shall be such as not to impair the proper and smooth function/ operations and appearance of doors and windows.
- 7.6 **Fabrication:** - Doors, windows etc. shall be fabricated to sizes at factory/site work shop and shall be of section, sizes, combinations and details as shown on the drawings. All doors, windows etc. shall have mechanical joints. The joints shall be designed to withstand a minimum wind load of 150 Kg. per Sqm. The design shall also incur that the maximum deflection of any member shall not exceed 1/175 of the span of the member. All members shall be accurately machined and fitted to form hairline joints prior to assembly. The joints accessories such as cleats, brackets etc. shall be of such material as not to cause any bimetallic action. The design of the joints and accessories shall be such that the accessories are fully concealed. 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 fixture as approved by the Architect.

- 7.7 Anodizing/ powder coating:** - All aluminium sections shall be Powder coated (minimum 50 micron thickness) as per requirement as per IS: 7088 and to required colour as specified in the item as per IS: 1868 grading as specified in item schedule after cutting the member to requisite sizes before the final assembly. Powder coating shall be of minimum 50 micron thickness. Anodizing confirming to specified grade with minimum average thickness of 15 microns when measured as per IS: 612. The anodic coating shall be properly sealed by steams or in boiling water are cold sealing process as per IS:1868/IS: 6057. Polythene tape protection shall be applied on the anodised section before they are brought to site. All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation. The sample will be tested in the approved laboratory and cost of samples; etc. shall be borne by the contractor.
- 7.8 Protection of finish:** - All aluminium members shall be wrapped with approved self-adhesive non-staining. PVC tapes.
- 7.9 Handling and Stacking:** -
- 7.9.1** Fabricated materials shall be carried 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 material at site, it shall be carefully examined to detect any damaged pieces. Arrangements shall be made for expeditious replacement of damaged pieces/ parts. Materials found to be acceptable on inspections shall be repacked in crates and stored safely.
- 7.9.2** 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 out how to be assembled in their final locations if situation so warrants.
- 7.9.3** The contractor shall be responsible for assembling composite, bedding and filling the grove with polysulphide sealant inside and outside, at transoms and mullions placing the doors, windows etc. in their respective openings. 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 finished neat.
- 7.9.4** The contractor shall be responsible for doors, windows, etc. being set straight, plumb, level and for their satisfactory/site work shop operation after fixing is complete.
- 7.10 Installation:**
- 7.10.1** Just prior to installation the doors, windows, etc. shall be uncreated 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 manufacture and in an approved manner. The holes in concrete/masonry members for housing anchor bolts shall be drilled with an electric drill.
- 7.10.2** The door/ windows assembled as shown on drawings shall be placed in correct final position on the 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 holes 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 nut 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 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 supports and be plumbed in position. The wedges shall invariably be placed at the meeting at points of glazing bars and frame.

- 7.11 **EPDM Rubber / Neoprene gaskets:** The contractor shall provide and install EPDM Rubber / 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 contractor shall produce samples of the gaskets for approval and shall procure the same after approval only.
- 7.12 **Fittings:** Hinges, stays, handles, tower bolts, locks and other fittings shall be of quality and manufacturer as approved by the Engineer-in-Charge.
- 7.13 **Manufacturer's Attendance:** The manufacturer immediately prior to the commencement of glazing shall adjust and set all windows and doors and accept responsibility for the satisfactory working of the opening frames.
- 7.14 **Poly-sulphide:** The gaps between frames and supports and also any gaps in the door and windows sections shall be raked out as directed and filled with poly-sulphide of approved colour and make to ensure complete water tightness. The poly-sulphide shall be of such colour and composition that it would not stain the masonry/concrete work, shall receive paint without bleeding, will not sag or run and shall not set hard or dry out under any conditions of weather. The sample of poly-sulphide to be used for this purpose shall be got approved from the Engineer-in-Charge before its actual use.

7.15 **Details of Test :**

7.15.1 The various tests on aluminium sections shall be conducted in accordance with the relevant IS codes.

7.15.2 The minimum number of tests for anodizing/powder coating and corrosion resistance shall be as given below: -

S. No.	Details	No. of Tests
1	Doors, windows and ventilators	One test for every 1000 kg or part thereof.

7.15.3 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 aluminium section shall be got tested.

7.16 **Acceptance Criteria:** - The aluminium work shall carry two years guarantee after expiry of maintenance period prescribed in the contract against unsound material, workmanship and defective anodizing/ powder coating as per guarantee bond. Two years guarantee in prescribed Performa given in this NIT must be given by the specialized firm, which shall be counter signed

by the contractor, in token of his overall responsibility. **1% (one percent)** of the cost of these items would be retained as security deposit and the amount so deducted would be released two years after expiry of maintenance period prescribed in the contract agreement, if the performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount is produced and deposited with the department.

7.17 Rates: -

7.17.1 The rates of the item shall include the cost of materials, labour required in all the above operations.

7.17.2 The rates exclude the cost of stainless steel friction hinges / stays selected for specified wind load and dead loads or specifically extruded in-built hinges, and rest of the fittings shall also be paid separately.

7.18 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a **Guarantee Bond as per Proforma attached. 1% (one percent) of the cost of these** items would be retained as security deposit and the amount so deducted would be released after **two years** from the date of expiry of maintenance period of the agreement, if the performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount is produced and deposited with the department.

8.0 WATER PROOFING TREATMENT

Providing and laying water proofing membranes on roof slab of the building using two component liquid applied Polyurea membrane applied by brush, roller, spray from the approved makes by Engineer in charge. Before application the surface shall be well prepared to achieve a smooth and even surface. Dust shall be removed by air blower. Epoxy solvent primer shall be applied with consumption of 200 gm per square meter. After the surface is cured for 6 hours the water proofing membrane shall be applied in two coats to achieve a dry film thickness of 1.5 mm. (Theoretical consumption of Polyurea not less than 2.2 kg/sqm).

The cured membrane shall be covered with Geotextile of minimum 150 GSM to protect the membranes from filling materials. The tensile strength of membranes shall not be less than 20 N/mm² and elongation shall not be less than 300%. The rate includes all materials such as Polyurea membrane, priming coat, geotextile, surface preparation, labour for application of membrane, taxes all inclusive and the work shall be completed in all respects as per the manufacturers specification and the direction of Engineer in charge.

The contractor must associate himself with the specialized firm -authorized applicator of the manufacturer to be approved by the Engineer-in-Charge in writing for sunken floors and on roofs. A five

(5) years Guarantee Bond in prescribed Performa as specified in this document must be given by the specialized firm on stamp paper which shall be countersigned by the contractor, in token of his overall responsibility. **In addition 10% (ten percent) of the cost of these items would be retained as Guarantee Bond to watch the performance of the work done.** If any defect is noticed during the Guarantee period for five years to be reckoned from the date after the maintenance period prescribed in the contract expires it should be rectified by the contractor within seven days and if not attended to, the same will be got done by another agency at the risk and cost of the contractor. However, this security deposit can be released in full, if bank guarantee of equivalent amount for 5 (five) years is produced and deposited with the department.

9.0 Condition for Ready mix concrete

- 9.1 The cost of packaging, sealing, transportation, loading, unloading, cost of samples and the testing charges for mix design in all cases shall be borne by the contractor.
- 9.2 Ready mix concrete as per approved design mix shall be arranged by the contractor from ACC, Ambuja, UltraTech, Nuvoco(Lafarge) or as approved by Engineer-in-Charge.
- 9.3 The contractor shall arrange Ready Mix Concrete from RMC producing plants (within 30 KM distance from the site of work) supplying concrete.
- 9.4 For procurement of ready mix concrete from RMC Plants, the contractor shall submit name of RMC Plant Companies of repute along with details of such Plants, including details of transit mixer with pumps etc. to be deployed indicating name of owner /company, its location, capacity, technical establishment, past experience and text of MOU proposed to be entered between purchaser (the contractor) and supplier (RMC Plant) to the Engineer-in-Charge. Engineer-in-Charge shall give approval in writing (subject of drawl of MOU). The contractor shall draw the MOU with approved RMC Plant Owner/Company and submit to Engineer-in-Charge within a week of such approval.
- 9.5 The Engineer –in-Charge will reserve right to inspect at any such stage, and reject the concrete if he is not satisfied about quality of product. The contractor should therefore, draw MOU/Agreement with RMC Owner/Company very carefully keeping all terms and conditions/specifications forming a part of this tender document.
- 9.4 The Engineer-in-Charge reserves the right to exercise control over the : ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recordings of test results and declaring the materials fit or unfit for use in production of mix.
- 9.5 Calibration Checks of the RMC. Weight and quantity check on the ingredients, water and admixtures added for batch mixing.
 - (i) Time of mixing of concrete.
 - (ii) Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action.
- 9.6 PPC of brand/make/source as approved by Engineer-in-Charge shall only be used for production of concrete.
- 9.7 The item of design mix cement concrete shall be inclusive of all the ingredients including admixtures if required, labour, machinery T&P, transportation etc. (except shuttering which will be measured and paid for separately) required for a design mix concrete of required strength and workability. The rate quoted by the agency shall be net and nothing extra shall be payable on account of change in quantities of concrete ingredients like aggregates and admixtures etc. as per the approved mix design.

- 9.8 90% of Mandatory test as per CPWD specification for aggregates, cement, water shall be done at Site laboratory in presence of Contractors Engineers, authorized representative of RMC plants.
- 9.9 10% of Mandatory test as per CPWD specification for aggregates, cement, water shall be done from laboratory as mentioned in 2.6.8 of Particular specifications
- 9.10 Slump test shall be done during unloading of RMC from transit mixer in presence of Contractors Engineers, authorized representative of RMC plants at site.
- 9.11 Cube sample of compressive strength shall be taken during unloading of RMC from transit mixer in presence of Contractors Engineers, authorized representative of RMC plants at site.

10.0 Fire check doors

- 10.1 The doors shall be procured from approved manufacturer(s) only.
- 10.2 The fire check door shall not collapse during of hot gases or the flames through the rebate of the gap between the door frame and shutter or through the holes, developed in the shutter during fire.
- 10.3 Door frame and shutter shall be manufactured as per the nomenclature of the items.
- 10.4 Door fitting & fixture shall be provided as per the nomenclature of the items.
- 10.5 **Specification:** The Fire Check doors shall satisfy:
- 10.5.1 **STABILITY:** The fire check door should not collapse during the rated period of 2 hours fire under the specified fire conditions. The fire check doors provide safe access to the escape route in the building namely protected corridors and staircase.

10.5.2 INTERGRITY:

The fire check doors should not allow the passage of hot gases or the flames or the flames through the rebate or the gap between the door frame and shutters for the duration of its fire rating.

10.5.3 INSULATION:

The mean temperature of fire door on unexposed side should not exceed 140 degree C above ambient temperature for the duration of its fire rating.

The fire/smoke check door assembly being offered shall be as proto-type tested by CBRI, Roorkee, for the prescribed fire – rating as per BS: 476 part 20/22 IS: 3614 Part-II.

A test report from CBRI, Roorkee/IIT Gandhinagar shall be submitted for approval before executing the work.

The Fire / Smoke check doors should also have Tariff Advisory Committee approval as admissible.

The contractor shall employ specialized agency or manufacturer of the fire check door assembly, having their own manufacturing facilities and such agency shall be got approved by the Engineer-in-Charge.

Door frame and shutter in general, be fabricated as per nomenclature of the item of the work and recommendation of the specialized agencies as approved by the Engineer-in-Charge.

- 10.5.4. Fire check doors shall be of 2 hour fire rated and shall satisfy the three performance criteria of stability, integrity and insulation as per BS 476 part-22 and IS 3614 part-II.

- 10.5.5. Tenderer shall be responsible for obtaining “No objection Certification from CFO for the executed work.”

10.6 GUARANTEE BOND:

- (i) **The work shall be guaranteed for a period of five years from the date of N.O.C. issued by the Competent Authority.**
- (ii) **The security deposit @ 5% against this item of work shall be in addition to the security deposit mentioned in schedule-F.**
- (iii) The contractor shall execute the necessary guarantee bond against any structural defect, faulty materials, workmanship and defective finish. In addition 5% (five percent) of the

cost of this item of work shall be retained as security deposit and the amount so withheld would be released after five years from the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period, it shall be rectified by the contractor along with any incidental repairs to structure, flooring, finishing, fixtures and any other related damaged work within fifteen days of receipt of intimation of such defects in the work. If the defects pointed out are not attended to with the specified period, the same shall be got done from another agency at the risk and cost of the contractor and the cost of attending such repairs shall be deducted from any dues payable to the contractors. However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Engineer-in-Charge in the prescribed proforma.

10.7 HERMETICALLY SEALED UNIT

Insulating glass shall be a double glazed unit comprising two sheets of approved glass panes separated by a spacer, hermetically sealed using primary and secondary sealants.

The design of insulating glass system shall consist of :

a) HOLLOW SPACER BAR :

The hollow aluminium spacer bar shall be of required size and shape and shall be colour anodized. The spacer bar shall have two lines of perforations in the inner surface.

b) DESICCANT:

The desiccant filled in the aluminium spacer bar shall be synthesized crystalline compounds of Aluminium Hydroxide, Caustic Soda and Sodium Silicate which absorbs water molecules. The desiccant shall be of 3 A size (A means Angstrom). The quantity of desiccant used shall not be less than 35 gm/m length of spacer bar. Filled spacer bar frame shall not be stored for more than 6 hrs. before assembly and sealing of the unit to ensure proper functioning of the desiccant. The contractor shall submit documentary proof of using the above material in the work.

c) PRIMARY SEALANT :

The primary sealant BUTYL (NAFTOTHERM BU" or equivalent) shall be single component, thermo plastic solvent free sealing compound based on polyisobutylene. The sealant surface shall be free from cavities, depression and other defects. The contractor shall submit documentary proofing of using the above material in this work.

d) SECONDARY SEALANT :

The secondary sealant in double glazed unit shall be silicone sealant. The contractor shall submit documentary proof of using the above material in this work to the entire satisfaction of Engineer-in-Charge. Before application of silicone/polysulphide, the surface shall be cleaned and free from oil, grease, dust and other loose matter. The surface shall be cleaned with alcohol or other suitable solvents. Detergent or soap shall not be used to clean the surfaces. The polysulphide shall be mixed and applied mechanically using automatic mixing machine in the manner approved by Engineer-in-Charge.

1.8 TESTING:- One door assembly shall be selected at random out of the entire lot, one for single leaf and one for double leaf and shall be tested for two hours fire rating. The testing shall be got done from CBRI, Roorkee or any other test laboratory approved by the Engineer-in-charge. The cost of materials, for testing and transportation/packing, testing charges and other incidental charges, shall be borne by the contractor. In case the door fails to meet the requirement, the entire lot shall be rejected.

11.0 uPVC WINDOW SYSTEMS

All open able and fixed window system shall have minimum 3 hollow chambers from front to back. The sliding system frames shall have minimum 3 chambers from front to back. The Sliding system Sashes shall have minimum 2 chambers from front to back. The outer profile shall not be less than 56 mm. All sections of the frame and sash shall be reinforced in accordance with the system supplier's recommendations using galvanized mild steel in a single continuous length.

GENERAL REQUIREMENTS

Profile: The profile is to be extruded from a compound that has been blended to ensure quality and consistency. The material shall be pristine white high impact modified window grade uPVC and shall be colorfast and conform to BS EN 12608:2003 as below:-

Description of Material	Required Value
Flexural modulus of Elasticity	Shall not be less than 2200 N/mm ²
Resistance to impact by falling mass at – 10 °C for Class II (falling mass 1000g ; falling height 1500mm – as per BS EN 12608:2003)	not more than 1 test specimen shall show rupture in wall
Mean Breaking Stress for welded corners	Shall not be less than 35N/mm ² for compression bending test or 25N/ mm ² for tensile bending test

The profile shall be a hollow 3-chamber (across depth) profile with a outer wall thickness not less than 2.4 mm. The profile shall be of first grade/quality uniform and free from foreign bodies, cracks or marks. Fabrication of Window

- i) The window units shall be designed with all corner joints, transom joints and mullion joints being mitred and fusion welded.
- ii) All excess material is to be neatly trimmed and neatly feature grooved/raised nib finish at corners, transom joints and mullion joints.
- iii) There will be no mechanical joining of the profile.
- iv) No polishing flush of any joints will be permitted.
- v) The window units shall be designed so that the route of drainage is prevented from passing through the reinforcement chamber.
- vi) The finished product shall be free from all sharp edges, burrs and the like that may be hazardous to the user.
- vii) The dimensional tolerances on the finished outer frame height and width shall be + 3mm. Frame assemblies shall be such that they can be installed square within a maximum difference in the diagonals of 4mm. Minimum overlap of sash on frame shall be 8mm.
- viii) In all window units, adequate drainage should be provided to permit the escape of water from platforms or horizontal members beneath each sealed unit. The drainage slots shall not penetrate into the reinforcement chambers. Rain water Stop to be provided wherever necessary to provide barrier to excess rain water.

Reinforcement

- i) Reinforcement shall be made from mild steel tube of not less than 2mm thickness as per strength requirement unless otherwise approved by Engineer in Charge.
- ii) Steel reinforcement shall conform to IS 277:2003 or equivalent. Base material of steel shall conform to IS 513:2008 – Drawing Grade.
- iii) The reinforcement shall be installed in accordance with the recommended actions. The reinforcement shall conform to the wind load requirements of IS 875: Part 3. The reinforcement

shall be in one continuous length and should be installed minimum 5mm and maximum 10mm from the face of the profile to be welded.

- iv) The reinforcement shall be secured to the profile so that it does not move or rattle and it maintains the structural integrity of the frame and satisfactory thermal separation. Reinforcement is to be fixed at a maximum of 100mm from the ends and then at a maximum of 300mm centers.

Glazing and Weather Seals

GLAZING: Shall be as per the nomenclature of the item in schedule of quantities.

WEATHER SEALS

The weather seals shall be EPDM/ Silicone seals. ASTM- D412 and ASTM- D2240 are standard specifying test methods for Tensile strength and Hardness of the gasket whereas the required value shall be specified

Ultimate tensile strength min $>7.5 \text{ N/mm}^2$

The weather seals are to be fitted in continuous lengths and grooves. The joints in the vent weather seal are to be positioned at the bottom and in the outer frames at the top.

Security and Safety

Fasteners shall be designed so that they cannot be released from the outside by the insertion of a thin blade.

No opening light shall be openable or removable from the outside, when it is fastened in the closed position, except by use of special tools or breaking part of the window.

QUALITY CONTROL AND TESTING OF MATERIALS

Raw Material The material from which the profiles are made shall consist substantially from white polyvinyl chloride as per BS EN 12608:20003. Only those additives and pigments may be used that are needed for the manufacture of the compound and its subsequent conversion into sound, durable extrusions of good surface finish and mechanical strength, as assessed by the requirements of this specification.

Profile Properties

Appearance and Finish The color of the profile shall be uniform and the color of all profiles in a system shall be uniform. The profile shall be free from foreign bodies, cracks or sink marks when viewed by normal corrected vision at 90° to the surface and at a distance of 1 meter in normal diffused north light.

Dimensions and Weights

The profiles shall be straight such that the longitudinal axis of the profile, as measured on the face surfaces, may deviate from the straight line by no more than 1mm per meter. The cross section of the profile shall conform in shape and dimensions and may deviate by no more than + 0.5mm; glazing channels and seal grooves may deviate by not more than + 0.3mm. The weight of the profile per meter shall not be more than 5% below the nominal value.

Window properties: U-Value : The total U_w – U value of complete window shall be $3.3 \text{ W/ m}^2 \text{ K}$

Resistance to wind load

All load bearing members shall be adequately reinforced so as to resist the wind load requirements of IS 875: Part 3. Calculations shall be submitted for all window designs.

Air Tightness The air infiltration for windows shall not exceed 1 litres/ second m² @ 75 Pa for both positive and negative pressures (certified for use in air conditioned buildings)

Water Tightness The water penetration for windows shall be minimum 15 minutes @ 150 Pa as per AS 4420.5.

Installation of Frame

- i) Before installation the Installation Team is to make sure that the opening has been prepared and any repair work has been carried out. Allow a 5mm gap between the frame and the opening. The new window shall be set in the prepared opening. Allow for suitable packing blocks.
- ii) The window shall be fixed into the aperture, by drilling and fixing through the outer frame, to the existing structure using 'Fischer' fixings, F8S type bolts.
- iii) The fixings shall be no less than 150mm from corners or transoms/mullions and at no more than 600mm centers.
- iv) When the frame is securely fixed in position then fit glass and glazing beads. Allow for any necessary glazing blocks and glass lock devices.
- v) Check windows for correct operation before proceeding with making good.
- vi) No fixings are to penetrate the drainage channels.
- vii) The windows shall be first treated with Polyurethane Foam (PU Foam) to enhance insulation against heat and Noise. The gap between masonry and the frame is to be filled with Neutral Cure Silicon (exposed to sun surface) and/or Acrylic Sealant (only for the internal surface). The windows shall be first treated with Polyurethane Foam (PU Foam) to enhance insulation against heat and Noise.
- viii) The silicone joints should be covered with Architraves/trim as per direction of Engineer-in-charge.

Making Good

- i) Making good to the external surface of the window frame and finish with a compatible approved low modular silicone sealant to BS5889. All trims and quadrants are to be approved by the Engineer- in- Charge prior to fixing.
- ii) Allow for making good any disturbed plaster, brick work and decorations internally and externally including color wash to brickwork.
- iii) Clean off excess material and check fittings and gearing.
- iv) Leave installation clean and in good working order.

GENERAL ITEMS

- i) This specification is to be read in conjunction with any other relevant documents and drawings.
- ii) Sizes are not to be scaled from any drawings or sketches but should be measured on site prior to manufacture.

Guarantees: Manufacturer to offer a warrantee on the window profile used in the manufacture of uPVC window systems for a period of 5 years from the date of completion. The Warrantee has to cover all abnormal defects in workmanship/quality. The guarantee has to be underwritten by a Company nominated Executive and also signed by the contractor. In addition 5% (five percent) of the cost of this item of work shall be retained as security deposit and the amount so withheld would be released after

five years from the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period, it shall be rectified by the contractor along with any incidental repairs to structure, flooring, finishing, fixtures and any other related damaged work within fifteen days of receipt of intimation of such defects in the work. If the defects pointed out are not attended to with the specified period, the same shall be got done from another agency at the risk and cost of the contractor and the cost of attending such repairs shall be deducted from any dues payable to the contractors. However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Engineer-In-Charge in the prescribed proforma.

Window Accessories

All the windows accessories shall be as per the approved drawings and approved make by the engineer-in-charge.

Measurement- Area of window shall be measured for payment correct to a centimeter from outer edge of the window frames.

GUARANTEE BOND FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made this _____ day of _____ Two thousand and _____ between _____ son of _____ (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 (hereinafter called the contract) dated _____ and made between the GUARANTOR OF THE ONE part and the Government of the other part, whereby the contractor, inter alia, undertook to render the buildings and structures in the contract recited completely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak-proof for 5 (five) years from the date after the maintenance period prescribed in the contract.

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

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

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

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

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

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

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

1.
2.

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

1.
2.

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF ALUMINIUM DOORS, WINDOWS, VENTILATORS & GLAZING WORKS

The agreement made this _____ day of _____ Two Thousand and _____ between _____ son of _____ (hereinafter called the GURANTOR 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 (Hereinafter called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, leak proof and sound material, workmanship, anodizing, colouring, sealing.

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

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

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

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

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

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

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

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

1. _____
2. _____

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

1. _____
2. _____

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF
DEFECTS AFTER COMPLETION IN RESPECT OF WATER SUPPLY, SANITARY
INSTALLATIONS & DRAINAGE**

The agreement made this _____ day of _____ Two Thousand and _____ between _____ son of _____ (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 (Hereinafter called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable workmanship, finishing and use of sound materials.

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

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

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

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

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

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

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

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

1. _____
2. _____

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY

_____ in the presence of :

1. _____
2. _____

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF uPVC WINDOWS, VENTILATORS & GLAZING WORKS

The agreement made this _____ day of _____ Two Thousand and _____ between _____ son of _____ (hereinafter called the GURANTOR 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 (Hereinafter called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, leak proof and sound material, workmanship, colouring, sealing.

AND WHEREAS THE GURANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, defective colouring, sealing and finishing for 5 (five) years to be reckoned from the date of the completion of the work.

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

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

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

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

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

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

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

1. _____
2. _____

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

1. _____
2. _____

Blanks to be filled by Contractor/ EE & SM(C-I)-Rajarhat, CPWD, Kolkata

APPROVED MAKE OF MATERIALS (FOR CIVIL WORKS)

Specification/brands names of materials (Refer materials, whichever are applicable for the scope of work) and finishes approved by the Architect/Engineer-in-Charge are listed below. However approved equivalent material and finishes of any other specialized firms may be used, in case it is established that the brands specified below are not available in the market but only after approval of the alternate brand by the Engineer-in-Charge. (See also condition of contract).

Sl. No.	Materials	Approved make
1	ACOUSTIC TREATMENT: WALL PANELLING	ARMSTRONG/ECOPHON/DEXUNE/ANUTONE /HIMALAYA / CREDENZE
2	CALSIUM SILICATE CEILING TILES	CUSTOM
3	READY MIX CONCRETE	ACC, L & T, GRASIM, ULTRA TECH
4	SKIRTING:	CUSTOM
5	SOUND ISOLATION & VIBRATION TREATMENT FOR CEILING:	BSW/OCEANZ ACOUSTICS/REGUPOL
6	DOUBLE SKIN INSULATED ROOFING SYSTEM:	MULTICOLOR/KIRBY/TIGER STEEL
7	STAGE FLOORING:	CUSTOM
8	CARPET FLOORING:	BLOOMSBURG/OCEANZ ACOUSTICS/STANTON
9	HEAVY DUTY PAVER TILES	JOHNSON-(ENDURA), SOMANY-(DURA STONE), PEVIT,
10	ACOUSTIC DOOR	ICA ACOUSTICS/OCEANZ ACOUSTICS/ ACOUSTICAL SOLUTION INC.
11	POLY-SULPHIDE SEALANT	PIDILITE, TUFFSEAL, SIKA, FOSROC.
12	DAMP PROOF MATEIRAL	IMPERMO, DURASEAL, ACCO-PROOF.
13	STRUCTURAL STEEL SECTIONS	TATA, SAIL, RINL, JINDAL STEEL,
14	ADMIXTURE	FOSROC, SIKA.
15	WHITE CEMENT	J.K. WHITE, BIRLA WHITE.
16	WATER PROOFING COMPOUND	TAPCRETE, CICO, ACCOPROOF, IMPERMO, FOSROC.
17	BITUMEN	INDIAN OIL, HINDUSTAN PETROLEUM, BHARAT PETROLEUM
18	LOCKS/LATCH	GODREJ, HARRISON, LINK.
19	LAMINATES	MERINO. CENTRUY, GREENLAM
20	WIRE MESH	STERLING ENTERPRISES, TRIMURTY WELDED MESH.
21	PRELAMINATED PARTICLE BOARD	CENTURY, ACTION TESSA
22	ADHESIVE	PIDILITE, DUNLOP, SIKA, FOSROC, ENDURA, LATICRETE
23	EPOXY MORTAR	FOSROC, SIKA, PIDILITE
24	DASH FASTNERS	HILTI, FISHER, CANON, BOSCH.
25	FLUSH DOOR SHUTTERS (DECORATIVE/NON DECORATIVE).	SWASTIC, CORBETT, CENTURY, GREEN, ARCHID, JENA.
26	PVC DOOR FRAME	POLYLINE, DUROPLAST, POLLYWOOD, ACCURA.
27	GLASS FRP DOOR SHUTTERS	POLYLINE, DUROPLAST, CACTUS.
28	BOARD & PLYWOOD	DURO, KITPLY, CENTURY. GREEN PLY
29	HYDRAULIC DOOR CLOSER/ FLOOR SPRING	HARDWYN, GODREJ. DORMA
30	S.S.STAIRCASE RAILING	CONNECT ARCHITECTURAL PRODUCTS PVT.LTD, JINDAL STAINLESS STEEL LTD., ICH INDUSTRIES, ESSAR
31	FIRE CHECK DOOR	KUTTY DOOR, PROMAT, GODREJ, NAVAIR, SHAKTI, BHAWANI
32	SMOKE SEAL STRIP	PROMAT/ASTRO FLAME.

Sl. No.	Materials	Approved make
33	DOOR CLOSER LOCK	INGERSOLL RAND/DORMA., HARDWYN
34	PANIC EXIT DEVICE	INGERSOLL RAND/MONARCH/DORMA.
35	DOOR COORDINATOR	UL LISTED/MONARCH/DORMA.
36	ANODISED ALUMINIUM HARDWARE (HEAVY DUTY)	HARDIMA, EVERITE, SIGMA (ISI MARKED).
37	TEMPERED / CLEAR/FLOAT/ TOUGHENED GLASS	PILKINTON, SAINT GOBAIN, ASAHI.
38	POLYESTER POWER COATING SHADES	NEROLAC, BERGER, J&N.
39	ALUMINIUM SECTIONS	JINDAL, HINDALCO, INDALCO, NALCO
40	FRICTION STAY HINGES	EARL-BIHARI.
41	NUTS, BOLTS AND SCREWS, STEEL	KUNDAN.PRIYA ATUL.
42	EPDM GASKET	HANU/ANAND.
43	STRUCTURAL SILICON	DOW CORNING/WACKER.
44	WEATHER SILICON	DOW CORNING/WACKER.
45	GLAZED CERAMIC TILES	KAJARIA, SOMANY, JOHNSON, ORIENT BELL CERAMICS,/NITCO
46	CEMENT CONCRETE TILES/ HARDONITE TILES	NITCO, NTC, HINDUSTAN, PODDAR.
47	VITRIFIED TILES DOUBLY CHARGED QUALITY	KAJARIA, JOHNSON (MARBONITE), AGL, RAK CERAMIC,SOMANY
48	TILE ADHESIVE	CICO, PIDILITE, FOSROC, SIKA., ENDURA, LATICRETE
49	CHEQUERED TERRAZO TILES	NITCO, BHARAT, PODDAR.
50	GRASS PAVER	UNISTONE, ULTRA.
51	WATER-PROOF CEMENT PAINT	SNOWCEM, ASIAN.
52	SYNTHETIC ENAMEL PAINT	BERGER, NEROLAC, ASIAN, ICI
53	ACRYLIC EMULSION PAINT	ASIAN, BERGER, NEROLAC, ICI, DULUX.
54	VITREOUS CHINA SANITARYWARE	PARRYWARE, HINDWARE, JOHNSON & JOHNSON, JAGUARE, CERA
55	STAINLESS STEEL SINKS	NILKANTH, AMC, CORBA, NIRALI, JYNA
56	C.P.BRASS FITTINGS	JAQUAR, MARC, PARRYWARE, JOHNSON, HINDWARE, CERA
57	LA(CI) PIPES	RIF, NECO, KAPILANSH
58	G.I.PIPES	TATA, JINDAL, HISSAR, PRAKASH SURYA
59	G.I.FITTINGS (MALLEABLE CAST IRON)	UNIK, ICS.
60	GUNMETAL VALVES	LEADER, SANT, ZOLOTO, KIRLOSKAR
61	STONEWARE PIPE & GULLY TRAPS	PERFECT, PARRY.
62	R.C.C. PIPES- (NP-2)	LAKSHMI SOOD & SOOD, JAIN & CO.
63	MS PIPES	KESORAM, ELECTRO STEEL.
64	C.I.DOUBLE FLANGED SLUICE VALVES.	KIRLOSKAR, IVC, BURN.
65	UPVC PIPE	SUPREME, PRINCE, FINOLEX.
66	COPPER TUBES/PIPES	RAJCO, MAX FLOW ABC.
67	COPPER FITTINGS	YORKSHINE, IBP, BCONEX.
68	BALL VALVES	ZOLOTO, IBP, ARCO.
69	UNGLAZED VITRIFIED TILES	JOHNSON- (ENDURA), SOMANY (DURA STONE), PEVIT.
70	SPIDER FITTINGS	DORMA, SEVAX.
71	INJECTION GROUTING	FOSROC, SIKA.
72	NION METALIC SURFACE HARDNER	FOSROC, SIKA, PIDLITE.
73	SOIL, WASTE & VENT PIPES & FITTINGS (A) HUBLESS CENTRIFUGAL CAST IRON	NECO, KAPILANSH, HEPCO, SKF, BIC
74	BUTTERFLY VALVES	AUDCO, ZOLOTO OR EQUIVALENT.
75	FALSE CEILING MINERAIL FIBER	ANUTONE, ARMSTRONG, HIMALAYA, CREDENZE.

Sl. No.	Materials	Approved make
76	GLASS MOSAIC TILES	BISAZZA, MRIDUL ENTERPRISES, OPIO MOSAICA, PALLADIO GLASS LTD, ITALIA GLASS PVT LTD, PIXEL MOSAIC (1) PVT LTD.
77	REINFORCEMENT STEEL/TMT BARS FE500D	SAIL, TATA, RINL, JINDAL STEEL & POWER, JSW STEEL, AND ANY OTHER MANUFACTURER APPROVED BY CPWD.
78	PPC/CEMENT	ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY & JK CEMENT. AND ANY OTHER MANUFACTURER APPROVED BY CPWD.
79	IRRIGATION EQUIPMENTS	JAIN IRRIGATION, FINOLEX PLASSON, KISAN
80	UPVC DOORS & WINDOWS (PROFILE MAKERS & THEIR AUTHORISED FABRICATORS ONLY)	DUROPLAST, ALUPLAST, KOMMERLING, FINISTA
81	UPVC DOORS & WINDOWS HARDWARE	ROTTO, DORSET, KINLONG
82	HEAT RESISTANCE TILES	SWASTIK, THARMA TECH
83	MIRROR GLASS	ATUL, MOGIGUARD, JAGUAR, CERA
84	TEXTURE PAINT	ASIAN, NEROLAC,
85	METAL GRID FALSE CEILING	ARMSTRONG, HUNTER DOUGLS.
86	SS ARCHITECTURAL HARDWARE	EBCO, HETTICH, HAFFLE
87	FACTORY MAKE WOODEN FLOORING	GREENLAM, ACTION TESSA
88	WPC (WOOD PLASTIC COMPOSITE) SOLID BOARDS	ALSTONE/ECOTE/CENTURY PLY/ GREENPLY OR EQUIVALENT

- NOTE :-**
1. In Case of non-availability of material in the preferred make list, Prior approval of the Engineer-in-Charge shall be taken for material of other make.
 2. The bidder should thoroughly read the approved make of materials (Civil & Electrical) before quoting the rate.

Schedule of Quantity (Civil work)

SL No	Description	Qty	Unit	Rate	Amount
1	Earth work				
1.1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.				
1.1.1	All kinds of soil	404.00	cum	177.50	71710.00
1.2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lif.	181.00	cum	196.00	35476.00
1.3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	1331.00	sqm	17.60	23425.60
2	CONCRETE WORK				
2.1	Providing and laying in position excluding cement concrete of level: specified grade the cost of centering and shuttering - All work up to plinth				
2.1.1	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	25.00	cum	7365.15	184128.75

2.1.2	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources: 8 graded stone aggregate 40 mm nominal size derived from natural sources)	38.00	cum	6812.00	258856.00
2.2	Centering and shuttering including strutting, propping etc. and removal of form work for:				
2.2.1	Foundations, footings, bases for columns	198.00	sqm	392.15	77645.70
3	REINFORCED CEMENT CONCRETE				
3.1	Centering and shuttering including strutting, propping etc. and removal of form for				
3.1.1	Foundations, footings, bases of columns, etc. for mass concrete	455.00	sqm	392.15	178428.25
3.1.2	Lintels, beams, plinth beams, girders, bressumers and cantilevers	667.00	sqm	736.40	491178.80
3.1.3	Columns, Pillars, Piers, Abutments, Posts and Struts	905.00	sqm	961.30	869976.50
3.1.4	Cornices and mouldings	158.00	sqm	856.80	135374.40
3.1.5	Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to pilasters and columns and the like	236.00	sqm	964.85	227704.60
3.2	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
3.2.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	65095.00	kg	107.85	7020495.75
3.3	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
3.3.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	962.00	kg	107.85	103751.70

3.4	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge, for the following grades of concrete.: Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
3.4.1	All works upto plinth level				
3.4.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	203.00	cum	9504.75	1929464.25
3.4.2	All works above plinth level upto floor V level				
3.4.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	15.00	cum	9860.40	147906.00
3.5	Add for using extra cement in the items of design mix over and above the specified cement content therein.	72.00	Quintal	733.50	52812.00
4	MASONARY WORK				
4.1	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10				

	average compressive strength in foundation and plinth in.				
4.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	87.00	cum	6974.85	606811.95
4.2	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor V level in :				
4.2.1	Cement mortar 1:6 (1 cement: 6 Coarse sand)	6.00	cum	8752.55	52515.30
5	STONE WORK				
5.1	Providing and fixing stone jali 40 mm thick throughout in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade, jali slab without any chamfers etc				
5.1.1	White sand stone	17.00	Sqm	14994.15	254900.55
6	CLADDING WORK				
6.1	Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut stone with machine cut edges of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately).				
6.1.1	White sand stone - 30mm thick gang saw cut stone	149.00	Sqm	3040.10	452974.90

6.2	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S. brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid).	1656.00	Kg	269.95	447037.20
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6.3	Providing and fixing adjustable stainless steel cramps of approved quality, required shape and size, adjustable with stainless steel nuts, bolts and washer (total weight not less than 260 gms), for dry stone cladding fixed on frame work at suitable location, including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge.	1104.00	Each	437.00	482448.00
7	WOOD AND P.V.C. WORK				
7.1	Providing and fixing M.S. grills with ornamental design of required pattern as per approved architectural drawing in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
7.1.1	Fixed to openings /wooden frames with rawl plugs screws etc.	2430.00	kg	238.35	579190.50
8	STEEL WORK				
8.1	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
8.1.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	9253.00	kg	172.60	1597067.80
9	FINISHING				
9.1	12 mm cement plaster of mix:				
9.1.1	1:6(1 cement: 6 fine sand)	535.00	sqm	333.35	178342.25
9.2	15 mm cement plaster on the rough side of single or half brick wall of mix:				
9.2.1	1:6 (1 cement: 6 fine sand)	535.00	sqm	383.00	204905.00
9.3	6 mm cement plaster of mix:				
9.3.1	1:3(1 cement :3 fine sand)	265.00	sqm	300.45	79619.25

9.4	Extra for plastering done on moulding, cornices or architraves including neat finish to line and level				
9.4.1	In one coat	265.00	sqm	713.2	188998.00
9.5	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
9.5.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	1335.00	sqm	171.10	228418.50
9.6	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
9.6.1	On steel work	1244.00	sqm	241.75	300737.00
10	DISMANTLING AND DEMOLISHING				
10.1	Dismantling steel work in single sections including dismembering and stacking within 50 metres lead in:				
10.1.1	Channels, angles, tees and flats	1319.00	Kg	2.30	3033.70
10.2	Dismantling precast concrete or stone slabs in walls, partition walls etc. including stacking within 50 metres lead :				
10.2.1	Thickness above 40 mm up to 75 mm	639.00	Sqm	433.55	277038.45
11	PILE WORK				

11.1	Boring, providing and installation bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below the pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. by percussion drilling using Direct mud circulation (DMC) or Bailer and chisel technique by tripod and mechanical Winch Machine all complete, including removal of excavated earth with all its lifts and leads (length of pile for payment shall be measured up to bottom of pile cap).				
11.1.1	450 mm dia piles	3264.00	metre	2278.30	7436371.20
	Total cost of work				25178743.85
	Modified Estimated Cost after using Correction factor on DSR-23 on account of GST 0.973				24498918.00
	Add Cost Index as on 01.10.2025 @ 23% over DSR 2023 vide circular file No. :34(1)/SDG (KOL)/cost index/2026/915 dt. 19.05.2026				5634751.00
12	Non Schedule				
12.1	Credit for the dismantled material to the department for salvage value of the dismantled materials including all complete as per direction of Engineer-in-Charge.				
12.1.1	Channels, angles, tees and flats	1319.00	Kg	-25.35	-33436.65
	Total				30100232.35
			say	Rs	30100232.00