

Name of Work: **Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).**

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NIT approved for Rs. **41,05,076/-** (Forty One Lac Five Thousand & Seventy Six only) and Containing Page No. 1 to 92.

Assistant Engineer (P),
Madhopur Division,
CPWD, Madhopur (Pb)

Executive Engineer (Civil),
Madhopur Division,
CPWD, Madhopur (Pb)

PART-A

**(Form CPWD - 6 & 7,
Schedule A to F)**

**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING
FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE**

The **Executive Engineer, Madhopur Division, C.P.W.D., Madhopur** on behalf of President of India invites **Percentage rate bids** from approved and eligible contractors of CPWD in appropriate class in composite category (now B&R category) for following work:

Sl. No.	NIT NO.	Name of work and location	Estimated cost put to bid	Earnest Money	Period of Completion	Last date & time of submission of bid, and other Documents as specified in the bid document	Time & date of opening of bid	Time period allowed for submission of originals of all the scanned & uploaded documents as specified in NIT by
1	2	3	4	5	6	7	8	9
1	18/EE/MD/2026-27/AE/Sapri (HP)	Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).	Rs. 41,05,076/-	Rs. 82,102.00	06 months	Upto -3:00 PM on 04.08.2026	At 3:30 PM on 04.08.2026	Within a week after opening of financial bid, by the lowest tenderer only.

- The contractor submitting the tender should read the schedule of quantities, additional conditions, additional specifications, particular specifications, CPWD- 6 and other terms and conditions given in the NIT and drawings. The bidder should also read the General Conditions of Contract for CPWD Works 2023 with up to date correction slips, The Tender is available as Government of India Publications and on CPWD website at <https://etender.cpwd.gov.in> however, provisions included in the tender document shall prevail over the provisions contained in the standard form. The set of drawings and NIT shall be available in the office of **Executive Engineer, Madhopur Division, C.P.W.D., Madhopur**. The contractor should also visit the site of work and acquaint himself with the site conditions before tendering. He should only submit his tender if he considers himself eligible and he is in possession of all the required documents. The following conditions, which

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

- a) Tenders with any condition including that of conditional rebates shall be rejected forthwith.
 - b) The successful bidder shall be required to submit a Performance Guarantee (i) **5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher).** **Requirement of Additional Performance Guarantee (APG): Where the tendered amount is less than eighty percent (80%) of the estimated cost put to Tender (ECPT). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be 0.8A – 0.7A) (Ref. OM No. DG/Manual-2024/20 dated 27.02.2026)** within 7 days of issue of letter of intent. This period can be further extended by Engineer-in-Charge up to a maximum period of 3 days on the written request of the contractor and with late fee as defined in Schedule F.
 - c) GST and Labour-Cess etc. as applicable shall be borne by the contractor himself. The contractor shall quote his rates considering all such taxes and hence their quoted rates should be inclusive of all the tax components.
 - d) It will be obligatory on part of the Contractor/ Bidder to tender for and sign the tender documents for all the component parts. The department reserves right to accept tender in full or in part without assigning any reasons.
2. The intending bidder must read the terms and conditions of CPWD - 6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
 3. Information and Instructions for bidders posted on website shall form of bid document.
 4. The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of opening of bid is extended, the enlistment of contractor should be valid on the original date of opening of tender.
 6. 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 Demand Draft or Pay order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts and Bank Guarantee of any Scheduled Bank towards EMD in favour of **"Executive Engineer, Madhopur Division, CPWD, Madhopur"** as mentioned in NIT, receipt of deposition of original EMD to division office of any Executive Engineer, CPWD and other documents as mentioned in NIT.
 7. **The online bids will be submitted upto 3:00 PM on 04.08.2026. The online bid shall be opened at 3:30 PM on 04.08.2026.**
 8. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
 9. The intending bidder must have valid class-III digital signature to submit the bid.
 10. The Executive Engineer of any division of CPWD shall receive the original EMD for tender of other division/Divisions.
 11. The following prescribed format of receipt of deposition of original EMD alongwith NIT shall be followed:

Receipt of deposition of original EMD		
	Receipt No.:.....	Date:.....
1.	Name of work:	Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).
2.	NIT No.:	18/EE/MD/2026-27/AE/Sapri (HP)
3.	Estimated cost:	Rs.41,05,076/-
4.	Amount of Earnest Money Deposit:	Rs. 82,102/-
5.	Last date of submission of bid:	04.08.2026
(*To be filled by EE at the time of issue of NIT and uploaded alongwith NIT)		
1.	Name of contractor:	#.....
2.	Form of EMD:	#.....
3.	Amount of Earnest Money Deposit:	#.....
4.	Date of submission of EMD:	#.....
Signature, Name and designation of EMD receiving officer (EE/AE(P)/AE/AAO) alongwith office stamp		
(# To be filled by EMD receiving EE)		

12. Copy of Enlistment Order and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of tender submission. However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose all documents scanned and uploaded are found in order including receipt of Deposition of EMD.
13. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
14. Contractor can upload documents in the form of JPG format and PDF format.
15. 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).
16. The required documents meeting the criteria to qualify as "approved and eligible contractors of CPWD" along with other documents as mentioned under para "List of Documents to be scanned and uploaded within the period of bid submission" below, as uploaded by the agency and hard copies received subsequently shall be checked. The financial bid of only those agencies shall be opened who are found to be eligible agencies, as per this NIT.
17. The department reserves the right to reject any prospective bid without assigning any reason.
18. **List of Documents to be scanned and uploaded within the period of bid submission:**
 - i. **Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee issued by a Commercial Bank, against EMD.**
 - ii. **Valid Enlistment Order of the CPWD registered Contractor in appropriate class of composite (B&R) category.**

- iii. **Copy of receipt of deposition of original EMD to division office of any Executive Engineer, CPWD (including NIT issuing EE).**
 - iv. **Certificate of Registration for GST, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents “if work is awarded to me, I/we shall obtain GST registration certificate, as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard”.**
 - v. **Valid certificate of ERP (Enterprise Resource Planning) training for enlisted contractors issued by the competent office/authority.**
 - vi. **Contractor shall upload Certificate/Undertaking that “I/we has visited the site and has quoted my/our rates after seeing the site conditions”. In case of non-uploading of the certificate the financial bid of the tenderer will not be opened and the tender shall be rejected.**
19. The existing enlisted contractor either himself or his authorized representative himself or his authorized representative should have taken compulsory ERP (Enterprise Resource Planning) training through any of the CPWD Regional Training Institutes (RTIs) at Delhi, Mumbai, Chennai and Kolkata, National CPWD Academy (NCA) Ghaziabad, Training arranged by Graduates of ERP “Train the Trainers Programme” conducted by NCA, Ghaziabad or through any other special training arranged by ERP unit of CPWD. The enlisted contractor will not be allowed to participate in tendering process without uploading the certificate of ERP training. Training will be valid only when participants are registered in LMS (Learning Management System) of ERP and certificate is issued through LMS of ERP.
 20. In case of composite tenders, the contractor submitting the tender should read all the three Parts of the tender viz. Part-A, B, C & D which are containing schedule of quantities, additional & special conditions, additional specifications, particular specification and other terms and conditions given in the NIT and drawings for Major as well as Minor component of work. Details of these parts are summarized as under:
 - **Part A :-** CPWD - 6, CPWD – 7 including schedule A to F for major component of the work, Standard General Conditions of Contract for CPWD 2023 as amended/modified up to last date of submission of bid.
 - **Part B :-** Conditions & specifications applicable to the work.
 - **Part C:-** Schedule A to F for minor component conditions and specifications applicable to minor component of the work.
 - **Part C:-** Schedule of quantities.
 21. The bidders should also read the General Conditions of Contract for CPWD 2023 **(Maintenance work)** amended up to last date of submission of bid of this work, which is available as Govt. of India Publications; however provisions included in the tender document shall prevail over the provisions contained in this standard form. The set of drawings and NIT shall be available with the Executive Engineer.
 - 22. The contractor should also visit the site of work and acquaint himself with the limited working space available at site and soil conditions before tendering.**
 23. This work is of urgent nature; the contractor should also visit the site of work and acquaint himself with the limited working space available at site and soil conditions before tendering. The contractor is required to arrange separate storage and working space away from site for the execution of work.
 24. The main contractor shall execute the minor component(s) also. He should be either an eligible contractor himself or associate with himself an eligible agency(s) for execution of electrical work as per CPWD-6 for e-tendering. The contractor shall indicate the names of upto three such agencies with in prescribed time as “Minor component agencies”. In case

the details of electrical agency are not submitted by the bidder or are not proper then these shall be submitted before acceptance of the bid.

25. After acceptance of the tender by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two/or more copies of agreement depending upon number of EE's/DDH in charge of minor components. One such signed set of agreement shall be handed over to EE/DDH in charge of minor component. **EE of major component will operate Part A, B and D (Annexure A) of the agreement. EE/DDH in charge of minor component(s) shall operate Part A, C and D (Annexure B) of the agreement.**
26. The main contractor has to enter into agreement with the contractor(s) associated by him for execution of minor component(s). Copy of such agreement shall be submitted to EE/DDH in charge of minor component as well as to EE in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.
27. Tenders with any condition including that of conditional rebates in the tender document shall be rejected forthwith.
28. The online percentage rate (s) must be quoted in decimal coinage. Amount shall be calculated and rounded in full rupees by ignoring fifty paisa and considering more than fifty paisa as rupee one.
29. The successful bidder shall be required to submit a Performance Guarantee of **(i) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). Requirement of Additional Performance Guarantee (APG): Where the tendered amount is less than eighty percent (80%) of the estimated cost put to Tender (ECPT). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be 0.8A – 0.7A) (Ref. OM No. DG/Manual-2024/20 dated 27.02.2026)** of the composite contract amount within a period of issue of letter of acceptance as specified in schedule 'F'.
30. The contractor shall have to execute guarantee bonds in respect of, water supply, sanitary installation & drainage works, water proofing works and Aluminium Works as per Performa at Annexure I & IV.
31. GST on materials as applicable shall be paid by the contractor himself. The contractor shall quote his rates considering all such taxes.
32. **Attention is also drawn to Clauses 6 and 7 of General Condition of Contract for CPWD works 2023, which prescribes the procedure for computerized recording of measurement and preparation of bill by contractor.**
33. Structural Designs and drawings, as well as services Designs and drawings shall be submitted by bidder to Engineer in Charge for issuance.
34. Intending bidder may submit physical mile stone on the basis of their resources and methodology at the time of tendering as indicated in the "Schedule F", otherwise it will be assumed that agency is agreeable to physical mile stones mentioned in the table.
35. Intending bidder may give detailed activities/programme for each mile stone fixed in the tender document while submitting the tender.
36. Recovery rates for less use of materials beyond permissible limits is given in Schedule 'F' of Part-A & C & also for excess use of departmentally issued material.

Executive Engineer,
CPWD Madhopur

CPWD-6 FOR e-TENDERING

- 1 **Percentage rate bids** are invited on behalf of President of India from approved and eligible contractors of CPWD in appropriate class of composite category (now B&R category) for the work of

Name of Work: Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).

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

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

The work is estimated to cost **Rs. 41,05,076/-**

This estimate, however, is given merely as a rough guide.

The authority competent to approve NIT for the combined cost and belonging to 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 bid.

- 1.1 For composite tender, besides indicating the combined estimated cost put to tender, should clearly indicate the estimated cost of each component separately. The eligibility of tenderer will correspond to the combined estimated cost of different components put to tender.
- 1.2 Online bid documents submitted by intending bidders shall be opened only of those bidders, whose “**EMD Deposition receipt**, Cost of Bid Document and e-tender Processing Fee” and “other documents including eligibility documents as required as per this NIT” are found in order.

The bid of only those agencies shall be opened who are found to be eligible agencies, as per this NIT.

2. Agreement shall be drawn with the successful bidder on prescribed Form No. **CPWD 7** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on web site www.cpwd.gov.in. Bidder shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **06 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.
(ii) The architectural drawings for the work are available and will be supplied according to progress of the 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 can be seen in the office of **Executive Engineer, Madhopur Division, CPWD, Madhopur** on all working days between 11.00 AM to 4.00 PM except Sunday and public holidays and downloaded from website <https://etender.cpwd.gov.in> free of cost.

6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. **Earnest Money of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee issued by a Commercial Bank, is scanned and uploaded** (drawn in favour of **Executive Engineer, Madhopur Division, CPWD, Madhopur** shall be scanned and uploaded to the e-tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer 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.

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

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee including e-Bank Guarantee of any scheduled bank having validity for 90 days or more from 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.~~

8. 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 to the e-tendering website within the period of bid submission. **However, certified copy of all the scanned and uploaded documents as specified in the 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, **whose all documents scanned and uploaded are found in order.**

The bid submitted shall be opened at 03:30 PM on 04.08.2026.

9. The bid submitted shall become invalid and e-tender processing fee shall not be refunded if:
 - (i) The bidder is found ineligible.
 - (ii) **The bidder does not deposit original EMD with division office of any Executive Engineer, CPWD.**
 - (iii) The bidder does not upload all documents (**including GST registration/undertaking**) as stipulated in the bid document.
 - (iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of tender opening authority.
 - (v) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/ below on the total amount of the tender or any section/ sub-head in percentage tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
10. **The contractor whose bid is accepted will be required to furnish performance guarantee (i) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher).**

(ii) **Requirement of Additional Performance Guarantee (APG):** Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be $0.8A - 0.7A$). (Ref. OM No. DG/Manual-2024/20 dated 27.02.2026) of the accepted tendered amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10,000/-) or Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee issued by a Commercial Bank in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, **then the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.** 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 and Programme Chart (Time and Progress) within the period specified in Schedule F.

11. 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, the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other Services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
12. 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.
13. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.
14. 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 bidder shall be bound to perform the same at the rate quoted.
15. **GST or any other tax applicable in respect of inputs procured by the contractor for this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same. However, component of GST at time of supply of service (as provided in CGST Act 2017) provided by the contract shall be varied if different from that applicable on the last date of receipt of tender including extension if any.**
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 gazette officer in the Central Public Works Department or in the Ministry of Urban Development. Any

17. breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
18. No Engineer of gazetted rank or other gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
18. The bid for the works shall remain open for acceptance for a period of **Thirty (30) days** from the date of opening of bids. If any bidder withdraws his bid or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, within 7 days after last date of submission of bids, whichever is earlier then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money absolutely irrespective of letter of acceptance the work is issued or not. If any bidder withdraws his bid or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, after expiry of 7 days after last date of submission of bids, whichever is earlier then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% of the said earnest money absolutely irrespective of letter of acceptance the work is issued or not. In case of forfeiture of earnest as prescribed the bidder shall not be allowed to participate in the rebidding process of the work.
19. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
 - a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Standard C.P.W.D. **Form 7** or other Standard C.P.W.D. Form as mentioned.

**Signature of the Divisional Officer,
For and on behalf of the President of India.**

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

STATE	HP	CIRCLE	Shimla Circle
BRANCH	B&R	DIVISION	Madhopur Division
Region	Region, Chandigarh	SUB-DIVISION	Sapri Sub Division (HP)

PERCENTAGE RATE BID AND CONTRACT FOR WORKS

Name of Work: Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).

- i) The bid to be submitted online by 3:00 PM on 04.08.2026
- ii) The online Bid shall be opened in presence of tenderers who may be present at 3:00 PM on 04.08.2026 in the office of the **Executive Engineer, Madhopur Division, C.P.W.D., Madhopur**

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 respects with the specifications, designs, drawings 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 respects in accordance with, such conditions so far as applicable.

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

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 issued by a Commercial Bank, is scanned and uploaded. If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work within prescribed period I/we agree that the said President of India or his successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that President of India or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 (a,b&c) and 12.4 of the tender form.

Further, I/We agree that in case of forfeiture of performance guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

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

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

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

_____)

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

- a) _____
- b) _____
- c) _____

For & on behalf of the President of India

Dated _____

Signature _____
Designation _____

SCHEDULE 'A' TO 'F'

SCHEDULE 'A'

Schedule of quantities : civil work

Page No. 89 to 92

SCHEDULE 'D'

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

Civil:

Additional Conditions & General Conditions

Pages - 25-31

SCHEDULE 'E'

Reference to General Conditions of Contract.

General conditions of contract for Central PWD Works 2023 (Maintenance Work) as amended/modified upto last date of submission of bid

1.1 Name of Work: Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).

1.2 Estimated Cost of work: - Rs. 41,05,076/-

1.3 Earnest Money: - Rs. 82,102/-

1.4 Performance Guarantee:- **As per OM No. DG/Manual-2024/20 dated 27.02.2026.**
(i) PG Shall be 5% of Estimated cost put to tender (ECPT) or Contract amount whichever is higher, or as per prescribed from time to time, to be submitted in the form as prescribed in GCC. Performance Guarantee shall remain Valid for a minimum period of Six Months beyond the date of completion of all contractual obligations as per GCC in case of contracts where supplementary agreement is drawn, the fresh PG shall be obtained from the contractor @ 5% of the amount of the supplementary agreement or as prescribed from time to time. The PG received against the original work shall be released as per contract conditions
(ii) A bid will be treated as abnormally low if the quoted bid amount is lesser than 80% of the estimated cost put to tender.
(iii) Requirement of Additional Performance Guarantee (APG): In case of abnormally low bids as defined above, the bidder shall be required to submit Additional Performance Guarantee (APG) in addition to the standard Performance Guarantee (PG). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be 0.8A – 0.7A). The Additional Performance Guarantee (APG) shall be in the prescribed format of Performance Guarantee and has to be submitted within the time frame prescribed for submission of Performance Guarantee. The other terms and conditions of release etc. of APG shall be same as that of PG.

1.5 Security Deposit 2.5% of the tendered value

SCHEDULE 'F':-

General Rules & Directions:-

	Officer Inviting Tender	:	Executive Engineer, Madhopur Division, CPWD, Madhopur.
	Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2(c)	:	Refer Clause-12
	Definitions:-		
2 (v)	(i) Engineer-In-Charge	:	Executive Engineer, Madhopur Division, CPWD, Madhopur for Civil Work .
2 (viii)	Accepting Authority	:	Executive Engineer, Madhopur Division, CPWD, Madhopur.
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits	:	15%
2 (xi)	Standard Schedule of Rates	:	Delhi Schedule of Rates 2023 (Civil work) with upto date correction slips issued upto last date of receipt of tender through E-tendering & Market Rates.
2 (xii)	Department	:	Central Public Works Department
9 (ii)	Standard CPWD Contract	:	Form GCC 2023 (Maintenance Work), CPWD Form 7 modified and amended up-to last date of online submission of bids.
Clause-1:-			
(i)	Time allowed for submission of performance guarantee, Programme Chart(Time and progress) and applicable Labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including provident fund Code No. or proof of applying thereof from the date of letter of acceptance.	:	7days
(ii)	Maximum allowable extension with late fee @ 0.1 % perday of performance guarantee amount beyond the period as provided in (i) above	:	3 days
Clause-2			
I	Authority for fixing compensation under clause-2.	:	Superintending Engineer, CPWD Shimla, or his successor
II	Whether clause-2A shall be applicable.	:	Not Applicable
Clause-5			
(i)	Number of days from the date of issue of letter of acceptance for reckoning date of start.	:	10 days
(ii)	Mile Stone.	:	Table of Milestones as given in NIT
(iii)	Time allowed for execution of work	:	06 months
(iv)	Recovery on account of Non submission progress chart and progress report on or before 5 th day of each month.	:	Rs. 5,000/- Per Month

Authority to decide.			
(i)	Authority to convey the decision of shifting of mile stone and extension of time.	:	Executive Engineer, Madhopur Division, CPWD, Madhopur for Civil Work .
(ii)	Authority to decide Re-scheduling of Mile stone and extension of time.	:	Superintending Engineer, CPWD Shimla, or his successor
(iii)	Shifting of date of start in case of delay in handing over of site.	:	Superintending Engineer, CPWD Shimla, or his successor
Clause-6:-	Mode of measurement		CMB/EMB (Through ERP Portal)
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. 6.84 lacs
Clause-7A:-	Whether clause 7A shall be applicable	:	Yes Applicable
Clause-10A:-	List of testing equipment to be provided by the contractor at site lab.	:	As mentioned in Tender Document
Clause-10-B(ii)	Whether clause 10-B (ii) shall be applicable.	:	Not Applicable
Clause-10C:-	Component of labour expressed as percentage of value of work.	:	Not Applicable
Clause-10-CC:-	Clause 10CC to be applicable in contracts with stipulated period of completion exceeding 12 months.	:	Not Applicable

Clause-11:- (i) Specifications to be followed for Execution of work (civil)

C.P.W.D. Specifications 2019 Vol. I & II with upto date correction slips (Here in after called CPWD specification) and as per manufacture specification i/c special conditions & particular specifications with upto date corrections slips issued upto last date of receipt of tenders.

Clause-12&12.2(a,b &c)

Applicable as per DG/CON/Maintenance 2023/03 dated 18/12/2023.

Type of Work

Maintenance Work.

12.2(c)	Deviation limit beyond which clause 12.2 (c) shall apply for all items in superstructure (above plinth level) of building work:	No limit
12.4 (i)	Deviation limit beyond which clause 12.2 (c) shall apply for foundation work(except items mentioned in earth work subhead in DSR and related items)	No limit
(ii)	Deviation limit for items mentioned in earth work Subhead of DSR and related items.	No limit

Clause-16:-

Competent Authority for deciding reduced rates.

: The Superintending Engineer, CPWD, Shimla or Successor thereof

Clause 18 LIST OF MACHINERY, TOOLS & PLANTS -----AS PER LIST ATTACHED IN NIT

Clause 19C	Competent Authority to decide penalty for each default	} Engineer-in-Charge
Clause 19D	Competent Authority to decide penalty for each default	
Clause 19G	Competent Authority to decide penalty for each default	
Clause 19K	Competent Authority to decide penalty for each default	

Clause 25

(i) Conciliator

(ii) Arbitrator Appointing Authority

(iii) Place of Arbitration

ADG(RCH)

SE, CPWD Shimla

Shimla(HP)

CLAUSE 32

Requirement of Technical Representative (s) and Recovery Rate

Cost of work (Rs. In crore)	Requirement of Technical staff		Minimum Experience (Years)	Designation of Technical Staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
	Qualification	Number of Major +Minor component			
More Than Rs. 15 lac to Rs 1.50 crore	Graduate Engineer Or Diploma Engineer	1 of Major Component	2 Or 5 Respectively	Project Manager cum Planning/quality/ Site/ billing Engineer	Rs. 15,000/- per month per person

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

Diploma holder with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers. The contractor shall submit a certificate of such employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every account bill/final bill and shall produce evidence if at any times so required by the Engineer-in-charge.

Clause-38:-

- i) a) Schedule / Statement for determining theoretical quantity of cement & bitumen

Delhi Schedule of Rates 2023 with up-to date correction slips & MORTH Standard Data book 2019

- ii) Variations permissible on theoretical quantities.

- a) Cement for works with estimated cost put to tender for more than Rs. 25 Lacs.

3% plus / minus.

- b) Steel Reinforcement and structural steel sections for each diameter, section and category.

2% plus / minus.

- c) All other materials.

Nil.

- d) Bitumen for all work.

2.5% Plus only.& Nil of minus side

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

S. No.	Description of item	Rates in figures and words at which recovery shall be made from the contractor	
		Excess beyond Permissible Variation	Less use from the permissible variation
1	Cement a) OPC b) PPC	Nil (No recovery)	Lesser use of material beyond permissible variation on lesser side is not at all allowed. Hence this column is not applicable.
2	Steel a) Primary producers	Nil (No recovery)	
3	Structural steel	Nil (No recovery)	

TABLE OF MILE STONE (S)

Name of work: Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).

Mile stone/Bar Chart(s)- As per construction programme given below

Note:- In the event of not achieving the necessary progress as assessed from mile stone chart, 1% of the accepted tendered value of work will be withheld for failure of each mile stone.

Mile stones of the Contract

Sl. No	Description of Milestone	Time Allotted in Months (From date of start)	Amount to be withheld in case of non-achievement of milestone
1.	Total financial value of work up to this mile stone shall not be less than 25% of tendered value.	01 month	1 % of tendered amount
2.	Total financial value of work up to this mile stone shall not be less than 25% of tendered value.	02 months	1 % of tendered amount
3.	Total financial value of work up to this mile stone shall not be less than 25% of tendered value.	03 months	1 % of tendered amount
4.	Total financial value of work up to this mile stone shall not be less than 25% of tendered value.	04 months	1 % of tendered amount
5.	Total financial value of work up to this mile stone shall not be less than 25% of tendered value.	05 months	0.50 % of tendered amount
6.	Completion of work in all respect including removal of malba from site.	06 months	0.50 % of tendered amount

The withheld amount due to non-achievement of mile stone may be released if the subsequent mile stone is achieved in the specified time.

Mile stones shall be applicable for Civil work as attached. ~~The main contractor will ensure that electrical components of the work are executed in time without giving any chance for slippages of mile stones on account of delay in execution of associated electrical work by him. However, in case mile stones are not achieved by the contractor for the work, the amount shown against milestone shall be withheld by the Executive Engineer in charge of the major component.~~

Note : Intending tenderer may submit physical activities/mile stones on the basis of their resources and methodology at the time of tendering corresponding to physical mile stones /stages as indicated in the above table. These shall be formed part of agreement after approval of the accepting authority, otherwise it would be assumed that agency agrees with the above mentioned physical mile stones

LIST OF MACHINERY, TOOLS & PLANTS

Sl. No.	Name of Equipment	Numbers
	Civil	
1	Excavators cum loader of various sizes and required capacity	1 No.
2	Tower Crane or Builder's hoist (Desirable)	Nil.
3	Computerised Automatic concrete batching plant of sufficient capacity as per direction of Engineer-in-charge	1 No.
4	Concrete pump (Desirable)	1 No.
5	Concrete transit mixer	Nil.
6	Concrete mixer (diesel)	1 No.
7	Concrete mixer (electrical)	1 No.
8	Needle vibrator (electrical)	1 No.
9	Needle vibrator (petrol)	1 No.
10	Surface vibrator	1 No.
11	Bar bending Machine	1 No.
12	Bar cutting machine	1 No.
13	Drilling machine	1 No.
14	Welding machine i/c transformer	1 No.
15	Cube testing machines	1 No.
16	Adjustable steel props	As required
17	Steel shuttering	As required
18	Steel scaffolding	As required
19	Grinding/polishing machines	1 No.
20	Tippers	Nil
21	Trucks	Nil.
22	Air compressors (diesel)	Nil.
23	Dewatering Pump (diesel)	1 No
24	Dewatering Pump (electric)	1 No.
25	Diesel generator of appropriate capacity	1 No.
26	Core cutting machine	Nil.

1. Workshop facilities for fabrication/addition and alterations, and other allied works shall be arranged by the contractor at his own cost.
2. The list of equipment/T&P/machinery as per above is for general guidance. In addition to these, machinery / equipment of required capacity to complete the work within the stipulated

time , shall be arranged by the contractor in case the requirement at any stage exceeds as per the programme finalized at his own cost and nothing extra whatsoever on this account shall be paid. This includes equipment for arrangement of concrete from RMC producing plants also.

3. All the equipment, T&P and machinery shall be kept in good working conditions.
4. Equipment, T&P like batching plant, concrete pump excavators/Transit mixer etc. shall be moved away from the site when the same are no longer required at site of work .

PART-B

CONDITIONS AND SPECIFICATIONS OF CIVIL WORK

SALIENT / MANDATORY REQUIREMENTS FOR THE TENDERER

Name of Work: **Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).**

- 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 for inspection on any working days between 10:AM to 4:00 PM. 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 accurately.
- 3 Time allowed for the execution of work is **06 months**
- 4 The contractor(s) shall submit a detailed program of execution in accordance with the master programme/milestone within ten days from the date of issue of award letter.
- 5 Quality of the project is of utmost importance. This shall be adhered to in accordance with the provisions of CPWD specifications and guidelines given in the relevant paras.
- 6 The contractor (s) shall make his own arrangements for electricity and water required for the execution of work. 1% water charges of gross work done will be recovered in case departmental water is used during construction.
- 7 Contractor has to deploy required Plant and machinery on the project. Minimum number of plant and machinery to be deployed by him is indicated in this NIT. However, if any additional type and number of plants and machines are required at site, the same shall be deployed by the agency without any extra costg which shall be in order to adhere to the time schedule, as specified in this NIT. 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.
- 8 The contractor shall submit the running bills in the shape of the computerised MB/EMB in pages of A-4 size as per the standard format of department and shall act as per modified clause 6 of **CPWD-7**.
- 9 Contractor has to provide reinforcement cover blocks made of approved proprietary pre packed free flowing mortars (Conbextra as manufactured by M/s Fosroc Chemical India Ltd. or approved equivalent) of high early strength.
- 10 In the case of any tender where unit rate of any item / items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected.
- 11 On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-Charge shall be communicated in writing to the Engineer-in-charge
- 12 GST or any other tax applicable in respect of **inputs procured by the contractor** for this contract shall be payable by the contractor and Government will not entertain any claim whatsoever in respect of the same. However, **component of GST at time of supply of**

service (as provided in CGST Act 2017) provided by the contract shall be varied if different from that applicable on the last date of receipt of tender including extension if any.

- 13 The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the ADG/SE/Executive Engineer may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

ADDITIONAL CONDITIONS (Civil)

1. Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same. 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.
2. The contractor shall make his own arrangement for obtaining electric connection(s) if required and make necessary payments directly to the department concerned.
3. 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.
4. 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.
5. The contractor shall fully comply with all legal orders and directions of the Public or local authorities or municipality and abide by their rules and regulations and pay all fees and charges for which he may be liable in this regard. Nothing extra shall be paid/reimbursed for the same.
6. 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.
7. 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.
8. 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.
9. The contractor shall engage licensed plumbers for the work and the materials (fixtures/fittings) tested by the local Municipal Body/Corporation wherever required at his own cost. Nothing extra shall be paid/reimbursed for the same.
10. 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.
11. If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.
12. 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.
13. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.
14. Samples of various materials required for testing shall be provided free of charges by the contractor. Testing charges, if any, unless otherwise provided shall be borne by the

department. All other expenditure required to be incurred for taking the samples; conveyance, packing etc. shall be borne by the contractor himself.

15. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been in-built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.
16. 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.

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

For the final bill, however, full nomenclature of all the items shall be adopted in preparing abstract in the measurement books and in the bill forms.
17. The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer in charge. Nothing extra shall be paid on this account.
18. No payment will be made to the contractor for damage caused by rains, or other natural calamities during the execution of the works and no such claim on this account will be entertained.
19. 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.
20. 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.
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. In case the supply of timber/steel frames/shutters for doors, windows etc. is made by some other agency, the contractor shall make necessary arrangements for their safe custody on the direction of the Engineer-in-charge till the same are fixed in position by him & nothing extra shall be paid on this account.
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, shingle sand etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.
25. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers. Decision of Engineer in charge in this regard shall be final and binding.
26. It must be ensure that all materials to be used in work bear BIS certification mark. In cases where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification the material can be used subject to the condition that it should confirm to CPWD specification and relevant BIS codes. In such case written approval of the Technical sanctioning Authority may be obtained before use of such material in the work.

27. Contractor shall have to execute a Guarantee Bond in respect of Stone work, Water Supply, Sanitary & drainage works, Water Proofing works & Aluminium Works as applicable, as per Performa attached in this N.I.T.
28. The terms machine batched, machine mixed and machine vibrated concrete used elsewhere in agreement shall mean the concrete produced in concrete batching and mixing plant and if necessary transported by transit concrete mixers, placed in position by the concrete pumps, tower crane and vibrated by surface vibrator /needle vibrator / plate vibrator, as the case may be to achieve required strength and durability.
29. Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer in charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer in charge. Any material procured without prior approval of Engineer in charge in writing is liable to be rejected. Engineer in charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Non standard materials shall not be accepted.
30. Doors and frames shall be procured from specialist firms and name of such agencies shall be got approved from the Engineer in charge well in advance.
31. The construction joints shall be provided in predetermined locations only as decided by Engineer in charge. The cost of shuttering for these construction joints shall be included in item of Concrete work / RCC work and nothing extra shall be payable on this account to the contractor.
32. The gradation of fine sand to be used in plaster work shall be strictly as per CPWD Specifications 2019, conforming to IS 1542-1977. The plastered surface shall be fairly smooth without any undulation of any kind for applying paint/white wash.
33. No chase cutting/dismantling of plaster/RCC/CC shall be allowed, so contractor has to execute the electrical work accordingly.
34. The contractor shall invariably prepare the samples of finishing items i.e. flooring of different types, external & internal finishing i/c colour scheme of paint, tiles in dado, flooring in platforms & staircase, water supply & sanitary fittings and any other item as per direction of Engineer-in-charge. The contractor shall proceed with further finishing items only after getting the samples of these items approved in writing from Engineer-in-charge. In case of construction of residential quarters, one sample quarter complete in all shape for each category, shall be prepared by the contractor and got approved from Engineer-in-charge in writing. The contractor shall be allowed to proceed with further quarters only after getting the sample quarters approved in writing from Engineer-in-charge. No extra claim whatsoever beyond the payments due at agreement rates will be entertained from the contractor on this account.
35. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case, he or his authorized representative is not present or does not associate him, the results or such tests and consequences thereon shall be binding on the contractor.
36. The contractor shall get the water tested with regard to its suitability of use in the works and get written approval from the Engineer in charge before he proceeds with the use of same of execution of works. If the tube-well water is not suitable, the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in latest CPWD specifications/BIS code.
- 37. Departmental Issue of Materials:**
 - 37.1 The materials shall be issued to the contractor at the place of delivery as mentioned in the Schedule-B during the working hours as per the rules of CPWD stores in force from time to time. If these are delivered at any other place, adjustments on accounts of the difference in

cost of cartage shall be affected as per the terms of clause 12 of the contract agreement. The contractor shall however have to cart the materials to the site of work at his cost as soon as these are issued.

- 37.2 Materials like reinforcing bars, flats, tees, angles, sheets, CI and SCI pipes etc., if contemplated to be issued shall be issued in available sizes and lengths and the contractors shall bear the cost of cutting and shaping them according to the requirements of work. No claim for the wastage on this account shall be entertained.
- 37.3 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by the departments and shall construct suitable godowns, yards at the site of work for storing all materials as to be safe against damage by sun, rain, dampness, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose, at his own cost. Materials to be charged directly to work and stipulated for issue free of cost shall also be issued to the contractor as soon as those are received at site or at the stipulated place of issue. The provision of this para shall apply equally and fully to those as well.
- 37.4 All materials obtained from the Govt. stores or otherwise on receipt shall be got checked by the Engineer-in-charge of the work or his representations before use.
- 37.5 Registers for the materials to be issued by the department shall be maintained as required by the Engineer-in-charge and these shall be signed by the contractor or his authorized agent and representative of Engineer-in-charge on each day of transactions.
- 37.6 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

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

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

GENERAL CONDITIONS

1. The contractor (s) shall inspect the site of work before tendering and acquaint himself with the site conditions and no claim on this account shall be entertained by the department.
The contractor (s) shall get himself acquainted with nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction.
 2. The contractor (s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters of site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.
 3. The tenderer shall see the approaches to the site. In case any approach from main road is required by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost. No payment shall be made on this account.
 4. 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.
 5. 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.
 6. The contractor shall provide at his own cost suitable weighing surveying and levelling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.
 7. 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
 8. On completion of work, the contractor shall submit at his own cost four prints of "as built" drawings to the Engineer-in-Charge within 30 days of completion of work. These drawings shall have the following information:
 - a) Run of all piping and their diameters including soil waste pipes & vertical stacks.
 - b) Ground and invert levels of all drainage pipes together with locations of all manholes and connections upto outfall.
 - c) Run of all water supply lines with diameters, location of control valves, access panels etc.
- If above said drawings are not submitted by the contractor within the above specified time then final bill will not be paid and Security Deposit shall not be released.**
9. The contractor shall submit for the approval of Engineer-in-Charge names of specialized agencies of repute along with their technical capacity proposed to be engaged by him for executing specialized works, who must have executed satisfactorily works of value as specified in mandatory conditions.
 10. 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.

11. 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.
12. 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.
13. All materials obtained from Govt. stores or otherwise shall be get checked by the Engineer-in-Charge or his any authorized supervisor staff on receipt of the same at site before use.
14. 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.
15. 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.
16. **PROGRAMME CHART**
 - i) The contractor shall prepare an integrated programme chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfilment of the programme within the stipulated period or earlier as indicated in the mile stones under clause 5 of the contract and submit the same for approval to the Engineer-in-Charge within ten days of the award of the contract.
 - ii) The programmes chart should include the following:-
 - a) Descriptive note explaining sequence of various activities.
 - b) Net work (PERT/CPM/BAR CHART)
 - c) Programme for procurement of materials by the contractor
 - d) Programme of procurement of machinery/equipment's having adequate capacity commensurate with the quantum of work to be done within the stipulated period by the contractor.
19. If appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved programme referred above the contractor shall produce a revised programme showing the modifications to the approved programme to ensure completion of the work within the stipulated time for completion .
20. 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.

21. If the work is carried out in more than one shift or during night no claim on this accounts shall be entertained.
22. 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.
23. 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.
24. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the Jr. Engineer-in-Charge of work and which shall be duly signed by the contractor or his authorised representative.
25. The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However cost of photographs, slides, audio/videography etc shall be born by the department.
26. The contractor shall be fully responsible for the safe custody of materials brought by him issued to him even though the materials are under double lock key system.
27. The rate of items of flooring is inclusive of providing sunk flooring at bath rooms kitchen etc. and nothing extra on this accounts is admissible.
28. No payment shall be made to the contractor for any damage caused by rain, snowfall, floods, earthquake or any other natural causes whatsoever during execution of work. The damages of the work will be made good by the contractor at his own cost and no claim on this account shall be entertained.
29. For construction works which are likely to generate malba/rubbish to the tune of more than a tempo/truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at their own cost to the notified/specified dumping ground and under no circumstances these shall be stacked/dumped, even temporarily outside the construction premises.
30. The Plinth Level of Building is to be kept as per Architectural drawings. All the items of works such as PCC, RCC, Brickwork and shuttering etc. in foundation upto this plinth level with be measured and paid as the work done upto plinth level. Nothing extra due to higher plinth will be paid and contractors rates quoted for all these items shall, therefore, be deemed to cater for extra height of plinth.

ADDITIONAL SPECIFICATIONS

1. The work in general shall be executed as per the description of the item, specifications and conditions attached and CPWD specifications 2019, Vol I & II with up-to-date correction slips and instructions of Engineer-in-Charge.
2. The order of preference in case of any discrepancy as indicated in condition No. 8.1 under "Conditions of Contract" give in standard CPWD contract form may be read as the following:
 - i) Nomenclature of items as per schedule of quantities.
 - ii) Additional conditions, General Conditions, Additional Specification and Particular Specifications attached with the tender document.
 - iii) CPWD Specifications 2019, Vol I & II with up-to-date correction slips..
 - iv) Architectural Drawings.
 - 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.

3. The proposed building is a prestigious project and quality of work is paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like stone masonry & stone cladding works, stone flooring, structural glazing, PVDF coating aluminium composite panel and other specialized flooring work, Wood work will specially require engagement of skilled workers having experience particularly in execution of such items.
4. 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.
5. The rates for all items of work shall unless clearly specialised otherwise include cost of all labour, material tools and plants and other inputs involved in the execution of the item.
6. The contractor (s) shall quote all inclusive rates against the items in the schedule of quantities and nothing extra shall be payable for any of the conditions and specifications mentioned. In the tender documents unless specifically specified otherwise.
7. Unless otherwise specified in the schedule of quantities the rates for all items shall be considered as inclusive of pumping/baling out water, if necessary, for which no extra payment shall be made. Those conditions shall be considered to include water from any source such as inflow of flood, surface and sub-soil water etc. and shall apply to the execution in any season.
8. The rate for all items in which the use of cement is involved is inclusive of charges for curing.
9. The foundation trenches shall be kept free from water while works below ground level are in progress.
10. The work shall be executed and measured as per metric dimensions given in the schedule of quantities, drawings etc. (FPS units wherever indicated are for guidelines only).

11. Payment for items of "RCC work", brick work and concrete work above different floor shall be made at the rates provided for those items. For operation of these rates, the floor level shall be considered as top of the main structural slab in that floor viz. top of RCC slab in main room and not top of any sunk or depressed floor for lavatory slabs.
12. The rate of items of flooring is inclusive of providing sunk flooring in Bath-rooms, kitchen, etc. and nothing extra on this account shall be payable.
13. The SCI/CI pipes and GI pipes wherever necessary shall be fixed to RCC columns, beams etc. with sufficient number of rawl plugs and nothing extra shall be paid for this.
14. The contractor shall be responsible of the protection of the sanitary and water supply fittings and other fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.

GENERAL TERMS AND CONDITIONS

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

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

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 proposed building is a prestigious project and quality of work is paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like stone masonry & stone cladding works, stone flooring, structural glazing, PVDF coating aluminium composite panel and other specialized flooring work, Wood work will specially require engagement of skilled workers having experience particularly in execution of such items.

- 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. 1% water charges of gross work done will be recovered in case departmental water is used during construction.
- 17 If as per local Municipal regulations, huts for labour are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place as is acceptable to the local body and nothing extra shall be paid on this account.
- 18 It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.
- 19 The structural and architectural drawings shall at all times be properly co-related before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.
- 20 The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where however phased delivery of work is contemplated these provisions shall apply separately to each phase.
- 21 The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.

22 PROGRAMME CHART

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

- a) Descriptive note explaining sequence of various activities.
- b) Net work (PERT/CPM/BAR CHART)
- c) Programme for procurement of materials by the contractor
- d) Programme of procurement of machinery/equipment's having adequate capacity commensurate with the quantum of work to be done within the stipulated period by the contractor.
- e) If it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved programme referred above the contractor shall produce a revised programme showing the modifications to the approved programme to ensure completion of the work within the stipulated time for completion.
- f) 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.
- g) If the work is carried out in more than one shift or during night no claim on this accounts shall be entertained.
- h) 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.
- i) 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.
- j) The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.
- k) 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.
- l) 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.

- 31 The contractor shall submit for the approval of Engineer-in-Charge names of specialized agencies of repute along with their technical capacity proposed to be engaged by him, who must have executed satisfactorily works of value as specified in mandatory conditions.
- i) The works shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available there of is complete and unambiguous. The discrepancy, if any shall be brought to the notice of the Engineer-in-Charge before execution of the work. The contractor alone shall be responsible for any loss or damage executing by the commencement of work on the basis of any erroneous and or incomplete information.
 - ii) The contractor shall take all precautions to avoid accidents by, exhibiting caution boards day and night, speed limit boards, red flags, red light and providing necessary barriers and other measures required from time to time. The contractor shall be responsible for all damages and accidents due to negligence on his part.
 - iii) Other agencies will also simultaneously execute and install the works of electrification, air conditioning, lifts, fire-fighting etc. for this work and the contractor shall provide necessary facilities for the same. The contractor shall leave such recesses, holes openings etc. as may be required for the electric, air-conditioning and other related works (for which inserts, sleeves, brackets, conduits base pinion, clamps etc. shall be supplied free of cost by the department unless otherwise specifically mentioned) and the contractor shall fix the same at time of casting of concrete, stone work & brick work, if required and nothing extra shall be payable on this account.
 - iv) The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
 - v) All Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-Charge.

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

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

- 33 On completion of work, the contractor shall submit at his own cost four prints of "as built" drawings to the Engineer-in-Charge within 30 days of completion of work. These drawings shall have the following information:
- a) Route of all piping and their diameters including soil waste pipes & vertical stacks.
 - b) Ground and invert levels of all drainage pipes together with locations of all manholes and connections upto outfall.
 - C) Route of all water supply lines with diameters, location of control valves, access panels etc.

34 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. Secured advance on the same material shall not be paid again.

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 else where in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
3. The contractor shall submit shop drawings of staging and shuttering arrangement, aluminum work, and other works as desired by Engineer In Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer –in – charge before execution.

4. Test Laboratories :

A) Laboratory at site :

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

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

a) **Balances:**

- i) 7 kg to 10 kg capacity, semi-self indicating type – Accuracy 10 gm.
- ii) 500 gm capacity, semi-self indicating type Accuracy 1 gm.
- iii) Pan Balance- 5 kg Capacity- Accuracy 10 gm.

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

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

- i) IS Sieves – 450 mm internal dia of sizes 100 mm, 80 mm, 63 mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75 mm, complete with lid and pan.
- ii) IS Sieves – 200 mm internal dia (brass frame) consisting of 2.36 mm, 1.18 mm, 500 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.
- d) Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.
- e) Equipment for slump test- slump cone, steel plate, tapping rod, steel scale, scoop.
- f) Equipment for concrete testing
- i) Concrete cube moulds 15x15x15cm. 18Nos.

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

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

B) Other Laboratories :

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

C) Sampling of Materials :

- C1 Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work.
- C2 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge.
- C3 BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.
- C4 The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
- C5 All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
- C6 The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

- C7 The Stone aggregate/stone, sand shall be brought from any quarries subjected to the said materials confirm CPWD specifications.
- 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-in-Charge of work and which shall be duly signed by the contractor or his authorised 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 born by the department.
- 7 The contractor shall be fully responsible for the safe custody of materials brought by him issued to him even though the materials are under double lock key system.
- 8 Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.
- 9 Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.
- 10 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.
- 11 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) Inspection register.
 - g) 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. These registers should be duly checked by AE(P) in division office.
- 12 Ultrasonic Pulse Velocity Method of Test forRCC**
- i) The under lying 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 poor erquality lower velocities are obtained. If the rearecracks,voids or flaws in side the concrete which comein the way of transmission of pulse, lower velocities areobtained.

- 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

S. 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 isto be conducted for CPWD works as a routine test. The acceptance criteria as per the above table will be applicable which is as per IS13311(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 member sineach 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 columnna are joint with beam,on RCC footing sand rafts. On RCCrafts a suitable grid can be worked out Forde termining number of tests. In addition doubtful are as such as honey combedlocations, locations, where continuous seepage is observed, construction joints and visible loose pockets will also betested.
- v) The test result sare tobe examined in view of the above acceptance criteria “Good” and “Excellent” and wherever concreteis found withless than required quality as per acceptance criteria, repairs to concrete will be made. Honey combed are as and loose pockets will be repaired by grouting using Portland Cement Mortar/Polymer Modifies Cement Mortar/Epoxy Mortar, etc. after chipping loose concrete in appropriate manner. In areas where concrete is found be low acceptance criteria and defects are not apparently visible on surface, injecting approved routine appropriate proportionus ingepoxy grout /acrylic Polymer modified cements slurry made with shrinkage compensating cement/plain cement slurry etc will be resorted to fore pairs. (referrelevantch apters from CPWD Hand Book on Repairs and Rehabilitation of RCCBuildings). 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.
- 13 The contractor shall supply free of charge the materials required for testing including its transportation cost to testing laboratories. The cost of tests of TMT bars shall be borne by the contractor.The cost of tests of other materials(except TMT bars) carried out shall be borne by the contractor / Department in the manner indicatedbelow:
- (a) By the contractor, if the results show that the material does not conform to relevant codes / particular specification/ manufacturer’s specification. (b)By the Department, if the results show that the material conforms to relevant codes / particular specification / manufacturer’s specification.

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

15 REMOVAL OF REJECTED/SUB-STANDARD MATERIALS

The following procedure shall be followed for the removal of rejected/sub-standard materials from the site of work:

- a Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the Site Order Book under the signature of the Assistant Engineer, giving the approximate quantity of such materials.
- b As soon as the materials removed, a certificate to that effect shall be recorded by the Assistant Engineer against the original entry, giving the date of removal and mode of removal, i.e., whether by truck, carts, or by manual labour. If the removal is by truck, the registration number of the truck should be recorded.
- c When it is not possible for The Assistant Engineer to be present at the site of work at the time of actual removal of the rejected/sub-standard materials from the site, the required certificate should be recorded by the Junior Engineer, and the Assistant Engineer should counter sign the certificate recorded by the Junior Engineer.

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

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

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

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

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

4. 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 born by the contractor/department in the manner indicated below :

- a) By the contractor, if the results show that the cement does not conform to relevant CPWD Specifications / BIS code or specification mentioned else where in the documents.
- b) By the department, if the results show that the cement conforms to relevant CPWD Specifications / BIS code or specification mentioned else where in the documents.

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 42 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate show prescribed shall be made. In case of excess consumption no adjustment need to made.

6. The cement brought to site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-Charge.
7. The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.
8. The contractor may use OPC in place of PPC only after written permission of Engineer-in-Charge. In such case, no extra payment shall be made in any form to the contractor by the Department.

ADDITIONAL CONDITIONS FOR STEEL REINFORCEMENT

1. The contractor shall procure TMT bars of **Fe 500D** grade from primary steel producers such as **SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd and JSW Steel Ltd or any other producer as approved by CPWD who are using iron ore as the basic raw material/input and having crude steel capacity of 2.0 million tonnes per annum and above.**
 - 1.1 TMT bars shall meet the provisions of IS 1786: 2008 pertaining to **Fe 500 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 20 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 42 of the contract and shall be governed by the conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.

9. The steel brought to the site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge
10. Steel bars brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
11. In case the contractor brings surplus quantity of steel the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-Charge.
12. Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameters, as actually (not more than as specified in the drawing) used in the work, nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
13. The standard sectional weights referred to as in Table 5.4 under para 5.3.4 in CPWD specifications for works 2019 Vol. 1 will be considered for conversion of length of various sizes of MS bars, Tor steel bars and TMT bars into standard weight.
14. Records of actual sectional weight shall also be kept dia-wise & lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as derived actual weight.
15. If the derived weight as in para 14 above is lesser than the standard weight as in para 13 above, the derived actual weight shall be taken for payment.

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

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

PARTICULAR SPECIFICATION FOR CIVIL WORKS

1.0 EARTH WORK: -

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

1.2 EARTH WORK FOR MAJOR WORKS

- 1.2.1 Excavation shall be undertaken to the width of the Basement/Retaining wall footing including necessary margins for construction operation as per drawing or directed otherwise. Where the nature of soil or the depth of the trench and season of the year, do not permit vertical sides, the contractor at his own expense shall put up the necessary shoring, strutting and planking or cut slopes with or without steps, to a safer angle or both with due regard to the safety of personnel and works and to the satisfaction of the Engineer. Measurement of plan area of excavation for payment shall be permitted only.
- 1.2.2 All the major excavation shall be carried out by mechanical excavator. No extra payment shall be made for that.
- 1.2.3 The contractor shall make at his own cost all necessary arrangements for maintaining water level, in the area where works are under execution low enough so as not to cause any harm to the work shall be considered as inclusive of pumping out or bailing out water, if required, for which no extra payment shall be made. This will include water coming from any source, such as rains, accumulated rain water, floods, leakages from sewer and water mains subsoil water table being high or due to any other cause whatsoever. The contractor shall make necessary provision of pumping, dredging bailing out water coming from all above sources and excavation and other works shall be kept free of water by providing suitable system approved by the Engineer-in-charge. Sub-soil water table at work site is reported to be about approx. 6.5 m. below the general ground level as observed in the month of April. The water level is likely to rise up to 1 to 2 m. during rainy season. In order to avoid possibility of basement floor of main building being getting uplifted/damaged due to water pressure, the contractor shall lower the ground water table below the proposed foundation level by boring tube wells all around the proposed building using well point sinking method or any suitable method as approved by Engineer-in-charge. Sub soil water table shall be maintained at least 50 cm. below the P.C.C. level during laying of P.C.C. water proofing treatment, laying of basement raft and beams including filling of earth/sand under the basement floor. The water table shall not be allowed to rise above base of raft level until completion of outer retaining walls including water proofing of vertical surface of walls and back filling along the walls upto ground level and until the structure attains such height to counter balance the uplift pressure. However, the contractor should inspect the site and make his own assessment about sub-soil water level likely to be encountered at the time of execution and quote his rates accordingly. Rate of all items are inclusive of pumping out or bailing out water, if required. Nothing extra on this account whatsoever shall be paid to him. The sequence of construction shall be got approved by the Engineer-in-charge.
- 1.2.4 The contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades including signs, markings, flags, lights and flagman, as necessary at either end of the excavation/embankment and at such intermediate points as directed by the Engineer-in-charge for the proper identification of construction area. He shall be responsible for all damages and accidents caused due to negligence on his part.
- 1.2.5 The contractor shall provide suitable barricading with suitably painted single row of G.I. Sheets about 3'- 0" wide (90 cms) nailed or bolted with wooden poles spaced 2 to 3 meters apart and each pole 1.6 m to 2 m long 8 cm. to 10 cm. dia. The poles will be embedded in mobile iron pedestal rings suitably framed for giving stable support as per direction of the Engineer-in-charge. All management (including watch and ward) of barricades shall be the

full responsibility of the contractor. The barricades shall be removed only after completion of the work or part of the work. The contractor's rate shall include all above items of work and nothing extra shall be paid to the contractor over and above his quoted rates.

2 RCC WORK

The work shall be done as per CPWD specifications.

- 2.1 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in clause 42) the cost of quantity of cement so less used shall be recovered from the contractor at the rate as specified in schedule 'F'. Decision of the Engineer-in-Charge in regard to the quantity of cement which should have been actually used as per the schedule and recovery at the rate specified shall be final and binding on the contractor.
- 2.2 For non-scheduled items, the decision of the Superintending Engineer 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

3.0 A. Specification for Random Rubble Masonry

- 3.1 Scope : This specification covers materials joints, laying and mode of measurement of Random Rubble Masonry.
- 3.2 Materials : Stones: The stone shall be the type specified such as granite, trap, limestone, sand stone, quartzitic etc. and shall be obtained from the quarries, approved by the Engineer in charge. Stone shall be hard, sound durable and free from weathering decay and defects like cavities, cracks, flaws, sand holes, injurious veins, patches of loose or soft material and other similar defects that may adversely affect its strength and appearance. As far as possible. Stones shall be of uniform colour, quality or texture. Generally stone shall not contain crypts crystalline silica or chart, mica and other deleterious materials like iron-oxide organic impurities etc.
Stone with round surfaces shall be not is used.
The compressive strength of common types of stones shall be as per Table I and the percentage of water absorption shall generally not exceed 5% for stones other than specified in Table-I for laterite this percentage is 12%.

Table-I

Type of stone	Maximum Water absorption percentage by weight	Minimum compressive strength Kg/Sq cm
Granite	0.50	1000
Basalt	0.50	400
Lime Stone (Slab & Tiles)	0.15	200
Sand Stone (Slab & Tiles)	2.50	300
Marble	0.40	500
Quartzite	0.40	800
Laterite (Block)	12.00	35

Note 1 : Test for compressive strength shall be carried out as laid down in IS: 1121 (Part-I)-1974

Note : Test for water absorption shall be carried out as laid down in IS : 1121-1974

- (a) Dressing : The stone shall be merely knocked off at the sharp and irregular corns, edges and wherever necessary for lifting well into the work.
No bushing exceeding 20mm shall be allowed on the face. The quoins shall be neatly dressed to form the required angle (i.e. at jambs and corners).
- (i) Bond Stone : The stones shall not be less than 400 sq. cm in cross sectional area at any point and shall run right through the for wall up to 60 cms and in case the wall thickness exceeds 60 cms a line of two or more bond stone shall be laid from face to back

			overlapping each other by 15cms minimum, the length of such bond stones shall be at least 50cms.
		(ii)	Face stones : At least 25% stone shall be headers tailing into the work at least 2/3rd the thickness of wall or full thickness of wall for walls 30 cms and less in thickness. Such stones shall be not be less than 200 sq. cms in cross section.
		(iii)	Hearting and backing : Where hearting can accommodate a fair proportion of the stones used in the hearting shall be of large size 25% of them shall exceed 0.01 cum. in content.
		(iv)	Quoins : The quoins shall be at least 30 cms in average length and 0.01cum in content and laid alternately as headers and stretchers, out of then stone at course not exceeding 1 meter centre to centre , shall be provide with a minimum length of 50cms and cross-sections 200 sq. cm (Size of bond specified above) on each exposed face.
		(v)	Jamb Stones : The jambs shall be made with stones specified for quoins except that the stone which were required to be provided at 1 metre centre to centre on both the exposed faces shall here be provided only on the jamb and the length shall be equal to the thickness of the wall for wall up to 60cms and a line of headers shall be provided for walls thicker than 60 cms as specified for bond.
3.3	Courses	:	The masonry shall be carried out in regular courses of height not exceeding 50 cms and masonry on any day will not be raised more than 60 cms in height when using mortars having compressive strength less than 20 kg/sq. cm at 28 days and 100 cms when using mortars exceeding this strength. No attempt shall be made to level up the masonry at each course by the use of thin stones.
3.4	Thickness of Joints	:	The Joints shall not exceed 30mm at any point on the face. Clips of the stones and spells shall be wedged into the face beds and joint to avoid excessive bed and joint thickness.
3.5	Laying	:	Stones shall be laid on their natural bed and shall be solidly bedded full in mortar with close joints, chips of stone spells be wedged into the work wherever necessary. No dry work or hollow spaces shall be allowed and every stone whether large or small shall be carefully selected to fit snugly the intersties between the large stones. Masonry shall be built breaking joints in all the three directions. Bone stones and headers shall be properly laid into the work and shall be marked by the contractor with white lead paint. The bond stones shall be provided at the rate of two bond stones per square metre of face area.
3.6	Raking out joints	:	All the joints on the faces to be pointed or plastered shall be racked out with racking tool to a depth of 20mm while the mortar is still green.
3.7	Mortar	:	The mortar used for joining shall be as specified.
3.8	Scaffolding	:	Single scaffolding having one set of vertical supports shall be sound and strong, tied together by horizontal

			pieces, over which the scaffolding planks shall be fixed. The inner end of the horizontal scaffolding member may rest in a hole provided in the masonry. Such holes however, shall not be allowed in pillars under one metre in width or near the skew back of arches. The holes left in masonry work for supporting scaffolding shall be filled and made good with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 Stone aggregate 20 mm nominal size).
3.9	Protection	:	Green work shall be protected from rain by suitable covering. The work shall also be suitable protected from damage, mortar dropping and rain during construction.
3.10	Curing	:	Masonry work in cement or composite mortar shall be kept constantly moist on all faces for a minimum period of seven days. In case of masonry with fat lime mortar curing shall for at least seven days thereafter.
3.11	Measurement	:	The work shall be measured by volume and the unit shall be cubic metres. Walling curved on plan to mean radius not exceeding 6 m shall be measured separately inclusive of all cuttings waste and templates. Walling curved on plan to mean radius exceeding 6m shall be included with the general walling and shall be measured net only. No deductions or additions on any account shall be made for :- (i) Opening up to 500 sq. cm. in cross section (in calculating this area the size of the openings include any separate lintel or still but not extra width of rebated reveals if any). (ii) Ends of dissimilar materials (i.e. joints rafters, girders, purlins, trusses etc.) up to 500 sq. cm. in cross section. (iii) Bearings of chajjas, slabs, steps, shelves etc. when the bearings are not paid for the respective items.
3.12	Rate	:	The rate shall include the cost of materials and labour required for all the operations described above and shall include the following : Raking out joints for plastering or pointing done as a separate item, or finishing flush as the work proceeds. Preparing tops and sides of existing walls for raising and extending. Rough cutting and waste forming gables cores, skew backs or spandrels of arches, splays at eaves and all rough cutting in the body of walling unless otherwise specified. Bond stones or cement concrete bond blocks. Leading and making holes for pipes etc. Bedding and pointing wall plates, lintels, and sills etc. in or on walls, bedding roof tiles and corrugates sheets in or on walls. Building in ends of joints, beams, lintels etc.

B. Specification for Coursed Rubble Facing Masonry

1. **Scope** : This specification covers materials, joints, laying and mode of measurement of coursed rubble facing masonry.
 2. **Materials** : As per specification for Random Rubble Masonry.
 3. **Size of Stones** :
 - (i) No dressed up stone shall be less in length and breadth than its heights. At least 25% stones shall be headers tailing into the work at least $\frac{2}{3}$ rd the thickness of wall or full thickness of wall for walls 30 cms and less in thickness. Such stones shall be evenly distributed over the entire face.
 - (ii) The quoins shall also be of the same height as the courses in which they occur and at least 50 cms. in length.
 - (iii) The jambs shall be made with stones specified for quoins except that the length of stone in alternate course shall be equal to the thickness of the wall for walls up to 60 cms.
 4. **Dressing of Stones** :
 - (a) Exposed face of stones shall be brought to near rectangular shape.
 - (b) The bushing on exposed surfaces of the stones on outer surface of external walls shall not exceed 2 cm.
 - (c) Stones required to be used on outer surface of external walls; shall be dressed before use in construction.
 - (d) The beds and joints of exposed of stones on outer surface of external walls other than quoins shall be hammer dressed at least for a distance of 4 cms from the face to be square with the exposed faces. No rough tooling or chisel drafting would be required. The depth of gap between the surfaces of sides and bed joints and straight edge held against them shall not be more than 10 mm.
 - (e)
 - (i) The beds and joints of quoins & jambs shall be hammer dressed for a distance of at least 8 cms. from the face to be square with the exposed faces and with each other. The depth of gap between the surfaces of sides & beds joints and straight edge held against them shall not be more than 10mm.
 - (ii) No rough tooling & chisel drafting would be required on the edges of the quoin & jamb stones except on the corner edge defining the angle of the quoins & jambs. The corner edge defining the angle of the quoins & jambs shall have 2.5 cm wide two line chisel drafting on both of the angle.
 - (f) Masonry work shall be executed from exposed (outer) side of wall.
 5. **Courses** : The stones shall be laid in courses not less than 15 cms. in height. All the courses shall be of the same height. When otherwise approved no course shall be thicker than any course below it. Only one stone be used in the height of the course.
 6. **Thickness of Joint** :
 - (i) The exposed face joints shall be more or less uniform in thickness and thickness of any joint shall not exceed 20 mm.
 - (ii) Stones on outer side of wall shall be arranged suitably to stagger the vertical joints and overlapping of vertical joints shall be avoided.
 7. **Hearting and Interior Face** : The hearting and interior face shall be done in Random Rubble Masonry, By virtue of doing coursed rubble facing on external face of size of stones used and their dressing is carried out other than specified in the Random Rubble Masonry on internal face, even than nothing extra shall be paid over and above, the item of Random Rubble Masonry for internal face.
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- 8 **Laying** : Each stone shall be laid in the work on its natural bed. Stones shall be thoroughly wetted before laying when mortar used contains cement. The stones shall be laid full in mortar. The face work, hearting and interior face work shall be brought up simultaneously but no attempt should be made to level up the Random Rubble Masonry at each step by the use of chips. The masonry shall be carried truly in plumb and square. The courses shall be horizontal and joints vertical.
- 9 **Raking out Joints** : As per specification for Random Rubble Masonry.
- 10 **Mortar** : As per specification for Random Rubble Masonry.
- 11 **Scaffolding** : As per specification for Random Rubble Masonry.
- 12 **Protection** : As per specification for Random Rubble Masonry.
- 13 **Curing** : As per specification for Random Rubble Masonry.
- 14 **Measurement** :
- (a) The work shall be measured as RR Masonry for the full thickness of walling in cum and coursed stone facing masonry measured in square metres only over the exposed external face of the wall which includes the additional work of dressing wastage of material and extra cost of facing stone, if necessary.
 - (b) Walling curved on plan to mean radius not exceeding 6m shall be measured separately inclusive of all cuttings waste and templates. Walling curved on plan to mean radius exceeding 6m shall be included with the general walling and shall be measured net only.
 - (c) No deductions or additions on any account shall be made for :
 - (i) Opening up to 500 sq. cm. in cross section (In calculating this area the size of the openings include any separate lintel or sill but not the extra width of rebated reveals if any.)
 - (ii) Ends of dissimilar materials (i.e. joists, beams, rafters, girders, purlins, trusses etc.) up to 500 sq. cm. in cross section.

1.0 Rate :

The rate shall include the cost of materials and labour required for all the operations described above.

GUARANTEE BOND FOR STONE WORK:

All types of Stone work shall carry **five years guarantee** to be reckoned from the date after the expiry of maintenance period prescribed in the contract of the work against faulty workmanship, finishing, unsound materials, structural instability and other related problems as per guarantee bond Proforma attached in this tender document on **Annexure-I**.

Five years guarantee in prescribed proforma attached must be given by the contractor in token of his overall responsibility. **10% (Ten Percent) of the cost of stone work** would be retained as guarantee to the performance of the work done. The guarantee against this item of work shall be in addition to the security deposit mentioned elsewhere in the contract form. If any defects or deficiencies are noticed during the guarantee period, the same shall be rectified by the contractor within seven days of issue of the written notice by the Engineer-in-charge, failing which the defects/deficiencies would be got removed by the Engineer-in-charge from another agency at the risk and cost of the contractor. However this amount of the guarantee can be released in full, if bank guarantee of equivalent amount for the required period is produced and deposited with the department.

2.0 BRICK WORK:-

- 2.1 The brickwork shall be carried out with good quality well burnt FPS bricks of class designation 75 as per CPWD Specifications. Exposed brick work for ground level to plinth level shall be executed with selected FPS bricks of class designation 75.
- 2.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
- 2.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.
- 2.4 M.S. Strip/ Bar provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

3.0 STONE / MARBLE WORK

- 3.1 General: - The execution of stones work shall be in general as per CPWD Specifications (Volume-I) 2019, with up-to-date correction slips.

3.2 GRANITE/ MARBLE WORKS

- 3.2.1 The granite/ marble stonework shall, in general, be carried out as per the CPWD Specifications. The specifications for dressing, laying, curing, finishing, measurements, rate etc. for the granite/ marble 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/ marble stone shall be as per the CPWD Specifications for Marble work Sub Head.
- 3.2.2 The decision of the Engineer-in-Charge as regards the approval of the samples for the various types of the granite/ marble stones shall be final and binding on the Contractor. No claim of any kind whatsoever shall be entertained from the Contractor on this account. The Contractor shall then procure and get the mock up prepared at site of work for approval of quality of workmanship and the granite/ marble stone as specified. The mock up shall be prepared in lift lobby, toilet etc. on one of the floors. The size of the stones shall be as per the architectural drawings. If the quality of the workmanship and the material is as per the required standards, the mock up shall be allowed as part of the work and measured for payment and shall not be dismantled. 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. Nothing extra shall be payable on this account.
- 3.2.3 That the curvilinear profile of the entrance steps for the building shall be negotiated in segmental manner (using trapezoidal shaped granite stone pieces with straight edges for treads and rectangular stone pieces for the risers) and not in curved profiles as specified earlier. However the granite/ marble stone slabs shall be cut to required sizes and shapes, as per the architectural drawings, to negotiate the curved steps in segmented manner. The risers shall also be cut to required sizes and shapes and the edges chamfered at the joints, all as per the architectural drawings. However, the Contractor shall prepare the detailed shop drawings for the same and commence work only after the approval by the Engineer-in-Charge. The rate shall also include any consequent wastage, incidental charges involved in this work. Nothing extra shall be payable on this account. For the purpose of payment, the actual area of each type of granite/ marble stone as laid shall be measured.
- 3.2.4 For the steps (risers and treads) in the linear profile, the granite/ marble stone shall be provided in single pieces up to 2.0m as per the architectural drawings, unless otherwise specifically permitted by the Engineer-in-Charge. Wherever grooves are required to be provided the same is to be done as per architectural drawings and as directed by the Engineer-in-charge. Wherever required, the joints shall be provided as per the architectural drawings. Nothing extra shall be payable on these accounts.

- 3.2.5. The granite/ marble slabs used for providing and fixing in the 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.
- 3.2.6 While fixing the granite/ marble slabs in sills, soffits and jambs of doors, windows, ventilators etc., rebates shall be made by overlapping the stones at the required places for fixing shutters for doors, windows and ventilators etc. as shown in the architectural drawings and as per the directions of the Engineer-in-Charge. Epoxy based adhesives shall be used for fixing the granite/ marble stones to each other, or wherever required. The authorized overlap as per the architectural drawings or as directed by the Engineer-in-Charge shall be measured for payment under the same item. However, any extra mortar thickness required due to the overlap arrangement shall be deemed to have been included in the rate of this item. Nothing extra shall be payable on this account. The granite/ marble stone slab shall be fixed over low level storage cabinets using necessary adhesive as per the manufacturer's specification. The stone shall have uniform thickness and shall be provided in sizes as per the architectural drawings. The stone slab shall have uniformly leveled surface after fixing. All the joints shall be finished smoothly in a workmanlike manner.
- 3.2.7 The granite/ marble work shall be adequately protected by a layer of Plaster of Paris, which shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.
- 3.2.8 **Acceptance Criteria:** - The stone/tile work shall carry Five years guarantee after completion of work against unsound material, workmanship as per guarantee bond. Five years guarantee in prescribed Performa attached must be given by the specified 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 in addition to normal security deposit of the whole work and the amount so deducted would be released after five years from the date of completion of the entire work under 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

4.0 SAMPLES FOR STONE WORK

Samples of each item of stone work either individually or in combination shall be prepared for approval of Engineer-in-charge before commencement of work.

5.0 WOOD WORK

- 5.1 The wood work in general shall be carried out as per CPWD Specifications (Volume-I) 2019, with up-to-date correction slips.
- 5.2 The factory shall be got approved from the Engineer-in-charge before commencement of work for factory made wood work. The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.
- 5.3 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.

- 5.4 Timber shall be of specified species, good quality and well-seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.
- 5.5 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coal tar.
- 5.6 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be so accepted as kiln seasoned and/or chemically treated.
- 5.7 Transparent sheet glass conforming to IS: 2835 – 1977 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 sqm	4.0 mm
(b) For glazing area more than 0.50 sqm	6.0 mm

- 5.8 Factory made wooden flush door shutters shall be carried out as per CPWD specifications (Volume-I, 2019 with upto date correction slips).
- 5.9 The work shall be executed through specialized agencies to be approved by the Engineer in Charge.
- 5.10 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however he accepted only if these meet the specified test.
- 5.11 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.
- 5.12 The shutters should be brought at site without primer / painting.
- 5.13 Fire Rated Doors
Fire rate doors shall conform to specifications lay down by NBC and/or relevant BIS codes etc. and shall have the following additional specifications:
- 5.14 General Steel Door:
Providing and fixing 45 ± 2 mm thick pure polyester steel door shutter with double skinned with 0.8 mm (22 gauge) galvanized steel sheets (bending radius 1.2) mm spangle free of size to fit the above frame, stressed-skin design, (no visible joint on faces), lock seam joint (without any visible weld joints on the vertical edges also) and flush top with inverted channel; and with paper honey-comb infill bonded to the skin with pu/co-polymer resins, pre-punched /pre-drilled to receive ironmongery manufactured by approved vendor. Suitable

reinforcement is to be provided in the door shutter to receive the hardware. The doors with double shutters are to be provided with astragals on both sides & astragals to be fitted to the door without any fasteners. The shutter to be fixed with SS hinges 304 grades (size 100x75x3mm). The door frame (section size 100x57) should be made from 1.2mm thick GI steel /GP steel pressed to single rebate profile for better structural strength. Frames are to be fixed with fasteners. The entire assembly pre-finished with epoxy/PU/co-polymer or powder coated, as approved, tested to is 4020 (type tests for doors) as applicable like slamming, edge-loading, racking, misuse etc& guaranteed for 1, 00,000 slams test. Complete door shutter including frame shall be measured for payment. All fittings, fixtures, hinges & vision panel shall be paid separately.

5.15 2 Hrs GI - Steel Fire Rated Door:

Providing and fixing 45 ± 2mm Fire rated door of Pure Polyester (UV Resistant Grade) Powder coated, 120 minutes Fire Rated (for Stability & Integrity) Galvanized (Zinc Coated) Steel Door and frame confirming to IS 3614 Part 2 & BS 476 part 22. The Door Shutter should be made of 1.2mm thick steel pressed formed to provide a 45mm thick fully flush double skin door shell with lock seam joints at stile edges or as per manufactures specification prototype passed at GQMC-Government Quality Marking Center or CBRI. The internal construction of the door to be phenolic resin impregnated specially designed rock wool with suitable internal reinforcement. Suitable reinforcement is to be provided in the door shutter to receive the hardware and hardware to be fixed on the door with no visible fasteners. The doors with double shutters are to be provided with astragals on both sides & astragals to be fitted to the door without any fasteners. The shutter to be fixed with SS hinges 304 grade (size 100x75x3mm). Including the door frame (section size 143x57) made from 1.6mm thick GI steel pressed to double rebate profile for better structural strength. Frames are to be fixed with fasteners. The Gap between the frame & shutter should not exceed 3mm on all side except at the bottom where the gap can go upto a maximum of 7mm. The entire assembly to be pre-finished -factory finished heat ovened, powder coated, & made as per drawing. The shutter will be provided with Vision Panel with Clear fire rated glass from with proper beading all around etc. Complete door shutter including frame shall be measured for payment. All fittings, fixtures, hinges & vision panel shall be paid separately.

5.16 Door Threshold

Door thresholds shall be provided as shown on drawing. Doors without threshold shall have bottom tie of approved type.

5.17 Handling and Storage of Fabricated Materials

All doors, windows, etc. shall be packed and crated properly before dispatch, to ensure that there shall be no damage to the fabricated materials. Loading into wagons and trucks shall be done with all care to ensure safe delivery of materials at site in undamaged condition.

While taking delivery of items supplied by Owner, the Contractor shall satisfy himself that the items supplied are upto the specified standard. Any defect detected shall promptly be brought to the notice of the Engineer.

All doors, windows etc. shall be stored under cover in a way to prevent damage or distortion. Special care shall be taken to prevent staining of aluminium products by rust, mortar etc.

5.18 Assembly & Erection at Site

In general, the fixing of steel doors, windows, ventilators, louvers, etc. shall conform to IS: 1081 and as shown on drawings. The contractor shall assemble and install all steel doors. Sashes, fixed metal louvers etc. including transoms and mullions for composite units in respective places as shown on drawings, keeping proper lines and levels, and in approved workmanship manner, to give trouble free and leak-proof installations. The installation shall be done according to recommendation of the manufacturer, and/or as per direction of the

Engineer-in-charge. The installation shall be carried out under the supervision of the manufacturer's representative. The contractor shall take every precaution against damage of the components during installation. Necessary holes, chases, etc. required for fixing shall be made by the Contractor and made good again as per original, after installation, and nothing extra shall be payable to the contractor on this account.

After installation of steel doors all abrasions to shop-coat of paint shall be retouched and made good with the same quality of paint used in shop coat.

All coupling mullions, transoms, frame, etc. in contact with adjacent steel and other members, shall be well bedded in mastic. The Contractor shall bring to the site the mastic cement in original sealed containers of manufacturer and shall apply it as per the instructions. For all frames supplied by either the Owner or the contractor, mastic shall be supplied by the Contractor and caulking done properly as per drawings, Specifications and as per instructions of the Engineer.

Door shutters partition hardware fixtures etc. shall be fixed only after major equipment has been installed in rooms.

Wherever required, nylon cords of approved quality shall be supplied along with pivoted sashes and shall be of adequate length to terminate one meter from the floor. Loose ends of cards shall end in metal or plastic pull as approved by the Engineer-in-charge.

5.19 Acceptance Criteria

5.19.1 For Fabricated Items

Overall dimensions shall be within ± 1.5 mm of the size shown on drawings.

Mullions, transoms etc. shall be in one length and permissible deviations from straightness shall be limited to ± 1.5 mm from the axis of the member.

Door and window shutters shall open without jamming. The clearance at head and jamb for door shutters shall not exceed 1.5 mm. For double leaf doors, the gap at the meeting stiles shall not be more than 1.5 mm.

Door leaves shall be undercut where shown on drawings.

Doors, windows, frames etc. shall be on a true plane, free from warp or buckle.

All welds shall be dressed flush on exposed and contact surfaces.

Correctness of location and smoothness of operation of all shop installed hardware and fixtures.

Provision for hardware and fixtures to be installed at site.

Glazing beads shall be cut with mitred corners.

Glazing clips, fixing devices etc. shall be supplied in adequate numbers.

Shop coats shall be properly applied.

Exposed aluminum surface shall be free from scratches, stains and discoloration; Anodised surfaces shall present a uniform and pleasing look.

5.19.2. For Installed Items

Installations shall be at correct location, elevation and in general on a true vertical plane.

Fixing details shall be strictly as shown on drawings.

Assembly of composite units shall be strictly as per drawings, with mastic caulking at transoms and mullions, gaskets, weather strips etc. complete.

All frames on external walls shall be sealed with poly-sulphide or mastic caulked to prevent leakage through joint between frames and masonry.

All openable sections shall operate smoothly without jamming.

Cutting to concrete or masonry shall be made good and all abrasions to shop paint shall be touched up with paint of same quality as shop paint.

Aluminium doors, windows etc. shall be free from scratches, stain or discoloration. Hinges, Tower bolts, locks.

Before bulk supply, he shall submit for the approval of the Engineer-in-charge, samples of all bought out items and samples of each type of fabricated item. The samples shall be retained by the Engineer-in-charge for comparison of bulk supply and returned to the Contractor towards the end for the final incorporation in the job.

6 STEEL WORK

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

- (a) M.S. sill/tie of 10mm dia bar welded to T-iron frames to keep the frames vertical in correct position. The sill / tie shall be embedded in floor concrete. No tie is necessary for window frames.
- (b) Each T – iron frame for doors shall have 4 Nos. M.S. lugs 15x3mm, 10 cms long welded to each vertical member of the frame.
- (c) M.S. flat 6 x 25mm , 100mm long having threaded holes (No. of flats shall correspond to the no. of butt hinges to be fixed to door / window shutters) shall be welded at appropriate places at the back of the T-iron frames for fixing the required butt hinges to the frame with machine screws.

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

7.0 FLOORING

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

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

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

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

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

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

7.7 Vitrified Tile Flooring

The tiles shall be of approved make and shall generally conform to Table 12 of IS15622.

The full body Vitrified tiles of specified sizes shall be used & sample of tiles shall be got approved from the Engineer-in-Charge. All tiles shall be rectified and double charge

minimum. The Mandatory tests for vitrified tiles shall be got done as per CPWD Specifications (volume-1)/relevant BIS Code.

7.8 Ceramic Tiles Flooring

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

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

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

7.10 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. 10% (ten percent) of the cost of all tile items in addition to normal security deposit of the whole work, would be retained as security deposit and the amount so deducted would be released after Five years from the date of completion of the entire work under 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

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

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

8.2 Treatment for roof surface with integral cement based compound (brick coba). This item shall be got executed from specialized agency to be got approved from Engineer-in-Charge. However if work is got done through specialized agency, as approved by the Engineer-in-charge.

8.3 The brick bats shall be from over burnt bricks. The proprietary water proofing compound shall bear I.S.I. mark and shall conform to IS: 2645. Before execution of work water proofing

compound has to be brought to and a certificate of its conforming to IS code should be produced. The proprietary water proofing compound shall be added at the rate recommended by the specialist firms but not exceeding 3 percent by weight of cement. The Engineer in charge reserve the right to collect the random sample from material brought at site and gets it tested from laboratory of his choice. The material which does not conform to the specification shall have to be removed forthwith by the contractor.

- 8.4 The finished surface after water proofing treatment shall have minimum slope of 1 in 80. At no point shall the thickness of water proofing treatment be less than 65mm.
- 8.5 While treatment of roof surface is done, it shall be ensured that the outlet drain pipes have been fixed and mouths at the entrance have been eased and rounded off properly for easy flow of water.
- 8.6 The surface where the water proofing is to be done shall be thoroughly cleaned with wire brushes. All loose scales mortar splashes etc. shall be removed and dusted off. The surface shall be treated with neat cement slurry admixed with proprietary water proof compound to penetrate into crevices and fill up all the pores in the surface. This cement slurry shall be applied at the junction of parapet and terrace slab including the vertical face of the parapet.
- 8.7 After the slurry coat is laid, layer of over burnt brick bats shall be laid in cement mortar of mix as specified by specialist firm but not leaner than 1:5 (1 cement : 5 coarse sand) admixed with proprietary water proofing compound to required gradient and joints filled to half the depth. The bricks bat layer shall be rounded at the junction with the parapet and tapered towards top for a height of 300mm. Curing of this layer shall be done for 2 days.
- 8.8 After curing the surfaces shall be applied with a coat of cement slurry admixed with proprietary water proofing compound.
- 8.9 Joints of bricks bat layer shall be filled fully with cement mortar of mix as specified by the specialist firm but not leaner than 1:5 (1 cement : 5 coarse sand) admixed with proprietary water proofing compound and finally top finished with average 20 mm thick layers of cement mortar 1:4 (1 cement : 4 coarse sand) and finished smooth with cement slurry mixed with proprietary water proofing compound. The finished surface shall have marking of 300x300 mm false squares to give the appearance of tiles.

9.0 WATER PROOFING FOR SUNKEN FLOORS:-

- 9.1 The work shall be got executed from the specialized agency as approved by the Engineer in Charge.
- 9.2 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.
- 9.3 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.
- 9.4 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes / spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.
- 9.5 Curing of water proofing treatment shall be done for a minimum period of two weeks by flooding the water by making kiaries etc.
- 9.6 **MESUREMENTS :** The measurements shall be taken for plan area of terrace only. Length and breadth shall be measured correct to one centimeter and area shall be worked out to

nearest 0.01 sqm. No deduction in measurements shall be made for either opening or recesses for chimneys, stacks, roof lights and the like of areas up to 0.10 sqm nor anything extra shall be paid for forming such openings. For similar areas exceeding 0.10 sqm, deductions will be made in measurements for full openings and nothing extra shall be paid for making such opening.

- 10.0 Rates : The rate shall include the cost of all labour and materials involved in all the operations described above.

11.0 GUARANTEE BOND

Ten Years Guarantee bond in prescribed Performa attached at **Annexure-III** herewith shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor.

Ten percent of the cost of water proofing work shall be retained as security deposit and the amount so withheld would be released after ten 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 within seven days of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of contractor.

However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Engineer in charge, if so decided by the Engineer in charge.

The Security deposit against this item of work shall be in addition to the security deposit mentioned elsewhere in contract form.

12.0 **FINISHING:-**

- 12.1 The work shall be done in accordance with CPWD Specifications (Volume II) 2019 with up-to-date correction slips and/or manufacturers specifications wherever applicable.
- 12.2 All painting material of approved brand and manufacturer shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for at least 30 days of work. The material shall be kept under the joint custody of contractor and representative of the Engineer-in-charge. The empty containers shall not be removed from the site till the completion of the work without permission of the Engineer-in-charge.
- 12.3 In the item of finishing walls with water proofing cement paint, only the plain/flat area shall be measured for payment and nothing extra shall be paid on account of pointed wall surface.

13.0 **SANITARY INSTALLATIONS, WATER SUPPLY AND DRAINAGE**

- 13.1 The work of water supply and sanitary installations shall be got executed by the agency as approved by Engineer-in-Charge.
- (i) The entire plumbing drawing and sanitary installation drawing/ details shall be submitted by the contractor and got approved by the Engineer-in-Charge before the execution.
- (ii) The entire responsibility for the quality of work will however rest with the building contractor only.

- 13.2 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.
- 13.3 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.
- 13.4 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.
- 13.5 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.
- 13.6 The work in general shall be carried out as per CPWD specifications. Rate includes all materials, labour and all the operations mentioned in the respective items unless and otherwise specifically mentioned.
- 13.7 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.
- 13.8 The contractor shall be responsible for all the protection of sanitary, water supply fittings and fixtures against pilferage and breakage during the period of installation until the completion / handing over of the work.
- 13.9 The contractor shall submit completion plans for water supply internal sanitary installations and building drainage work within thirty days of the date of completion. These plans are to be submitted on drawings prepared preferably through computers (1 original copy + 3 photocopies) on suitable scales to show the general arrangement and desired details.

14.0 SPECIFICATIONS FOR WATER SUPPLY, SEWERAGE AND DRAINAGE

14.1 GENERAL

The scope of work comprises supply, laying, installation, commissioning and testing of water supply, sewerage and drainage works including sanitary fixtures and fittings. These works shall be executed as per the specifications of items attached and CPWD specifications 2019 Volume I & II with up-to-date correction slips up to the date of tender notice.

All the water supply and sanitary works shall be carried out by the **licensed plumbers** approved by the local authorities and skilled workman experienced in the trade. No work shall be covered without approval of the client.

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

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

The contractor shall be responsible for coordinating the work with works of other trades sufficiently ahead of time to avoid unnecessary hold-ups. Hangers, sleeves, recesses etc shall be left in time as the work proceeds whether or not these are shown in drawings.

The contractor shall submit as directed by the Engineer-in-charge, samples manufacture's drawings, equipment characteristics and capacity data etc. of all the equipment, accessories, devices etc. that he proposes to use in the installation to the Engineer-in-charge for approval.

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

All sanitary wares and fittings shall conform to IS standards. The contractor shall submit samples of all fittings and fixtures proposed to be used to the Engineer-in-charge for his approval. The approved samples shall remain with the Engineer-in-charge till the completion of the work.

All the workmanship shall conform to Indian Standard Codes of practice. The fixing and finishing shall be neat true to level and in plumb. Manufacturer's instruction shall be followed closely regarding installation and commissioning.

All fixtures shall be protected throughout the progress of the work from damage. Special care shall be taken to prevent damage and scratching of the fittings. Tool marks on exposed fixtures shall be removed with hot water only at the final completion of work.

All fixtures and accessories shall be fixed in accordance with a set pattern matching the tiles or interior finish as per architectural requirements. Wherever necessary the fittings centered to dimensions and pattern desired.

- 14.2 The work of water supply and sanitary installations shall be designed by **approved** water supply and sanitary installation design **consultants** and got executed by the agency as approved by Engineer-in-Charge.
- (ii) 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.
 - (iii) The entire responsibility for the quality of work will however rest with the building contractor only.
- 14.3 The work in general shall be carried out as per CPWD specifications. Rate includes all materials, labour and all the operations mentioned in the respective items unless and otherwise specifically mentioned.
- 14.4 Vitreous China sanitary fittings, procured from producer of firms Neycer, Hindustan, Cera , Parryware shall only be used subject to approval of samples by the Engineer-in-Charge unless otherwise specified in the items.
- 14.5 CP Brass pillar taps, bib cocks, flush valves angle etc. shall be of make Gem/Jaguar / Kingson or equivalent as per sample approved by the Engineer-in-Charge. CP Brass bib cock/stop cock shall be fixed with heavy duty CP flange.
- 14.6 SCI, CI Pipes and it fittings shall conform to the BIS specification wherever required and making good the same for which nothing extra shall be paid.
- 14.7 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. Wherever required and making good the same for which nothing extra shall be paid.
- 14.8 The SCI pipe wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall paid for on this account.

- 14.9 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.
- 14.10 Sensor operated flush valves shall be of make "AOS" or "ASRA" or equivalent.
- 14.11 P or S and floor traps (long arm upto 90 cm 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 90 cm length or more) shall have a minimum water seal of 50 mm.
- 14.12 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.
- 14.13 The pig lead to be used in jointing 100 mm, 75 mm, 50 mm SCI pipe joints shall not be less than 0.98 kg, 0.88 kg and 0.77 kg per joint respectively. A variation of 5% is allowed on higher side. However in case of variation on lower side, the quantity of pig lead less used shall be recovered from the contractor at market rate to be determined by the Engineer-in-Charge whose decision in the matter shall be final.
- 14.14 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 in case the contractor fails to submit the completion plans as aforesaid security deposit shall not be released.

14.11 INSPECTION AND TESTING

Inspection and testing of water supply installations shall be carried out as per Section 1, Part IX of National Building Code of India 2005 with up to date amendments.

Inspection and testing of sewerage and drainage installations shall be carried out as per Section 2, Part IX of National Building Code of India 2005 with up to date amendments.

14.12 GUARANTEE BOND

Ten years guarantee bond in prescribed Performa attached at **Annexure-II** herewith shall be submitted by the contractor which shall also be signed by both the specialist agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility shall rest with the building contractor.

5% (Five percent) of the cost of water supply and sanitary installation work shall be retained as security deposit and the amount so withheld would be released after ten 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 defects like leakage and manufacturing defects etc. is noticed during the guarantee period, it shall be rectified by the contractor within seven days of the receipt of intimation of defects in the work, if the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of the contractor.

However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Engineer-in-charge, if so decided by the Engineer in charge.

The Security deposit against this item of work shall be in addition to the security deposit mentioned elsewhere in contract form.

15.0 PIG LEAD

- 15.1 The pig lead for caulking of joints of SCI pipes shall be used as per the theoretical consumption for SCI pipes of sizes 100mm, 75mm, 50mm at 0.98Kg, 0.88 Kg and 0.77Kg. per joint respectively. Over and above the theoretical quantities of lead as worked out a variation of 5% shall be allowed for wastage etc. Any difference between the actual consumption of pig lead and the theoretical consumption worked out on the above basis shall be recovered at double the issue rate. Where the pig lead is arranged by the contractor, also a variation of 5% shall be allowed. In case the variation is on the lower side, the quantity of pig lead used less shall be recovered from the contractor at market rate to be determined by the Engineer-in-charge whose decision in this matter shall be final.
- 15.2 The theoretical quantity of cement to be utilized in item of concrete involving use of single aggregate and mixed by volume batching shall be computed on the basis of the coefficient for cement to be used in different item of the work provided in DSR reducing each of the coefficient by 5%. However, where the concrete is mixed by weight batching no such reduction shall be made from theoretical co-efficient given in **DSR 2023** for concrete with crushed stone aggregate.

16.0 ROAD WORK

Road work shall conform to CPWD specification 2019, in case the same is not available in CPWD specification or if required as per item, the MORTH specifications for roads and bridges 2001 shall be followed.

17.0 Aluminum Work

Aluminum work under SH : “aluminum work” of tender document shall be got executed from specialized agency. The specialized agency for the aluminum work shall be got approved from the Engineer - in - Charge, well before actual commencement of the item of work. Necessary performance certificates in respect of agencies proposed to be engaged shall be submitted within 30 days from the date of issue of acceptance letter to substantiate technical capability and experience of the agency for prior approval of the **ADG(RC)**.

Specifications for Aluminum Door, Window, Ventilator:

- 17.1 : Extent and Intent :
The work shall be carried out through an approved specialist contractor who shall furnish all materials, labour, accessories equipment tool & plant, incidental. Required for providing and installing anodized aluminum door, windows, claddings, louvers and other items as called for on the drawings. The drawings and specifications cover the major requirement only. The supplying of additional fastenings, accessory features and mentioned specifically herein but which are necessary to make a complete installation shall be a part of the contract.
- 17.2 : General :
Aluminum doors, windows etc. shall be of sizes, section detail as shown on the drawings. The details shown on the drawings indicate generally the sizes of the components parts and general standards. These may be varied slightly to suit the standards adopted by the manufacture. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and installation drawings for approval of Engineer-in-Charge and no work shall be performed until the approval of these drawings is obtained.

- 17.3 : Shop Drawings :
The contractor shall submit the shop drawings of doors, windows louvers cladding and other aluminum work, based on architectural drawings to Engineer-in-charge for his approval. The drawings shall show full size sections of door, window 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.
- 17.4 : Samples :
Samples of doors, windows, louvers etc. shall be fabricated assembled and submitted to the Engineer-in-Charge for his approval. They shall be of sizes, types etc. as decided by Engineer-in-Charge. All samples shall be provided the cost of the contractor.
- 17.5 : Sections :
Aluminum doors and windows shall be fabricated from extruded section of profiles as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineer-in-Charge. The aluminum extruded section shall conform to IS designation 63400-WP(HV9WP old designation) with chemical composition and technical properties as per IS : 733 and 1285. The permissible dimensional tolerance of the extruded sections shall be such as not to impair the proper and smooth function / operation and appearance of doors and windows.
- 17.6 : Fabrications :
Doors, window etc. shall be fabricated to sizes as shown at factory and shall be of section, sizes combinations and details as shown in the Architectural drawings, all doors, windows etc. shall have mechanical joints. The joints shall be designed to withstand a wind load of 150 kgs. per sqm. the design shall also ensure that the maximum deflection of any member shall be accurately machined and fitted to form hairline joints prior to assembly. The joint and accessories such as cleats brackets, etc. shall be of such materials as not to cause any bi-metallic 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, handing and installation. Adequate provision shall be made in the door and windows members for anchoring to support and fixing of hardware and other fixture as approved by the Engineer-in-Charge.
- 17.7 Anodizing :
All aluminum sections shall be anodized as per IS : 7088 and to required colour as specified in the item as per IS : 1868 grading, after cutting the members to requisite sizes. Anodizing shall be to the specified grade with minimum average thickness of 15 microns when measured as per IS : 6012. The anodic coating shall be properly sealed by steams or by boiling in deionized water or cold sealing process as per IS : 1868 / IS : 6057. Polythene tape protection shall be applied on the anodized sections 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, cost of testing shall be borne by the contractor.
- 18.0 **Powder Coating:**
The powder used for powder coating shall be polyester powder made by Berger or Jenson& Nicholson or equivalent. The thickness of powder coating shall not be less than 60 micron at any point measured with micrometer.
- 18.1 Protection of Finish :
-

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

19.0 Handling and Stacking :

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

19.2 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. Unit may be serial numbered and identified as how to be assembled in their final location of situation so warrants.

19.3 Where aluminum comes into contact with masonry brick work / concrete / plaster or dissimilar metals, it shall be coated with approved insulation lacquer paint or plastic tape to ensure that electro chemical corrosion is avoided. Insulation materials shall be trimmed off to clear flush line on completion.

20.0 Silicon Sealant :

The peripheral gaps between plastered faces / RCC and aluminum sections shall be sealed both from inside and outside to make the windows watertight. Gaps up to 10mm between the peripheral aluminum member and masonry / RCC / Stone shall be sealed by inserting. Backer Rod manufactured by HT TROPLAST or Supreme Industries and by application of weather silicon / sealant of DOW corning / GE silicon make.

20.1 The contractor shall be responsible for assembling composite, bedding set straight plumb, level and for their satisfactory operation after fixing is complete.

21.0 : Installation :

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

21.2 The doors windows assembled as shown on drawings shall be placed in correct final position in this opening and marks made on concrete members at jambs, sills and heads against the holes provided in frames for anchoring. The frame shall then be removed then the opening and laid aside. Neat holes with parattle 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 shall. The frame shall then be placed in final position. In the opening and anchored to the support through cadmium plated machine screws of required sized 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 meeting points of glazing bars and frames.

22.0 Neoprene Gaskets :

The E.P.D.M. gasket of suitable profile as manufactured by HANU INDUSTRIES, ANNAND LESCUYER make shall be provided at all required positions to make the glazing airtight. The contractor shall provide and install Neoprene Gaskets of approved size and profile at all locations as shown and as called for to render the doors windows etc. absolutely air tight and weather tight. The contractor shall submit samples of the gaskets for approval and procure after approval only.

23.0 Fittings :
The contractor shall cut the floor properly with stone cutting machine to exact size and shape. The spindle of suitable length to accommodate the floor finish shall be used. The contractor shall give the guarantee duly supported by the company for proper functioning of floor springs at least for 10 years.
Hinges, stays handles, tower bolts, locks and other fittings shall be of quality and manufacturer as approved by the Engineer – in – Charge.

24.0 : Manufacture's Attendances :
The manufacture immediately proper to the commencement of glazing shall adjust and set all windows and doors and accept responsibility for the satisfactory working of the opening frames.

25.0 : Details of Test :

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

25.2 The minimum number of each unit of doors / windows shall be selected at random by Engineer-in-Charge as such that all the aluminum section shall be got tested.

S. No.	Details	No. of Tests
1.	Doors, Windows & Ventilators	5% of Nos. manufactured.

25.3 The sample of major member of each unit of doors / windows shall be selected at random by Engineer-in-Charge as such that all the aluminum section shall be got tested.

25.4 The cost of sample, carriage of the samples shall be borne by the contractor. Testing charges shall be born by department, but if samples fails in testing, complete cost of testing charges shall be born by the contractor.

26.0 : Acceptance Criterion :
The aluminum sections shall conform to the provisions of the relevant items. For payment purpose only actual weight of sections shall be taken into account. If however, the sectional weight of any aluminum section is higher than the permissible variation then the weight payable shall be restricted to the weight of the section including permissible variation.

27.0 : Measurement :
Payment by weight shall be made for aluminum sections including beading only and all fixing angles cleats fittings and fixtures such as handles and hinges etc., shall not be included in the weight to be paid.

28.0 : Rates :
The rates of the items shall include the cost of all materials, labors and inputs required in all the above operations.

LIST OF PREFERRED MAKES OF MATERIALS

Name of Work:- **Repair of Internal road & Main Gate repair at IVRI Office Complex Palampur Kangra (HP).**

Acceptable makes of materials to be used in the work are enclosed. In case of non availability of the same makes, the Engineer-in charge may allow use of alternative makes. Only BIS marked materials shall be used in the work. Non-BIS marked materials may be permitted by the Engineer-in-charge only when BIS marked materials are not manufactured.

S.No.	Material	List of Preferred Makes
1	(i) Portland Pozzolona Cement/Ordinary Portland Cement	ACC, Ultratech, Ambuja Cement, J.K. Cement, Century Cement, Shree Cement, Jaypee Cement, Vikram Cement.
	(ii) White Cement	Birla White, J.K.White, Ultratech
2	Reinforcement Steel TMT bars Fe-500D	SAIL, Tata, RINL, JSW, JSPL
3	Water Proofing Compounds, Admixtures, Plasticizer, Super Plasticizer, Curing Compounds.	Fosroc, Pidilite Industries, CICO, Sika, BASF, Ardex Endura (Bal Endura), Saint Gobain-Weber, Berger Paint, KRYTON, Ferrous Crete, Asian Paints, Asian Paints Smartcare, Markchem, Bulwark Conchem, UltraTech
4	Integral Water Proofing compound with cement (For Plaster & Mortar)	Fosroc : Conplast 421, Dr.Fixit , Sika : Sikacin Asian Paints : Smart Care Vitalia& equivalent product of BASF, CICO, Ardex Endura, Saint Gobain-Weber, Berger Paint, KRYTON, Ferrous Crete, MYK Arment, UltraTech
5	Water Proofing for bathroom / toilet / balcony & other wet areas	Fosroc : Brush Bond, Dr.Fixit : Pidifine 2K, Sika : Nito Bond, Asian Paints : Damp Block 2 K & equivalent product of BASF, CICO, Ardex Endura, Saint Gobain-Weber, Berger Paint, KRYTON, Ferrous CreteF, UltraTech
6	Crystalline water proofing compound	Fosroc : Bushbond TGP, Fosroc Crystalline, Dr.Fixit : Dr.Fixit Crystalline Sika : Sika 101 h, Sika Crystalline, Asian Paints : Smart care & equivalent product of BASF, CICO, Ardex Endura, STP Ltd., Pentron, Saint Gobain- Weber, Berger Paint, KRYTON, MYK Arment, Bulwark Conchem
7	Grouts, Adhesive	MYK Latecrete (335), kerokoal, STP Ltd., BASF, Adrex Endura (White star), Ferrous Crete (Ferro-1122), Saint Gobain-Weber, Berger Paint, Asian Paints, Markchem, Reyno/Basex, UltraTech
8	Structural Steel	Tata, Jindal (Hisar), Prakash, Surya, RINL, JSW Steel Ltd.

9	Polycarbonate Sheet	GE Plastic, LEXAN& MG Polyplast, Ultralite
10	Hollow Steel Section	Jindal industries (Hisar), Tata Steel, SAIL, APL APPOLO
11	Profile steel sheet (Precoated)	Ezydeck of TATA, Lloyd Superdeck, JSW, Jindal
12	Particle Board	Action TESA, Greenlam, Merino & Archid Ply
13	Laminated Particle Board / Laminates	Action TESA, Greenlam, Century Ply, Merino& ArchidPly, Sunmica, VIRGO
14	Flush Door shutters	Duro, Century, Green Ply, archid ply, JAYNA (Jain Wood Industries), Orion Doors (Modern Wudtech Industries), Jain Doors Pvt. Ltd., A-1 Teak Products Pvt. Ltd.
15	Fire Rated Doors	Shakti Hormann, Navair, ASES, Bhawani Fire, Jain Doors Pvt. Ltd.
16	False Ceiling System	Armstrong, USG Boral, Saint Gobain, Diamond Ceiling, Anakon, Gyptech, RK Ceilings, Dexune, BOLLARD
17	Plywood / Veneer	Green ply, Century, Merino, Duro, Jayna
18	Melamine Polish	Asian Paints Melamine Gold, Wudfine of Pidilite, Timbertone of ICI Dulux.
19	Floor Spring & Door Closure	Godrej, Dorma, Dorset & Kich
20	Aluminium Section	Hindalco, Jindal, Indian Aluminium Co.
21	Anodised Aluminium Hardware (Heavy Duty)	Kinlong, Alualpha, Classic, Ebco
22	Clear/ Float/Frosted/Toughen Glass/Refractive/Coated Glass	Saint Gobain, Modiguard, Gold Plus, Guardian SunGuard
23	Aluminium Door & Window System	Eternia-Hindalco, Reynaers, Technal, Lumani
24	Stainless Steel Railing, Accessories etc.	JINDAL, Dorma, Ozone, Kich, GEZE, Godrej, Hardwyn.
25	S.S. fittings for Doors & Windows	JINDAL, Dorma, Kich, GEZE, Doorset, Godrej, Ozone, Becker Fire Solutions
26	Silicon based water repellent /	G.E. Plastics, Dow Corning, Wacker, BASF, Pidilite (Dr.Fixit/Roff), Don Building Chemicals(I) Pvt. Ltd., Reyno
27	Poly-Sulphide Sealant	Fosroc, Pidilite (Dr.Fixit/Roff), Sika, BASF, Don Building Chemicals(I) Pvt. Ltd.,
28	Mosaic Tiles / Chequerred Tiles	NITCO, Dalal Tiles Pvt. Ltd., Swastik Tiles-Alwar, NTC tiles,
29	Glazed Ceramic Tiles	Somany, Kajaria, RAK, Nitco, Johnson, OrientBell, Oasis, Varmora, Sunheartr Ceramik
30	Vitrified Tiles (Antiskid/Matt/Glazed)	Somany, Kajaria, RAK, OrientBell, Oasis, Varmora, Sunheartr Ceramik

31	Terracotta tiles	Savarock, Hunter Douglas NBK, Moeding
32	Paver Block &Kerb Stone	Dalal Tiles, KK, A-1 tiles, NTC, Swastik Tiles-Alwar, Bharat Tiles
33	Dash / Anchoring Fasteners	HILTI, Fischer, Bosch, Wuerth
34	Cement Based Wall putty	Birla wall care, JK White, Berger, Asian Paints, J.B., Basex
35	Ist Quality Acrylic Distemper (washable / Ready Mix / LowVOC)	Asian Paints (Tractor Acrylic Distemper), Berger Or equivalent paints of Nerolac or ICI Dulux, British Paints.
36	Plastic Emulsion Paint	Asian Paints (Apcolite) , Nerolac (Beauty Gold) , Berger (Rangoli): ICI-Dulux (Magik) : British Paints.
37	Acrylic Emulsion Paints	Asian Paints (Tractor Emulsion), Nerolac (Beauty Smooth) :, Berger (Bison Emulsion), ICI Dulux (Rainbow) : British Paints:
38	Textured Exterior Paint	Asian paints, Nerolac, Berger Paints, Ultratech Paints & Luxture, UTPL.
39	Acrylic Smooth Exterior Paints	Asian Paints (Apex), Nerolac : Berger (weather coat) : ICI-Dulux : British Paints:
40	Synthetic Enamel Paint	Asian (Berger : ICI-Dulux : British Paints:
41	Cement Primer	Nerolac, Berger , Asian & ICI Dulux, JK primax
42	Steel Primer (Red Oxide Zinc Chromate Primer)	Asian Paints, Nerolac, Berger, ICI
43	Wood Primer	Asian Paints (Wood Primer – White / Pink), Berger, ICI, Nerolac.
44	Epoxy Paint	Asian, Nerolac, Berger, ICI, Kansai Akzo Nobel, Saint Gobain-Weber, Asian Paints Smartcare
45	Fire Paint	Asian Paints, Akzo Nobel Coatings India Ltd., PROMAT, Jotun, Berger Paint
46	G.I. / M.S. Pipe	Tata, Jindal (Hisar), Prakash, Surya
47	G.I. Fittings	Unik, AVR, Zoloto
48	HDPE Pipes	Reliance, Jain Pipes, ORIPLAST, Supreme
49	DI Pipes	Electrosteel, Jindal, Tata Ductura, Kapilansh, Kesoram.
50	DI Fittings	Electrosteel, Jindal, Tata Ductura, Kapilangle, Kesoram.
51	UPVC pipe and Fittings	Astral, Supreme, Skipper, Prayag Polymers Pvt. Ltd., AKG, SENTINI, HB
52	SWR pipe and Fittings	SKIPPER, AKG, SENTINI, HB
53	Centrifugally Cast (Spun) Iron Pipes & Fittings	NECO, Bengal Iron Corporation (BIC), RPMF, SKF
54	Hubless Centrifugally Cast (spun) Iron Pipes & Fittings	RPMF, NECO, Bengal Iron Corporation (BIC), SKF
55	AC PIPES (Mazza)	A Infrastructure Ltd., Apurva Vinimay Pvt. Ltd., Kanoria Sugar Gen. Mfg. Co. Ltd.

56	C.I. Manhole covers, frames & GI Gratings	NECO, BIC, KK, NTC, RPMF, Venus
57	SFRC Manhole covers & gratings	KK, Jain, Pargati
58	CP Brass Fittings (Normal Range)	Continental Series of Jaquar Or Equivalent Series of Hindware, ESS ESS, Prayag
59	P.T.M.T. Bath Fittings	Prayag, Shakti, Jainco, Prima
60	Wood Polymer Composite (WPC) Door & Window Frames	BVW, Rajshri, Alstone WPC, SV Woods
61	Sanitary ware, Fittings & accessories	Hindware, Cera, Parryware
62	Mirror Glass	Atul, Modi Guard, Golden Fish, Gold Plus, Shakti
63	CPVC Pipe & fitting	Astral, Supreme, SKIPPER, PRAYAG POLYMERS PVT. LTD, Jain Irrigation System Ltd/AKG/SENTINI/ HB
64	Stainless Steel Pipes & Fittings	Jindal Stainless Steel, Viega, Rampart India Pvt. Ltd., J-Press
65	Stainless Steel Sink	Nirali, Jyna, Prayag Polymers Pvt. Ltd, Plato, Prima, Silver Shine, Cera, Jainco, Shakti, Kingston, Plato
66	RCC Pipes	Lakshmi, Sood & Sood, Jain Pipe Co. (Newai), Mahaveer Enterprises (Newai)
67	Extruded Polystyrene Insulation Board	Dowcorning, Supreme, Texas, Analco
68	Heat Resistant Tiles	Swastik Tiles-Alwar, Thermatek, Dalal Tiles, NTC
69	Light Weight Gypsum Plaster	Ferrous Crete (Ferro-500), Gyproc Saint Gobain (Elite 100), Kerakoll, USG Boral, Ultratech
70	Polymer Modified Self Curing Plaster	MYK Laticrete, Ferrous Crete, Ardex Endura
71	Floor hardener	Ironite, Ferrok, Hardonate, Saint Gobain-Weber,
72	Modular Expansion Joint	Herculus, Sanfield India Ltd. Vexcolt
73	Glass Wool	Dow Corning, U.P. Twiga, Isover
74	UPVC Doors, Windows & Ventilators (PROFILE makers & their authorized Fabcicators only)	Fenesta, Veka, Rheau, Aluplast, Wintech, Rajshri , Encraft, Advika Fenster, Prominance.
75	Hardware for uPVC Windows	Rotto, Dorset, Kinlong, Fenesta, Becker Fire Solutions, Winda, McCoy 8M
76	AAC Blocks	Ultratech, BILTECH, Eco Green, Finecrete, J.K. Cement
77	AAC Block Adhesive	UltraTech, Ardex Endura, Ferrous Crete, Saint Gobain-Weber,
78	PVC Rain water pipe & fittings As per IS :13592	Finolex, Supreme, Plasto, Jain Pipe

79	PVC Shutter	Rajshri, Sintex, M/s Jain Wood Industries
80	PVC Water Storage Tank	Sintex , Frontline Super, SPL, Orient
81	Fire door /Non Fire door Hardware	Yale, Assa Abloy, Ozone, Dorma, Becker Fire Solution, Shakti Hormann
82	Aluminium Formwork(Shuttering)	MFS Formwork System, Unimex International, WinntusAluminium Form work
83	Wall panels, Sound absorbing ceiling & tiles, AcousticSystems& Puff Panels	Armstrong, Himalyan Acoustics, Synergy, Anakon, Gyptech, BOLLARD
84	Block Board	Merino, Century, Green ply
85	FRP Doors/Panelled&Wiremesh doors	Jayna, Jain Doors Pvt. Ltd., Ashish Industries
86	Modular Furniture / Steel Furniture/ Furniture/Partition System	Godrej, Durian, Delite
87	Aluminium Composite Panel/ Aluminium High Pressure Composite Panel	Virgo, Eurobound, Alucobond, Aludecor, Reynoarch of Alstone, Alutuff
88	Aluminium Honeycomb Panels	Reynoarch Honeycomb, Alucobond, Aludecor, Alutuff
89	Zinc Composite Panels	Reynoarch Zinc Panel, Alucobond, Aludecor
90	PU Water proofing	Saint Gobain Weber, KRYTON, MYK Arment
91	PU & Epoxy Flooring	Saint Gobain Weber, KRYTON, Asian Paints Smartcare, MYK ArmentFE
92	High Pressure Laminate	Virgo, Merino, Fundermax, Versito, Greenlam
93	PVC-U pipes & Fittings	Supreme, Astral, Skipper
94	M.S. tubular windows Press steel door frames	Jangid Engineering, AGFUV, SEN HARVIC, NAVAIR Delhi, SUKRITI Delhi, Chandni industries
95	Metal Glazed Fire Doors & Hardware	Shakti Hormann, Navair, Bhawani Fire, JC Fire
96	Lead Line Doors & Hardware	Shakti Hormann, Navair, Metaflex
97	Hollow Metal Doors & Hardware	Shakti Hormann, Navair, Bhawani Fire
98	Pressed Steel Door/window/ventilator Frames Manufacturers	Krishna Steel Fabricator Sirsa, Laxmi Steel Works Bahadurgarh, Ashish Industries Ghaziabad, Ashwani & Sons, Shri Ganpati Doors, PSI
99	Precoated/Pre-painted Galvanized RollFormed Steel Doors, Windows and Ventilators Frames	NCL Buildtech Limited, Madhu Industries Sanharbic, Elixir Met Form
100	Polymer modified ready mix plaster	Saint Gobain, Ultratech, Ferrous Crete, USG Boral, GYPROC, ACC, MARKCHEM, UltraTech
101	External Thermal Insulation & composite system	Berger Paints, MBCC Group, Wacker chemie, Asian Paints
102	Rebar Coupler	RM Engineer, Dextra, Moment, Sanfield

103	Factory Made Modular Kitchen and Wardrobes	Godrej/ Brown Crust/ Sleek(Asian Paints)
104	SMC Panel Tank	Sovisy/Sintex/Amitex
105	Plaster of paris	J.B./Shakrni/JK Plus
106	Precast Boundary Wall	Paras Steel Industries/Trilok Precast Pvt. Ltd.
107	CURING COMPOUND	FOSROC, BASF, STP, SIKA
108	MICRO CONCRETE	FOSROC, BOND, BUILTECH, STP

Note: EE, CPWD, Madhopur reserves the right to add or delete any materials and Brands in the list of preferred materials/brands on the recommendations of Engineer-in-charge.

**TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF STONE WORKS**

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

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

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing and unsound materials and other related problems.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable after the expiry of maintenance period prescribed in the contract for the **minimum life of five years** to be reckoned from the date after 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 risk and cost. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

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

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

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

1. _____
2. _____

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

1. _____
2. _____

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

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

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

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

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

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

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

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

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

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

1. _____
2. _____

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

1. _____
2. _____

GUARANTEE TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS IN BASEMENT/TERRACE/TOILETS.

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

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 one other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

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

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

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

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

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

That if the Guarantor fails to execute the water proofing or commits breach there under, then the Guarantor will indemnify the Principal and his successor against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default 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 of 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. _____

Singed for and on behalf of the President of India by _____

In the presence of –

1. _____
2. _____

TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF ALUMINUM WORKS

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

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

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing and unsound materials and other related problems.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable after the expiry of maintenance period prescribed in the contract for the **minimum life of five years** to be reckoned from the date after 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 risk and cost. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

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

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. _____

BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called "the Government") having agreed under the terms and conditions of agreement No. _____ dated - _____ made between _____ and _____ (hereinafter called "the contractor(s)") _____ for the work _____ (hereinafter called "the said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs. _____ (Rupees _____ only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement, we

_____ (hereinafter referred to as "the Bank") hereby undertake to pay to the _____
(Indicate the name of the Bank)
Government an amount not exceeding Rs. _____ (Rs. _____ only) on demand by the Government.

2. We _____ do hereby undertake to pay the amounts due and payable

(Indicate the name of the Bank)

under this Guarantee without any demure, 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(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees _____ only).

3. We, the said bank further undertake to pay to the government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the contractor(s) shall have no claim against us for making such payment.

4. We _____ further agree that the guarantee herein contained shall

(Indicate the name of the Bank)

remain in full force and effect during the period that would be taken for performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-charge on behalf of the government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.

5. We _____ further agree with the Government that the Government

(Indicate the name of the Bank)

shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) 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(s) and to forebear 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(s) or for any forbearance, act of omission on the part of the government or any indulgence by the Government to the said contractor(s) 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. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We _____ lastly undertake not to revoke this guarantee
except with

(Indicate the name of the
Bank)

the previous consent of the Government in writing.

8. This guarantee shall be valid up to _____, unless
extended on demand by Government. Notwithstanding anything mentioned above, our liability
against this guarantee is restricted to Rs. _____ (Rs.
_____ only) and unless a claim in writing is lodged with us within six
months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under
this guarantee shall stand discharged.

Dated: the _____ day of _____
for _____

(Indicate the name of the Bank)

AFFIDAVIT

I / We have submitted a bank guarantee for the work _____

(Name of work)

Agreement No. _____

Dated _____ from _____

(Name of the Bank with full address)

to the Executive Engineer _____ with a view

(Name of the Division)

to seek exemption from payment of performance guarantee in cash. This Bank guarantee expires on _____ I / We undertake to keep the validity of the bank guarantee intact by getting it extended from time to time at my / our own initiative up to a period of _____ months after the recorded date of completion of the work or as directed by the Engineer in charge.

I / We also indemnify the Government against any losses arising out of non-encasement of the bank guarantee if any.

(Deponent)

Signature of Contractor

Note : The affidavit is to be given by the Executants before a first class Magistrate.

List of items to be executed through specialized agencies

1. Stone Works/Tile Work
2. Water Supply, Sanitary & drainage works
3. Water proofing work.
4. Aluminium work for doors and windows.

Such specialized agencies should be in such business for more than last five years. Those agencies should have satisfactorily completed at least three numbers such specialized works of requisite amount, during last five years.

The main agency shall have to submit credentials of such specialized agency along with full technical details of works executed, to whom he want to engage for the work and shall have to obtain prior approval from the engineer in charge.

The responsibility of the quality of work executed by the specialized agency shall be owned jointly by the specialized agency and main agency. However, prime responsibility shall be owed by the main agency.

**Executive Engineer
Madhopur Division
CPWD, Madhopur (Pb).**

PART-C

(SCHEDULE OF QUANTITIES)