



GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

TENDER DOCUMENT

FOR

**Comprehensive conservation, retrofitting and
setting up of service building in North Block,
New Delhi, Phase-I**

Issued by

Executive Engineer
Central Vista Project Division-6,
Adjacent to Bungalow no. 9, Sunehri Bagh, New Delhi-110011
(delee-cvdpd6@gov.in, M: 9205975576)

भारत सरकार
GOVERNMENT OF INDIA
CENTRAL VISTA PROJECT DIVISION-6
CENTRAL PUBLIC WORKS DEPARTMENT
New Delhi-110011
(Mobile: 9205975576, Email: delee-cvdpd6@gov.in)
TENDER DOCUMENT

N.I.T. No.	:	01/CE/CVPZ(C)-2/2025-26
Name of work	:	Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I.
Estimated Cost (Rs.)	:	3,38,01,24,894/-
Earnest Money (Rs.)	:	3,48,01,249 /-
Performance Guarantee	:	5% of tendered value
Completion Period	:	24 (Twenty-four) Months
Pre-bid Meeting	:	01.05.2025 at 11:00 A.M.
Last date and time for submission of bid	:	13.05.2025 up to 3:00 P.M.

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PART-A

GENERAL INFORMATION

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

1. The Executive Engineer, Central Vista Project Division-6, CPWD, Sunehri Bagh, New Delhi-110011 (delee-cvpd6@gov.in, M: 9205975576) on behalf of the President of India invites percentage rate online bids from CPWD enlisted contractors of appropriate class in Building & Roads (erstwhile composite/Building/Infrastructure) category and firms/contractors of repute, meeting the eligibility conditions for the work in two bid system for the following work:

NIT No	01/CE/CVPZ(C)-2/2025-26
Name of work	Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I
Location	North Block, Central Secretariat, New Delhi
Estimated cost put to tender (Rs.)	3,38,01,24,894/-
Earnest Money Deposit (Rs.)	3,48,01,249 /-
Period of Completion	24 months
Pre-Bid Date and Time	01/05/2025 at 11:00 AM
Last date & time of submission of bid, earnest money receipt and other documents as specified in NIT	13/05/2025 at 3:00 PM
Date and time of opening of bid	13/05/2025 at 3:30 PM

The work is estimated to cost Rs. 3,38,01,24,894/- (Civil Rs. 2,75,76,32,707/- + Electrical component Rs. 62,24,92,187/-). This estimate amount, however, is given merely as a rough guide.

1. Contractors who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted. [1(a), 1(b), 1(c), 1(d), 1(e), 1(f) and 1(g) are applicable for CPWD enlisted contractors of appropriate class as well as non-CPWD enlisted contractors]
- (a) Past experience:** The bidder should have satisfactorily completed the works as mentioned below during the last seven years ending upto 31.03.2025.

(i) Three similar works each of value not less than Rs. 135.2 cr.

or

Two similar works each of value not less than Rs. 202.8 crore

or

One similar work of value not less than Rs. 270.4 crore

Similar work shall mean works of “Building work including internal water supply, sanitary installations, internal electric installation,” works executed under one agreement in India.

Also;

- 1) At least one similar work or any other work shall have minimum one basement work.
- 2) At least one similar work or any other work shall have HVAC.
- 3) At least one similar work or any other work shall have firefighting.
- 4) At least one similar work or any other work shall have substation.

Note:

1. Basement, HVAC, firefighting and substation works if executed under separate contracts shall be considered for the purpose of assessing the technical competence only without adding its monetary value for determining the eligibility criteria
2. Only completed similar works shall be considered. Also, the components of the work other than similar work definition shall not be considered while working out the value of similar works.

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

- (ii) In case, the eligible work has been executed by a Joint Venture through one or more individual firms, then cost of completed work shall be distributed among the individual firm(s) in proportion to their share in Joint Venture and that will be considered as work experience for individual firm(s) for pre-qualification in bidding.

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

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

- (b) **Average Annual Financial Turnover:** The bidder should have had Average Annual Financial Turnover of Rs. 169 cr. on construction works during the last three consecutive financial years ending 31st March 2024 or 2025 duly certified and audited by the Chartered Accountant (Scanned copy of certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). Year in which no turnover is shown would also be considered for working out the average. The value of annual

turnover figures shall be brought to the current value by enhancing the actual turnover figures at simple rate of 7% per annum.

- (c) **Profit & Loss:** The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets (standalone financial statement), ending 31st March 2024 or 2025, duly certified and audited by the Chartered Accountant.
- (d) **Banker's certificate from a commercial bank or Net Worth Certificate:** Bidder should have a Banker's Certificate from a commercial Bank, of the amount equal to Rs. 135.2 crores certified by banker or Net Worth certificate of Rs. 33.8 crores issued by certified Chartered accountant with Unique Document Identification Number (UDIN). (Scanned copy of original to be uploaded).
- (e) **Bidding capacity:** The bidding capacity of the bidder should be equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

Bidding capacity = $[A \times N \times 1.5] - B$

Where,

A = Maximum turnover in construction works executed in any one year during the last Seven years ending on 31.03.2024 or 31.03.2025, taking into account the completed as well as works in progress. The value of construction works shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

N = Number of years prescribed for completion of work for which bids has been invited.

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

Note:

- i) The bidder should submit bidding capacity as per Form C-3.
- ii) Bidding capacity is applicable for all the bidders including CPWD enlisted contractors.
- iii) The bidder shall submit the calculation sheet of bidding capacity as per above formula along with Bid documents and submit an undertaking that all works in progress or awarded to him have been included in the list submitted by him in the Form C-1 and no ongoing work has been left out. In case, it is found that bidder has concealed any information, suitable legal as well as criminal action shall be taken against bidder for concealing such information.
- iv) Bidding capacity formula, for CPWD contractors who are enlisted based on rule 6.1.7 of Enlistment Rules -2024 i.e., government retired engineer/architect for three years from the date of issue of enlistment order is as follows:

Bidding Capacity = $[A \times N \times 1.5] - B$

Where,

A = Banker certificate figure as submitted by applicant (i.e. government retired engineer/ architect) at the time of enlistment for first year of enlistment and subsequent fresh bankers' certificate for second and third year respectively.

Value of A for first year will be mentioned in the enlistment order by the member secretary of advisory committee for enlisting authority.

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and on-going works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula used for other entities shall be applicable to it for calculation of bidding capacity.

Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.

v) Bidding capacity, for CPWD contractors who are enlisted based on rules 9.6.3 & 9.6.4 of Enlistment Rules-2024 i.e. new entity based on previously enlisted entity for three years from date of issue of enlistment order, is as follows:

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners/directions in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

vi) Bidding Capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules -2024 shall be as follows:

$= \{[A' \times N \times 1.5] - B\}$ Where,

A' = Proportionate share of newly enlisted director/partner in originally enlisted company/firm multiplied by the factor A, as given below.

Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

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

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Enlisted entities based on rules 6.1.7, 9.6.3 or 9.6.4 of enlistment rules 2024 can submit MoU from agency having requisite experience for structural system technology if the enlisted entity does not have required experience.

(f) Experience of ongoing building works: The bidder should have at least one ongoing building work* of contract value not less than Rs. 135.2 crores. Only ongoing work secured in the last three years ending last day of previous month of date of call of bids shall be considered. The value of ongoing work(s) shall be brought to current costing level by enhancing the tendered value of work at simple rate of 7% per annum; calculated from the date of start of work to previous day of last day of submission of tenders.

- Building work need not be the similar work as defined above at clause 1(a).

(g) Average Monthly Turnover: The bidder should have achieved following average monthly financial turnover/ progress in any construction work consisting not less than Rs. 135.2 cr (not necessarily similar work), completed during the last 7 (seven) years ending 31.03.2025.

a. Two works with Rs. 8.4 cr per month

Or

b. One work with Rs. 11.2 cr per month.

The value of average monthly financial progress of bidder shall be worked out on the basis of completion cost of work divided by actual duration of completion of work. The value of average monthly financial progress shall be brought to current costing level by enhancing the actual value of monthly turnover of single work at a simple interest of 7% per annum calculated from the date of completion of the work to previous day of last day of submission of tenders

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. This information and instructions for bidders posted on website shall form part of bid document.
4. The bid document consisting of Plans, Specifications, Schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website **<https://etender.cpwd.gov.in> or www.cpwd.gov.in** free of cost.
5. But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or Banker's Cheque or Fixed Deposit Receipts or/ and Bank Guarantee including e Bank Guarantee (for balance amount as

prescribed) from any of the Commercial Bank towards EMD in favour of Executive Engineer(C), Central Vista Project Division (C) -5, CPWD, New Delhi, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/ AE), CPWD and other documents as specified.

6. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered/update their profile beforehand. The necessary training materials including the videos with step-to-step process are available on download section of <https://etender.cpwd.gov.in>.
7. The intending bidder must have valid class-III digital signature certificate with encryption key (combo type) to perform any operations/transactions on the e tendering portal / website and the bidder should download and install the e Msigner on their system as per instruction available on download section of <https://etender.cpwd.gov.in>.
8. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
9. Contractor can upload documents in the form of JPG format and PDF format.
10. **Certificate of Financial Turn Over:** At the time of submission of bid, contractor may upload Affidavit/Certificate from CA mentioning Financial Turnover of last 7 years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.
11. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in yellow colour and the moment rate is entered, it turns sky blue.

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

However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
12. The Technical Bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.
13. Pre-Bid conference shall be held in o/o Chief Engineer, CVPZ(C)-2, Sunehri Bagh Road, New Delhi. at 11:00 AM on 01.05.2025 to clear the doubt of intending bidders, if any.
14. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
15. **List of documents to be scanned and uploaded within the period of bid submission:**

1	Letter of transmittal.
2	Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee i/c e-bank guarantee (for balance amount as prescribed) from any of the Commercial Banks against EMD.

3	Copy of receipt for deposition of original EMD to division office of any EE, CPWD. Scanned copy of original Bank Guarantee including e-Bank Guarantee of any commercial Bank against EMD. (As per Annexure-A)
4	Certificate of Financial Turnover from CA (as per Form-A)
5	Average monthly turnover (as per Form-A1)
6	Banker's Certificate or Net Worth Certificate (as per Form-B/B1)
7	Details of similar works executed by bidder (as per Form-C)
8	Details of all projects under execution by bidder (as per Form-C1)
9	Details of On-going building work of value not less than Rs 135.2 Crore (as per Form-C2)
10	Bidding capacity (as per Form-C3)
11	Structure & Organization (as per Form-E)
12	Undertaking on structural stability and soundness of Already completed buildings and infrastructure Projects (As per Form F)
13	Affidavit as per provisions of CPWD-6 (as per Form-G)
14	Certificate under rule 144(XI) GFR (as per Form-H)
15	GST registration Certificate, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with other bid documents. "If work is awarded to me, I/we shall obtain GST registration Certificate as applicable, within one month 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." (as per Form-I)
16	Permanent Account Number (PAN) as issued by the Income Tax Department
17	Integrity Pact signed by the bidder in the presence of a witness for works equal to or above the threshold value given in Schedule-F
18	Any other document as specified in NIT

CPWD-6 FOR Tendering
GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
NOTICE INVITING E-BIDS

1. Percentage rate bids are invited on behalf of President of India from the pre-qualified firms/agencies, for the work: **“Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I”**

1.1 The work is estimated to cost Rs. 3,38,01,24,894/- (Civil Rs. 2,75,76,32,707/- + Electrical component Rs. 62,24,92,187/-). This estimate amount, however, is given merely as a rough guide.

1.2 Intending bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below during the last seven years ending last day of the month previous to the one in which tenders are invited. Criteria of eligibility for submission of bid documents:

1.2.1 Criteria of eligibility for bidders:

(a) **Past experience:** The bidder should have satisfactorily completed the works as mentioned below during the last Seven years ending last day of the month previous to the one in which tenders are invited.

- (i) Three similar works each of value not less than Rs. 135.2 crore
or
Two similar works each of value not less than Rs. 202.8 crore
or
One similar work of value not less than Rs. 270.4 crore

Similar work shall mean works of “Building work including internal water supply, sanitary installations, internal electric installation,” works executed under one agreement in India.

Also;

- 1) At least one similar work or any other work shall have minimum one basement work.
- 2) At least one similar work or any other work shall have HVAC.
- 3) At least one similar work or any other work shall have firefighting.
- 4) At least one similar work or any other work shall have substation.

Note:

1. Basement, HVAC, firefighting and substation works if executed under separate contracts shall be considered for the purpose of assessing the technical competence only without adding its monetary value for determining the eligibility criteria

2. Only completed similar works shall be considered. Also, the components of the work other than similar work definition shall not be considered while working out the value of similar works.

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

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

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

- (b) Average Annual Financial Turnover:** The bidder should have had Average Annual Financial Turnover of Rs. 169 Crore on construction works during the last three consecutive financial years ending 31st March 2024 or 2025 duly certified and audited by the Chartered Accountant (Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). Year in which no turnover is shown would also be considered for working out the average. The value of annual turnover figures shall be brought to the current value by enhancing the actual turnover figures at simple rate of 7% per annum.
- (c) Profit & Loss:** The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets (standalone financial statement), ending 31st March 2025, duly certified and audited by the Chartered Accountant.
- (d) Banker's certificate from a commercial bank or Net Worth Certificate:** Bidder should have a Banker's Certificate from a commercial Bank, of the amount equal to Rs. 135.2 crores certified by banker or Net Worth certificate of Rs. 33.8 crores issued by certified Chartered accountant with Unique Document Identification Number (UDIN).
- (e) Bidding capacity:** The bidding capacity of the bidder should be equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

Bidding capacity = $[A \times N \times 1.5]$ - B

Where,

A = Maximum turnover in construction works executed in any one year during the last Seven years ending on 31.03.2024 or 31.03.2025, taking into account the completed as well as works in progress. The value of construction works shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

N = Number of years prescribed for completion of work for which bids has been invited.

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

Note:

- i) The bidder should submit bidding capacity as per Form C-3.
- ii) Bidding capacity is applicable for all the bidders including CPWD enlisted contractors.
- iii) The bidder shall submit the calculation sheet of bidding capacity as per above formula along with Bid documents and submit an undertaking that all works in progress or awarded to him have been included in the list submitted by him in the Form C-1 and no ongoing work has been left out. In case, it is found that bidder has concealed any information, suitable legal as well as criminal action shall be taken against bidder for concealing such information.
- iv) Bidding capacity formula, for CPWD contractors who are enlisted based on rule 6.1.7 of Enlistment Rules -2024 i.e., government retired engineer/architect for three years from the date of issue of enlistment order is as follows:

$$\text{Bidding Capacity} = \{[AxNx1.5]-B\}$$

Where,

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

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and on-going works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula used for other entities shall be applicable to it for calculation of bidding capacity.

Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.

- v) Bidding capacity, for CPWD contractors who are enlisted based on rules 9.6.3 & 9.6.4 of Enlistment Rules-2024 i.e. new entity based on previously enlisted entity for three years from date of issue of enlistment order, is as follows:

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners/directions in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

- vi) Bidding Capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules -2024 shall be as follows:

$$=[A' \times N \times 1.5] - B \text{ Where,}$$

A' = Proportionate share of newly enlisted director/partner in originally enlisted company/firm multiplied by the factor A, as given below.

Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

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

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Enlisted entities based on rules 6.1.7, 9.6.3 or 9.6.4 of enlistment rules 2024 can submit MoU from agency having requisite experience for structural system technology if the enlisted entity does not have required experience.

- (f) Experience of ongoing building works:** The bidder should have at least one ongoing building work* of contract value not less than Rs. 135.2 crores. Only ongoing work secured in the last three years ending last day of previous month of date of call of bids shall be considered. The value of ongoing work(s) shall be brought to current costing level by enhancing the tendered value of work at simple rate of 7% per annum; calculated from the date of start of work to previous day of last day of submission of tenders.

- Building Work need not be the similar work as defined above at clause 1.2.1(a).

- (g) Average Monthly Turnover:** The bidder should have achieved following average monthly financial turnover/ progress in any single construction work consisting not less than Rs. 135.2 cr (not necessarily similar work), completed during the last 7 (seven) years ending 31.03.2025.

a. Two works with Rs. 8.4 cr per month

or

b. One work with Rs. 11.2 cr per month.

The value of average monthly financial progress of bidder shall be worked out on the basis of completion cost of work divided by actual duration of completion of work.

The value of average monthly financial progress shall be brought to current costing

level by enhancing the actual value of monthly turnover of single work at a simple interest of 7% per annum calculated from the date of completion of the work to previous day of last day of submission of tenders.

2. Agreement shall be drawn with the successful bidders 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 website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be 24 months from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. The site shall be made available to the contractor in the phased manner as specified below: -
The offices occupied by the Ministry of Home Affairs shall be available first (say phase 1A) and rest of the spaces like offices of Ministry of Finance, DoPT etc. shall be available after 4 months from the stipulated date of start of the work (say phase 1B).
5. The bid document consisting of Plans, Specifications, Schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. The proposed work is of very prestigious nature and is required to be completed strictly within the prescribed **time limit of 24 months** with the highest standards of quality and workmanship. The bidder shall note the following essential requirements of the work.

(a) Challenges/constraints:

- (i) The site of work is near to the existing South Block, President Estate, VP residence and old Parliament Buildings. The site of work is very sensitive from security point of view/security restrictions/ working time restrictions etc. In view of high degree of security concerns at site and the work itself, stringent access control measures shall be exercised for entry and exit of manpower, material and construction equipment in the area. Security arrangements shall include but not limited to strict access control for persons, materials & vehicles into the site, to ensure identity of workers and staffs, 24 hours CCTV monitoring of site (approximately 15 No. bullet cameras, 3 No. PTZ cameras, 2 MP cameras, 90 days recording, as per tender CCTV makes, recording to be handed over in removable storage every 90 days, nothing extra shall be paid on his account). Further necessary security requirements shall be decided by the Delhi Police or other security agencies. Contractor shall provide for all those measures which are usually provided in major construction projects to be executed in highly secured premises and facilitate checking of their workforce and employees by security agencies. Infrastructure arrangement for security measures specific to this particular site shall also be made by contractor and is bound to follow the security measures insisted by the security authorities.

- (ii) The existing services of unfiltered water supply, water supply, drainage line, Sewerage line, E&M power Cables if any passing through plot & feeding to nearby buildings, shall be got shifted as directed by Engineer-in-Charge and shall be payable to contractor as per clause 12 of the agreement. The necessary administrative approval from various authorities for such shifting shall be taken by the department.
- (iii) The work also includes large scale stone & lime work, retaining wall/ D- wall along with water proofing for service building. As the work is of nature of retrofitting, the localised challenges of preserving, making local supports for working, structural strengthening and other miscellaneous shall be addressed. The contractor shall plan resources accordingly.
- (iv) The contractor has to establish labour camp, laboratory, storage yard, etc within Delhi NCR area and therefore suitable land needs to be identified & may be hired/leased by contractor after award of work. The contractor shall make his own arrangement for transportation of labour from labour camp to site and site to camp for working in three shifts, as required. For any hindrance in making three shifts or any loss of time due to partial closure of work in view of restrictions on permissible limit of noise in night, security checking, VVIP Movements etc., contractor is not entitled to make any claim. The bidder shall submit a plan indicating establishment of facilities for labour, laboratory, storage yards, etc and mobilisation of T&P, within 15 days from the date of award of work.
- (v) The offices occupied by the Ministry of Home Affairs shall be available first (say phase 1A) and rest of the spaces like offices of Ministry of Finance, DoPT etc. shall be available after 4 months from the stipulated date of start of the work (say phase 1B).

(b) Adherence to completion time and quality:

- (i) The contractor may have to execute the work in three shifts with large man power of skilled, semi-skilled and un-skilled workers, experienced supervisors and professional engineers as well as materials and machinery. Highly experienced and skilled workmen proficient in traditional crafts like stone carving, fine stone work, wood work, lime work and retrofitting may also be required. The contractor shall also make arrangement for special tools for above works.
 - (ii) Adequate health and safety measures shall be taken by the contractor in view of the COVID-19 pandemic like situation, if arises. The Necessary safety audits shall be conducted periodically as prescribed by the government.
 - (iii) The bidder shall follow green construction practices and guidelines issued by CPCB and CPWD.
9. Earnest money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks drawn in favour of **“Executive Engineer(C), Central Vista Project Division (C)-5, CPWD, New Delhi”** which shall be submitted in original along with the tender documents as mentioned in the NIT.

A part of earnest money is acceptable in the form of bank guarantee/ e-Bank Guarantee also. In such case, minimum 50% of earnest money or Rs. 20.00 Lakh whichever is less, shall have to be deposited in shape prescribed above and balance may be deposited in the shape of Bank Guarantee/ e-Bank Guarantee of Commercial Bank having validity for six months or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

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

The bid submitted shall be opened at 03:30 PM on 13.05.2025.

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

- (i) The bidder is found ineligible.
- (ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
- (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.
- (iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

11. The contractor whose bid is accepted will be required to furnish Performance Guarantee at specified percentage of the tendered amount as mentioned in schedule E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee/e-bank guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The Earnest Money deposited along with tender shall be returned after receiving the aforesaid Performance Guarantee. The Bidder whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC, and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub-agencies, if any, engaged by the Bidder for the said work with in the period specified in Schedule-F.

12. The description of the work is as follows:

Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I various building component/elements of plinth area 76,196 sqm inside North Block and service block of 7,200 sqm, hence totalling **83,396 sqm.**

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services

required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work. 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 assigning any reason. All bids in which any prescribed condition is not fulfilled or any condition including that of conditional rate is put forth by the bidders shall be summarily rejected.

13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with bids is strictly prohibited and the bids submitted by the bidders who resort to canvassing will be liable to rejection.
15. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
16. The bidder shall not be permitted to bid for works in the CPWD Circle (Division in case of Bidders of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Housing and Urban Affairs. Any breach of this condition by the bidder would render him liable to be removed from the approved list of Bidders of this Department.
17. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a Bidder for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the Bidder or any of their employees is found any time to be such a person who has not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the Bidder's service.
18. The bid for the works shall remain open for acceptance for a period of Seventy-five (75) days from the date of opening of financial bid. Further:
 - (i) If any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, 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, 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 of work issued or not.
 - (ii) If any bidder withdraws his bid or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of

7 days after last date of submission of bids, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% the said earnest money absolutely irrespective of letter of acceptance of work issued or not.

- (iii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, bidder shall not be allowed to participate in the rebidding process of the same work.
19. This notice inviting bid shall form a part of the contract document. The successful bidder, on acceptance of his bid by the Accepting Authority shall within 15 days from the letter of acceptance, sign the agreement consisting of:
- (a) The Notice Inviting Bid, all the documents including special conditions, additional conditions, particular specifications and drawings, if any, forming part of the bid as submitted at the time of submission of bid and the rates quoted at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7 – GCC 2023 for Construction works incorporating corrected as per CON Circular up to last date of submission of bid.
 - (c) Corrigendum, if any.

20. For Composite Bid document:

- 20.1.1 The Executive Engineer, Central Vista Project Division-6, in charge of the major component, will call bids for the work. The cost of Bid document and Earnest Money has been fixed with respect to the combined estimated cost put to tender of all components i.e. Civil and E&M.
- 20.1.2 The bid document will include following three components:
 - Part A:** - CPWD-6, CPWD-7/8 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2023 for as amended/modified up to last date of submission of bid.
 - Part B:-** General / specific conditions, specifications and schedule of quantities applicable to major component of the work.
 - Part C:** - Schedule A to F for minor component of the work (competent authority under clause 2 and clause 5 shall be same authority as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.
- 20.1.3 The bidders must associate with himself, other agencies as per NIT conditions.
- 20.1.4 The eligible bidders shall quote rates for all items of major component as well as for all items of minor components of work.
- 20.1.5 After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign 2 copies of agreement. One such signed set of agreement shall be handed over to EE in charge of minor component. EE of major component shall operate for all civil related works. EE (Electrical) in charge of E&M component shall operate for all E & M related works.
- 20.1.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.

- 20.1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.
- 20.1.8 The main contractor has to associate contractor(s) for specialized component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such contractor(s) to Engineer-in-charge of relevant component(s) within prescribed time. Name of the contractor(s) to be associated shall be approved by Engineer-in-charge of relevant component(s).
- 20.1.9 In case the main contractor intends to change any of the above contractor/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of relevant specialized component(s). The new contractor/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any contractor, he can also direct the contractor to change the contractor executing such items of work and this shall be binding on the contractor.
- 20.1.10 The main contractor has to enter into agreement/MOU with agencies contractor(s) associated by him for execution of component(s). Copy of such agreement/MOU shall be submitted to EE in charge of each relevant component as well as to EE in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.
- 20.1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of relevant component directly to the main contractor.
- 20.1.12A. The Composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer- in-Charge of major component after record of completion certificate of minor component by respective EE in-charge of work.
- 20.1.12B. Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their respective component of work and pass on the same to the EE of major component for including in the final bill for composite contract.
21. **Integrity Pact:** The contractor shall download the Integrity Pact, which is a part of tender documents, affix his signature in the presence of a witness, and upload the same while submitting online bids for all works of estimated cost put to tender equal or more than the threshold value given in Schedule-F. In the event of his failure to sign and upload the Integrity Pact along with other bid documents, his bid shall be rejected.
22. The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer/ Assistant Engineer (Phone no.- 9811561455, e- mail Id - delee5-erp@cpwd.gov.in) or ERP helpline no. 18001803286 or e-mail Id cpwd.support@techmahindra.com. The e- tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

23. **Pre- bid conference:**

Pre-bid conference will be held with the eligible bidders at **11:00 AM on 01/05/2025** to clear the doubts of intending bidders, if any. Pre-bid meeting shall be held in **the Office of**

Chief Engineer, CVPZ-2, Sunehari Bagh, New Delhi as well as online link shall be shared with prospective bidders upon specific request to the mail of Executive Engineer, CVPD- 6, CPWD. **Bidders shall send their queries before pre-bid meeting latest by 5:00 PM on 30/04/2025** by email to the Executive Engineer, CVPD-6, CPWD (Email: - delee-cvpd6@gov.in). In physical presence, not more than 2 representatives from each bidder shall be allowed. Vendors shall not be allowed to participate in Pre-Bid meeting.

SECTION -I

BRIEF PARTICULARS OF THE WORK

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

N.I.T. No.	01/CE/CVPZ(C)-2/2025-26
NAME OF WORK and location	Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I
ESTIMATED COST PUT TO TENDER	Rs. 3,38,01,24,894/-
TIME ALLOWED FOR CONSTRUCTION	24 (Twenty-four) Months

2. The work site is existing North Building, New Delhi.
3. The proposed work is of very prestigious nature and is required to be completed strictly within the prescribed time limit with the highest standards of quality and workmanship.
4. The drawings uploaded with the tender are for reference purpose only and are intended to give preliminary understanding of the project and are liable to modifications/ alterations during issue of GFC drawings.
5. The particulars of the work given below are provisional. They are liable to change and must be considered only as advance information to assist the bidder.

6. **Scope of work:**

The scope of the work is as follows: -

A) Enabling Works and Protection Works:

i. Preparatory & Supporting work for execution

The enabling works for this project incorporates modern techniques and materials as well as traditional methods to ensure the site is prepared effectively for conservation and retrofitting. Additionally, advanced technologies such as Ground Penetrating Radar (GPR) to be employed to survey the site before excavation, ensuring no damage occurs to any underground architectural features.

At the same time, several traditional methods and careful practices need to be maintained throughout the project to safeguard the building's historical significance.

ii. Surface Cleaning & Treatment of Walls & Floors:

The restoration work on the building involves careful cleaning and treatment of the original materials to ensure they are preserved for future use. Sandstone surfaces, a key element of the building, will be cleaned using approved chemical solutions to remove dirt, algae, grease, and other contaminants.

iii. Dismantling work.

The project involves the careful dismantling and demolition of civil & Electrical materials to prepare the building for restoration while preserving its structural integrity. Special care shall be taken to protect existing finishes while removing items like faucets, valves, and related fixtures.

Original materials such as steel works, including jali/mash, grills, RS joists, channels, angles, tees, flats, and built-up sections, shall be dismantled and credited as directed by the Engineer-in-Charge.

B) Conservation Works

i. Waterproofing

The project involves significant work on existing materials as part of the waterproofing process, focusing on restoring and reinforcing the original construction elements. Polyurea For areas of concrete or masonry with cracks or honeycomb sections, approved grout shall be injected to fill these gaps, ensuring no water infiltration. Additionally, cement slurry with acrylic polymer will be applied to modify cement for concrete or RCC work, further enhancing the waterproofing qualities.

ii. Structural Repair

The work involves repairing and reinforcing the original materials of the structure, ensuring that existing elements are properly restored. Unsound concrete from structural elements will be chipped away using either manual or power-driven tools, and exposed reinforcement bars will be cleaned and treated to remove any rust. Corrosion inhibitors will be applied to the exposed reinforcement to prevent future deterioration. The structural beams will be strengthened using carbon laminates or filaments, which involves careful surface preparation, bonding, and lamination processes to ensure the structural integrity of the original beams is preserved. Epoxy bonding agents will be used to bond old concrete to new concrete, ensuring a seamless integration of repaired sections.

iii. Masonry

The project involves the restoration and repair of the original brick masonry, ensuring that damaged sections are consolidated and reassembled to preserve the building's historical integrity.

iv. Flooring

The original materials used and repaired in the flooring work primarily involve the restoration of sandstone and marble, key historical elements of the building's structure.

v. Stone Works

The original materials used and repaired primarily involve stone elements that contribute to the building's historic aesthetic. Stone blocks, door frames, architraves, brackets, columns, and jalis will be carefully restored using lime mortar ensuring a strong bond while preserving the original design. In cases where damage has occurred, matching stone materials will be used to replace the damaged sections, ensuring consistency with the building's historical appearance.

C) Sanitary Works

i. Drainage

The original materials used and repaired include existing underground drainage systems, which may consist of brick masonry manholes and older concrete pipes that are subject to deterioration over time.

ii. Water supply

The original materials used and repaired include the existing piping systems that may consist of older steel, cast iron, or HDPE pipes. These pipes will be assessed for wear and tear, with any damaged or deteriorated sections replaced or repaired to ensure the system's continued functionality.

iii. Sanitary installations

The original materials used and repaired include the existing wall-mounted water closets, cisterns, wash basins, and floor drains, etc. which may require repairs or refinishing to restore their function and appearance.

iv. Special Works

The transformation of the North Block into a cultural museum involves careful planning of Mechanical, Electrical, and Plumbing (MEP) services to balance modern functionality with the preservation of its Grade-I heritage status. Key challenges include obtaining approvals from local authorities, adhering to regulatory requirements, integrating services without compromising the building's historic value, and overcoming structural constraints for retrofitting.

To address these challenges, the planning prioritizes minimizing structural alterations, preserving architectural features, and ensuring fire and life safety compliance. The goal is to create a functional and safe museum while maintaining the

building's historical integrity, setting a standard for adaptive reuse of heritage structures. The modernization of the North Block involves:

- **Dismantling Old Systems:** Outdated MEP services will be removed, but key components like bus trunking and façade lighting will be retained for functionality and preservation.
- **New Service Building:** A new service building on the north side will house MEP systems, with the sewage plant on the east side.
- **Repurposing Existing Infrastructure:** Existing substations will be repurposed, the pump room demolished, and DG sets replaced. A service trench will streamline utilities.

SECTION -II

Details for Technical Qualification of Bidders

1. General information & instructions for bidders: -

- 1.1 Letter of transmittal and forms for deciding eligibility are given in Section III.
- 1.2 All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the bidder, it should be stated as "not applicable". The bidders are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the bid being summarily disqualified. Bids made by telegram or e-mailed or telex and those received late will not be entertained.
- 1.3 References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the bidder should be signed by an officer not below the rank of Executive Engineer or equivalent.
- 1.4 The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the Employer.

2. Definitions:

- 2.1 In this document the following words and expressions have the meaning hereby assigned to them.
- 2.2 Employer: Means the President of India, acting through the Executive Engineer, Central Vista Project Division-6, CPWD, New Delhi or successor thereof.
- 2.3 Bidder: Means the individual, proprietary firm, firm in partnership, limited company private or public or corporation.
- 2.4 "Year" means "Financial Year" unless stated otherwise.

3. Method of application:

- 3.1 If the bidder is an individual, the application shall be signed by him above his full type written name and current address.

- 3.2 If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.
- 3.3 If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.
- 3.4 If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

4. Final decision-making authority.

The employer reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the bidders.

5. Particulars provisional

The particulars of the work given in Section I are provisional. They are liable to change and must be considered only as advance information to assist the bidder.

6. Site visit

The bidder is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

7. Initial Criteria for eligibility for bidders:

- 7.1 Past experience:** The bidder should have satisfactorily completed the works as mentioned below during the last seven years ending up to 31.03.2025.

- (a) Three similar works each of value not less than Rs. 135.2 crore
or
Two similar works each of value not less than Rs. 202.8 crore
or
One similar work of value not less than Rs. 270.4 crore

Similar work shall mean works of "Building work including internal water supply, sanitary installations, internal electric installation," works executed under one agreement in India.

Also;

- 1) At least one similar work or any other work shall have minimum one basement work.
- 2) At least one similar work or any other work shall have HVAC.
- 3) At least one similar work or any other work shall have firefighting.
- 4) At least one similar work or any other work shall have substation.

Note:

1. Basement, HVAC, firefighting and substation works if executed under separate contracts shall be considered for the purpose of assessing the technical competence only without adding its monetary value for determining the eligibility criteria
2. Only completed similar works shall be considered. Also, the components of the work other than similar work definition shall not be considered while working out the value of similar works.

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

- 7.2 Average Annual Financial Turnover:** The bidder should have had Average Annual Financial Turnover of Rs. 169 Crore on construction works during the last three consecutive financial years ending 31st March 2024 or 2025 duly certified and audited by the Chartered Accountant (Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). Year in which no turnover is shown would also be considered for working out the average. The value of annual turnover figures shall be brought to the current value by enhancing the actual turnover figures at simple rate of 7% per annum.
- 7.3 Profit & Loss:** The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets (standalone financial statement), ending 31st March 2024 or 2025, duly certified and audited by the Chartered Accountant.
- 7.4 Banker's certificate from a commercial bank or Net Worth Certificate:** Bidder should have a Banker's Certificate from a commercial Bank, of the amount equal to Rs. 135.2 crores certified by banker or Net Worth certificate of Rs. 33.8 crores issued by certified Chartered accountant with Unique Document Identification Number (UDIN).
- 7.5** The bidder should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The bidder shall have to submit a list of these employees stating clearly how these would be involved in this work within 15 days of award of work.
- 7.6 Bidding capacity:** The bidding capacity of the bidder should be equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

$$\text{Bidding capacity} = [A \times N \times 1.5] - B$$

Where,

A = Maximum turnover in construction works executed in any one year during the last Seven years ending on 31.03.2024 or 31.03.2025, taking into account the completed as well as works in progress. The value of construction works shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

N = Number of years prescribed for completion of work for which bids has been invited.

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

Note:

- i) The bidder should submit bidding capacity as per Form C-3.
- ii) Bidding capacity is applicable for all the bidders including CPWD enlisted contractors.
- iii) The bidder shall submit the calculation sheet of bidding capacity as per above formula along with Bid documents and submit an undertaking that all works in progress or awarded to him have been included in the list submitted by him in the Form C-1 and no ongoing work has been left out. In case, it is found that bidder has concealed any information, suitable legal as well as criminal action shall be taken against bidder for concealing such information.
- iv) Bidding capacity formula, for CPWD contractors who are enlisted based on rule 6.1.7 of Enlistment Rules -2024 i.e., government retired engineer/architect for three years from the date of issue of enlistment order is as follows:

$$\text{Bidding Capacity} = \{[A \times N \times 1.5] - B\}$$

Where,

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

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and on-going works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula used for other entities shall be applicable to it for calculation of bidding capacity.

Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.

- v) Bidding capacity, for CPWD contractors who are enlisted based on rules 9.6.3 & 9.6.4 of Enlistment Rules-2024 i.e. new entity based on previously enlisted entity for three years from date of issue of enlistment order, is as follows:

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners/directions in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

- vi) Bidding Capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules -2024 shall be as follows:

$= \{[A' \times N \times 1.5] - B\}$ Where,

A' = Proportionate share of newly enlisted director/partner in originally enlisted company/firm multiplied by the factor A, as given below.

Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

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

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Enlisted entities based on rules 6.1.7, 9.6.3 or 9.6.4 of enlistment rules 2024 can submit MoU from agency having requisite experience for structural system technology if the enlisted entity does not have required experience.

- 7.7 Experience of ongoing building works:** The bidder should have at least one ongoing building work* of contract value not less than Rs. 135.2 crores. Only ongoing work secured in the last three years ending last day of previous month of date of call of bids shall be considered. The value of ongoing work(s) shall be brought to current costing level by enhancing the tendered value of work at simple rate of 7% per annum; calculated from the date of start of work to previous day of last day of submission of tenders.

- Building Work need not be the similar work as defined above at clause 7.1

- 7.8 Average Monthly Turnover:** The bidder should have achieved following average monthly financial turnover/ progress in any single construction work consisting not less than Rs. 135.2 cr (not necessarily similar work), completed during the last 7 (seven) years ending 31.03.2025:-

- a. Two works with Rs. 8.4 cr per month

or

b. One work with Rs. 11.2 cr per month.

The value of average monthly financial progress of bidder shall be worked out on the basis of completion cost of work divided by actual duration of completion of work. The value of average monthly financial progress shall be brought to current costing level by enhancing the actual value of monthly turnover of single work at a simple interest of 7% per annum calculated from the date of completion of the work to previous day of last day of submission of tenders.

8. Evaluation Criteria for bids:

8.1 The detailed submitted by the bidders will be evaluated in the following manner:

8.1.1 The initial criteria prescribed in para 7.0 above in respect of experience of eligible similar works completed, experience of ongoing works, loss, Banker's certificate/Net worth certificate, average annual financial turnover, average monthly turnover and bidding capacity etc. will first be scrutinized and the bidder's eligibility for the work be determined.

8.1.2 The bidders qualifying the initial criteria for eligibility as set out in para 7.0 above will be further evaluated for following criteria by scoring method on the basis of details furnished by them:

S. No.	Criteria	Maximum marks
a.	Financial strength (Form 'A', 'A1' & 'B/B1')	20
b.	Experience in eligible similar nature of work during last seven years (Form 'C')	20
c.	Performance on eligible similar works (Form 'C') - Time over run	20
d.	Performance on similar works and ongoing work (Form 'D1')- Quality	40
	Total	100 marks

Note: Evaluation of the performance of contractors for eligibility shall be done by NIT approving authority or a Committee constituted by him. Any one or more of similar works executed by the bidders as detailed in Form-C and any one of the ongoing works, may be got inspected by a committee which may consist of client or any other authority as decided by NIT approving authority. The marks for the quality shall be given based on this inspection, if inspection is carried out.

8.1.3 Criteria for Evaluation of the Performance of bidders for Pre- Eligibility

S. No.	Attributes	Evaluation					
(a)	Financial Strength (20 marks)						
	(i) Average annual turnover- 8 marks	(i) 60 % marks for minimum eligibility criteria					In between (i) & (ii) above- (on pro-rata basis)
	(ii) Average monthly Turnover- 8 marks	(ii) 100 % marks for twice the minimum eligibility criteria or more					
	(iii) Banker's certificate/ Net worth - 4 marks						
(b)	Experience in completion of similar works (20 marks)	(i) 60 % marks for minimum eligibility criteria (ii) 100 % marks for twice the minimum eligibility criteria or more (iii) In between (i) & (ii)- on pro-rata basis					
(c)	Performance on eligible similar works- Time over run (20 marks)						
	Parameter calculation for points	Score				Max. Marks	
	If TOR =	1.00	2.00	3.00	>3.50	20	
	(i) without levy of compensation	20	15	10	10		
	(ii) with levy of compensation	20	5	0	-5		
	(iii) Levy of compensation not decided	20	10	0	0		
<p>TOR = AT/ ST, where AT= Actual Time; ST= Stipulated time in the agreement + Justified period extension of time for extra work only calculated proportionately. (extra time to be calculated on pro-rata basis only as cost of extra work X stipulated period/ tendered cost).</p> <p>Note: Marks for value in between the stages indicated above is to be determined by straight line variation basis.</p>							

S. No.	Attributes	Evaluation
(d)	Performance of works (Quality) to be assigned after inspection by committee of officers/ experts nominated by NIT approving authority as per Form D-1 (40 marks)	

	(i) Completed similar works- (Max 25 marks)	(ii) Ongoing Works (Similar/Non-similar) (Max 15 marks)	Maximum marks (40 Marks)

To become eligible for short listing the bidder must secure at least sixty percent (60%) marks in each (Section a, b, c & d) and seventy five percent (75%) marks in aggregate.

The department, however, reserves the right to restrict the list of such qualified contractors to any number deemed suitable by it.

Note: The average value of performance of works for time over run and quality shall be taken on the basis evaluated works.

- 9. Financial information:** Bidder should furnish the Annual financial statement for the last five years in Form-A, Average monthly financial turnover/progress in Form-A1 and Banker's Certificate in (Form "B") or Net worth Certificate in Form- B1.

10. Experience of similar works

- 10.1 Bidder should furnish the list of all similar nature of works successfully completed during the last seven years in (Form "C") and ongoing works as well (Form C-1).
- 10.2 Affidavit as per Form-G

11. Organization information

Bidder is required to submit the information in respect of his organization in Forms "E"

12. Letter of transmittal

The bidder should submit the Letter of Transmittal attached with the document.

13. Opening of Price bid

After evaluation of applications, a list of qualified and technically acceptable bidders will be prepared. Thereafter the financial bids of only the qualified and technically acceptable bidders shall be opened at the notified time, date and place in the presence of the qualified bidders or their representatives.

14. Award Criteria

- 14.1 The employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:
- a. Amend the scope of work and value of contract.
 - b. Reject any or all the applications without assigning any reason.
- 14.2 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

SECTION-III

INFORMATION FORMS REGARDING ELIGIBILITY

Letter of Transmittal

From:

To

The Executive Engineer
Central Vista Project Division-6,
CPWD, New Delhi – 110002

Subject: - Submission of bids for the work of “**Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I**”.

Ref: **NIT No.:** 01/CE/CVPZ(C)-2/2025-26

Sir,

Having examined the details given in the bid document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statements made and information supplied in this tender document and accompanying statements are true and correct.
2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/we submit the requisite certified Banker's certificate and authorize the Executive Engineer, CVPD-6, CPWD to approach the Bank issuing the Banker's certificate to confirm the correctness thereof. I/we also authorize Executive Engineer, CVPD-6, CPWD to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:

Sr. No.	Name of work	Certificate from

5. I/We hereby submit undertaking on structural stability and soundness as per prescribed format Form 'F'

Certificate: It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I / We shall be liable to be debarred, disqualified, cancellation of enlistment in case any information furnished by me / us is found to be incorrect.

Enclosures:

Seal of bidder
Signature(s) of Bidder(s).
Date of submission:

Receipt of Deposition of Original EMD**(Receipt No...../date...../...../2025)**

Name of work:	
1. NIT No.	: 01/CE/CVPZ(C)-2/2025-26
2. Estimated cost	: Rs. 3,38,01,24,894/-
3. Amount of Earnest Money Deposit	: Rs. 3,48,01,249/-
4. EMD should be in favour of	: Executive Engineer (C), Central Vista Project Division (C)-5, CPWD, New Delhi
5. Last date of submission of bid	: At 03:00PM on 13.05.2025
1. Name of Contractor#	:
2. Form of EMD#	:
3. Amount of Earnest Money Deposit#	:
4. Date of submission of EMD#	:
<p style="text-align: right;">Signature, Name, Designation and telephone No. of EMD receiving officer (EE/DDH) along with Office stamp</p> <p>(#To be filled by EMD receiving officer EE/DDH)</p>	
<p>Note:</p> <p>The authority receiving original EMD shall also intimate about deposition of EMD by the bidder to EE, CVPD-6, CPWD, New Delhi by email to or telephonically on Mobile No.: 9205975576</p> <p>The original EMD receiving authority shall release the EMD to unsuccessful bidders after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier, after verification from the e-tendering portal website (https:// etender.cpwd.gov.in>closed Tender>all) that the particular contractor is not L-1 tenderer and work is awarded</p>	

FORM-A**FINANCIAL INFORMATION**

1. Financial Analysis - Details to be furnished duly supported by figures and balance sheet/profit and loss account for the last five years (2019-20 to 2023-24 or 2020-21 to 2024-25) duly certified by the Chartered Accountant as submitted by the applicant to the Income - Tax Department. (Copies to be attached)

Fig in lakhs Rs.

S.No.	Particulars	Financial Year					
		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
1	Gross Annual Turnover on Construction Works						
2	Profit/loss after Taxes (stand-alone financial statement)						
3	Profit/loss after Taxes (Consolidated)						

The bidder should give information strictly in above format.

Financial arrangements for carrying out the proposed work.

Signature of Chartered Accountant with Seal

Signature(S) Of Bidder(S)

FORM-'A1'
Format for Average Monthly Turnover

For works costing not less than Rs. 135.2 Crore completed in last 7(seven) years ending
31.03.2025

S. No.	Name of work/project and Location	Owner or sponsoring Organization	Tendered Cost of work (in Cr.)	Date of commencement as per contract	Stipulated date of completion	Actual Date of completion	Time taken (in months)	Completion cost (Excluding any award/amount through litigation / arbitration)	Average Monthly turnover	Average monthly turnover enhanced at a simple interest of 7% per annum calculated from the date of completion of the work to previous day of last day of submission of tenders	Name ,address, email & telephone of officer to whom reference may be made
A	B	C	D	E	F	G	H	I	J= (I/H)	K	L

Signature of Bidder(s)

(With stamp)

Note: Bidder shall submit self-certified copy of supporting documents of above stated works which can establish the above-mentioned facts and figures, such as:

1. Final Bill or
2. Completion certificate from the owner organization Or
3. Details filled in above format by manager / officer not below the rank of Executive Engineer from owner / sponsoring organization.

FORM-‘B’**BANKER’S CERTIFICATE FROM A COMMERCIAL BANK**

This is to certify that to the best of our knowledge and information that
 M/s./Sh.....having marginally noted address,.....
as a Customer of our bank are/ is respectable and can be treated as good for
 any engagement upto a limit of Rs.
 (Rupees.....)

This certificate is issued without any guarantee or responsibility on the bank or any
 of the officers.

(Signature)For the Bank

NOTE:

1. Banker’s Certificates should be on letter head of the Bank, addressed to tendering authority.
2. In case of Partnership firm, certificate should include names of all partners as recorded with the Bank

Form-‘B1’**FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT**

"It is to certify that as per the audited balance sheet and profit & loss account during the financial year....., the Net Worth of M/s (Name & Registered Address of individual/firm/ company), as on (the relevant date) is Rs..... after considering all liabilities. It is further certified that the Net Worth of the company has not eroded by more than 30 % in the last three years ending on 31-03-2025.

Unique Document Identification Number (UDIN)

Signature of Chartered Accountant

Name of Chartered Accountant

Membership No. of ICAI

Date and Stamp

FORM- 'C'**DETAILS OF SIMILAR WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING
PREVIOUS DAY OF LAST DAY OF SUBMISSION OF TENDERS**

1	Name of work/project and Location	
2	Owner or sponsoring Organization	
3	Cost of work (in Cr.)	
4	Date of commencement as per contract	
5	Stipulated date of completion	
6	Actual date of completion	
7	Litigation/arbitration cases pending /in progress with details*	
8	Name, address, email & telephone no. of officer to whom reference may be made	
9	Whether the work was done on back-to-back basis -Yes/ No	

*Indicate gross Amount Claimed and Amount Awarded by the Arbitrator.

SIGNATURE (S) OF BIDDER(S)

WITH STAMP

Note: The contractor should give list of all similar works executed

FORM-'C1'
DETAILS OF PROJECTS UNDER EXECUTION

S.No.	Name of work/project and Location	Owner or sponsoring Organization	Cost of work (in Cr.)	Date of commencement as per contract	Stipulated date of completion	Up to Date % Financial Progress	Value of Balance Commitment to Complete work till Period (24 months) for which Bid Invited (Crore)	Slow Progress if any and reason thereof	Name, address, email & telephone no of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10	11

It is to undertake that above is the total list of works under progress with us and information furnished is true and nothing has been hidden. Further that, if any violation by hiding information or submission of incorrect information, comes to the notice of Department, then I/we shall be debarred for bidding in CPWD in future forever.

Note:

- i. In Column No 7 above, only the percentage of financial progress shall be mentioned. In substantiation of financial progress, the bidder shall submit the statement of up-to-date payment made against each work, obtained from the Executive Engineer/Project Manager in charge of the work or by the chartered accountant.
- ii. Total of Column No 8 shall be treated as Value "B" for Calculation of the Bidding Capacity as per Formula given in the Eligibility Conditions of NIT Document.

SIGNATURE(S) OF BIDDER(S)
(WITH STAMP)

FORM - 'C2'
DETAILS OF ON-GOING BUILDING WORK OF VALUE NOT LESS THAN
Rs. 135.2 Crore

(SECURED IN LAST THREE YEARS upto 31.03.2025.

S. No.	Name of work/project and Location	Owner or sponsoring Organization	Cost of work (in Cr.)	Date of commencement as per contract	Stipulated date of completion	Up to Date % Financial Progress	Slow Progress if any and reason thereof	Name, address, email & telephone no of officer to whom reference may be made	Whether the work was done on back to back basis (Yes/No)	Remarks
1	2	3	4	5	6	7	9	10	11	12

It is to undertake that above work(s) is/are under progress with us and information furnished is true and nothing has been hidden. Further that, if any violation by hiding information or submission of incorrect information, comes to the notice of Department, then I/we shall be debarred for bidding in CPWD in future forever.

Note: The bidder shall submit the statement of up-to-date payment made against above work(s), obtained from the Executive Engineer /Project Manager in charge of the work.

SIGNATURE(S) OF BIDDER(S)

(WITH STAMP)

Form-‘C3’
FORM FOR BIDDER’S BIDDING CAPACITY

Name of the Bidder:-

S. No.	Name of work/project and Location	Owner or sponsoring Organization	Contract value of work (R sin Cr.)	Date of commencement as per contract	Stipulated date of completion	Up to date percentage progress of work	Remaining work in percentage (100 - col.7)*	Existing commitments Col.4 x(Col.8 /100)	Name, address, email & telephone no. of officer to whom	Remarks
1	2	3	4	5	6	7	8	9	10	11

Total of Column (9) (B)		
Maximum turnover in construction works executed in any one year during the last Seven years ending on 31.03.2024 or 31.03.2025		Rs.
Enhanced value of Maximum (A) turnover as on 31.03.2024 or 31.03.2025 (enhanced by simple rate @7% per annum)		Rs.
No. of years (N)		
Bidding capacity	{[AxNx1.5]-B}	

***Note:-**

It is certified that all works in progress or awarded to me/us have been included in the list submitted by me/us in the Form C-1 and no ongoing work has been left out. Further that, if any violation by hiding information or submission of incorrect information, comes to the notice of Department, then I/we shall be debarred for bidding in CPWD in future forever.

Seal & Signature of Bidder

*(Bidders shall upload all supporting documents for arriving at Bidding Capacity)

Form 'D-1'**Assessment of Quality for Completed as well as Ongoing works**

Name of Work:

Date of Inspection:

Date of submission of report:

A.	General Observation & Operational Aspects	Yes/ No
1	Availability of approval from local bodies in case of Construction of Private Buildings	
2	Availability of approved Structural drawings	
3	Observation on seepage/ leakage in the building	
4	Whether Line & level Maintained	
5	In case of basement, observation on seepage, if any	
6	Any Structural defects / distress observed. If yes give details	
7	Whether safety measures adopted at site as per CPWD Safety Code and or govt. guidelines are adequate or not	
8	Whether the Welfare facilities provided to labour as per Clause 19 H of GCC for CPWD Works/and or govt. guidelines are adequate or not	
9	Whether AHU getting automatically switched off and fire damps closed in case of fire signal?	
10	Whether thimbles used for termination of wires in DBs, EBDs & Panels?	
B.	Quality of Work	Marks Assessed
1	Quality of plaster/ finishing	
2	Quality of RCC / CC Work	
3	Quality of Flooring	
4	Quality of Wood Work	
5	Quality of Steel Work / Aluminum Work	
6	Quality of Plumbing and Sanitary Installation	
7	Quality of Workmanship	
8	Quality of Waterproofing	

9	If cladding done, observation on efficiency/ quality of cladding / Brick work	
10	Quality of internal electrification work	
11	Quality of DBs, EBDs & Panels	
12	Quality of E&M equipment, panels & feeder pillar	
13	Quality of fire alarm system/ firefighting system	
14	Quality of Air Conditioning work	
15	Quality of Sub-station based on complete live diagram, capacitor panel, power factor, insulating Mat, cleanliness, cable termination, earthing pits, earthing of transformer / DG sets	
16	Any other aspect (to be elaborated)	
	Total Marks	
	Average marks out of 100	

(Average Marks to be awarded out of 100 Marks based on average of marks assessed on each attribute mentioned at B above).

Note:

1. All the above parameters may be considered for assessing the overall quality of work executed by the contractor. Each attribute shall be assessed on maximum marks of 10 under B above.
2. In case, any attribute is not applicable, the same may not be included in assessment and mentioned are not applicable (N/A)
3. The works as assessed above shall be converted on a scale of 25/15 marks for completed/ongoing works respectively.
4. In case of eligible completed works being more than one, the average of marks assigned for eligible completed works shall be considered for marking purpose. Only one ongoing work to be assessed.

FORM- 'E'

STRUCTURE AND ORGANISATION

1. Name and address of the bidder
2. Telephone No./Telex No./Fax No./Email
3. Legal status of the bidder (Scan & upload copies of original document defining the legal status)
 - a. An individual
 - b. A proprietary Firm
 - c. A firm in Partnership
 - d. A limited company or Corporation
4. Particulars of registration with various Government bodies (Scan and upload attested photocopy)

Organization/Place of registration	Registration No.
a.	
b.	
c.	

5. Names and titles of Directors and Officers with designation to be concerned with this work
6. Designation of individuals authorized to act for the organization.
7. Has the bidder, or any constituent partner in case of partnership firm Limited Company/Joint Venture ever been convicted by the court of law? If so, give details.
8. In which field of Civil Engineering construction the bidder has specialization and interest?
9. Any other information considered necessary but not included above.

SIGNATURE (S) OF BIDDER(S) WITH STAMP

Form-F**Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects.**

I/we undertake and confirm that any building/infrastructure constructed by our firm/partnership firm/ company has not suffered any failure, making it unfit for intended use, either due to structural design and defects or due to use of sub-standard materials or execution of sub-standard work, poor workmanship or any other reason during the last 25 (twenty-five) years. I/we, further, undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall be free to terminate the bid/agreement and to forfeit the entire amount of earnest money deposit, performance guarantee and security deposits. I/we, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD. The decision of Engineer-in-Charge or any higher authority shall be final and binding.

Signature of notary with seal

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

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

FORM- 'G'**AFFIDAVIT**

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

Signature of bidder(s) with stamp

Form-H

**Certificate to be furnished by Agency and their Specialized agencies under
Rule 144 (xi), in the General Financial Rules (GFRs),2017**

(Added vide OM F. note 6/18/2019- PPD dated. 23rd July 2020)

CERTIFICATE

“I have read the clauses regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries, I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub- contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all the requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]”

[Note: similar certificate may also be obtained from the approved specialized agency for various works by Main agency after award of work]

SIGNATURE (S) OF BIDDER(S) WITH STAMP

Form-I**UNDERTAKING FOR GST REGISTRATION**

"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".

Signature of Bidder(s) with stamp

Note: The undertaking should be given on the letterhead of the bid.

INTEGRITY PACT

This Integrity Pact is made at on this day of.....2025

BETWEEN

The President of India represented by the Engineer-in-Charge (hereinafter referred to as the Principal, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assignees)

AND

.....

(Name and address of the bidder)

(Hereinafter referred to as the Bidder/Contractor and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assignees)

Preamble

WHEREAS the Principal has floated the tender (NIT No.,) (hereinafter referred to as the Tender) and intends to award, under laid down organizational procedure, contract for

..... (Name of work)

hereinafter referred to as the Contract.

AND WHEREAS the Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as Integrity Pact), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned hereunder.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Integrity Pact witnesses as under:

Articles

Article 1: Commitment of the Principal

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - (a) No employee of the Principal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - (b) The Principal will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

relation to the Tender process or the Contract execution.

- (c) The Principal shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

- (1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.
- (2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:
 - (a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
 - (b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
 - (c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/ Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - (d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
 - (e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
- (3) Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the courts

while representing the matter to IEMs and shall wait for their decision in the matter.

The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

- (4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice, wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.
- (5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use coercive practices (which shall include the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property) to influence their participation in the tendering process.

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal under law or the contract or its established policies and laid down procedures, the Principal shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/Contractor accepts and undertakes to respect and uphold the Principal absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal. Such exclusion may be forever or for a limited period as decided by the Principal.
2. Forfeiture of Earnest Money Deposit/Performance Guarantee/Security Deposit: If the Principal has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal apart from exercising any legal rights that may have accrued to the Principal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit/Performance Guarantee and Security Deposit of the Bidder/Contractor.
3. Criminal Liability: If the Principal obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of PC Act, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1. The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal.

3. If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement by any of its Subcontractors/sub-vendors.
2. The Principal will enter into pacts on identical terms as this one with all Bidders and Contractors.
3. The Principal will disqualify Bidders who do not submit the duly signed Integrity Pact between the Principal and the Bidder along with the Tender or violate its provisions at any stage of the Tender process.

Article 6- Duration of the Pact

This Integrity Pact begins when both the parties have legally signed it. It expires for the Contractor 12 months after the completion of work under the contract or expiry of defect liability period or last payment made under the contract, whichever is later and for all other bidders, 6 months after the Contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this Integrity Pact as specified above, unless it is discharged/determined by the ADG/SDG, CPWD concerned.

Article 7- Other Provisions

1. This Integrity Pact is subject to Indian Law, place of performance and jurisdiction is the Head quarters of the Division of the Principal, who has floated the tender.
2. Changes and supplements as well as termination notice need to be made in writing.
3. If the Contractor is a partnership or a consortium, this Integrity Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Integrity Pact must be signed by a representative duly authorized by board resolution.
4. Should one or several provisions of this Integrity Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
5. Issues like Warranty/Guarantee etc. shall be outside the purview of IEMs.
6. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Pact, any action taken by the Principal in accordance with this Integrity Pact or interpretation thereof shall not be subject to arbitration.
7. In view of the nature of integrity pact, the Integrity Pact is irrevocable and shall remain valid even if the main tender/contract is terminated till the currency of the integrity pact.
8. If any complaint regarding violation of I P is received directly by the Principal in respect of the contract, the same shall be referred to the IEM for comments/recommendations.

Article 8 -Independent External Monitor (IEM)

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact
- Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

after approval by Central Vigilance Commission (Names and address of IEMs are as mentioned in Schedule-F). The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders / Contractors as confidential.
- (3) The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor, The Contractor will also grant the IEM, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to sub- contractors.
- (4) The IEM is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/ Sub-contractor(s) with confidentiality. The IEM has also signed 'Non- Disclosure of Confidential Information' and 'Absence of Conflict of Interest'. In case if any conflict of interest arising at a later date, the IEM shall inform the Engineer-in-Charge and recuse himself / herself from that case.
- (5) As soon as the IEM notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action
- (6) The IEM will submit a written report to the SDG/ADG concerned within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- (7) If the IEM has reported to the ADG/SDG concerned, a substantiated suspicion of an offence under relevant IPC/PC Act, and the ADG/SDG concerned has, within a reasonable time, not taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the IEM may also transmit this information directly to the Central Vigilance Commissioner.
- (8) The Principal will provide to the IEM sufficient information about all meetings among the parties related to the project provided such meetings could have impact on contractual relations between the Principal and the contractor. The parties will offer to the IEM the option to participate in such meetings
- (9) The word IEM or monitor would include both singular and plural

Article 9- Legal and Prior Rights

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard to any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

(For and on behalf of Principal)

(For and on behalf of Bidder/Contractor)

WITNESSES:

1

(signature, name and address)

2

(signature, name and address)

Place:

Dated:

Note: To be signed by the Bidder and the Engineer-in-Charge.

On non-judicial stamp paper of minimum Rs. 100

(Guarantee offered by Bank to CPWD in connection with the execution of contracts)
Form of Bank Guarantee for Earnest Money Deposit / Performance
Guarantee / Security Deposit / Mobilization Advance/ Secured Advance/In-lieu of Milestone
Withheld

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

OR**

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

2. We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs (Rupees only) on demand by the Government within 10 days of the demand.
3. We, (indicate the name of the Bank), do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only)
4. We, (indicate the name of the Bank), further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the contractor shall have no claim against us for making such payment.
5. We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said

Contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. We, (indicate the name of the Bank), further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (indicate the name of the Bank), undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged. with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date

Witnesses:

1. Signature

Authorized signatory

Name and address

Name

Designation

Staff code no.

2. Signature

Bank seal

Name and address

* Date to be worked out on the basis of validity period of 180 days.

** In Paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee / security deposit / mobilization advance, as the case may be.

NIT FORM CPWD-7
GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

State: Delhi

Zone: CVPZ(C)-2

Branch: B & R

Division: CVPD-6

Percentage Rate Tender & Contract for Works

Tender for the work of: **Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I**

- (i) To be uploaded/submitted online by 03:00 PM on 13.05.2025 to/upload through website at <https://etender.cpwd.gov.in/> or www.cpwd.gov.in .
- (ii) Technical bids to be opened online, in presence of tenderers who may be present, at 03:30 PM on 13.05.2025 in the office of Executive Engineer, Central Vista Project Division-6, CPWD, New Delhi.

TENDER

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

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

I/We agree to keep the tender open for Ninety (75) Days from the date of opening of Financial Bid and not to make any modification in its terms and conditions.

A sum of Rs. 3,48,01,249/- is hereby forwarded in Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee/e-bank guarantee (for balance amount as prescribed) from any of the Commercial Banks against as earnest money.

If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

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

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

Dated

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

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

(Rupees)

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

(a).....

(b).....

(c)

For & on behalf of the President of India.

Signatures.....

Dated:

(*) Designation

(*) To be filled by The Executive Engineer, CVPD-6 or his successor.

PROFORMA OF SCHEDULES

(Schedules A to F for Civil works)

SCHEDULE 'A'

Sl. No.	Schedule of quantities	Page No.
1	Civil Works	
2	E &M Works	

SCHEDULE 'D'

Extra schedule for specific requirements/documents for the work, if any. - Not applicable

SCHEDULE 'E'

Reference to General Conditions of contract – General Conditions of Contract for CPWD 2023 for Construction Works, amended/ corrected as per CON Circular up to last date of submission of bid.

Name of the Work: “Comprehensive conservation, retrofitting and setting up of service building in North Block, New Delhi, Phase-I”

(i) Estimated cost of the work:	Total Estimated to cost Rs. 3,38,01,24,894/-
(ii) Earnest money	Rs. 3,48,01,249/- (To be returned after receiving performance guarantee)
(iii) Performance Guarantee	5% of the tendered value
(iv) Security Deposit	2.5% of tendered value

SCHEDULE 'F'

(GENERAL RULES & DIRECTIONS)

Officer inviting tender	Executive Engineer (Civil), Central Vista Project Division-6, CPWD, Adjacent to 9, Sunehri Bagh Road, New Delhi – 110011
Maximum percentage of quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2 &12,3	See below under clause 12
Price Preference to SC/ST individual contractor	Not applicable

Definitions:

(i)	Engineer-in-Charge For Civil items of work	Executive Engineer (Civil), Central Vista Project Division-6, CPWD, New Delhi - 110011 or his successor thereof
(ii)	For Electrical items of work	Executive Engineer (Elect.), Central Vista Project Elect Division-3, CPWD, New Delhi - 110002 or his successor thereof

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

(iii)	Accepting Authority	Chief Engineer, Central Vista Project Zone(C) -2 or successor thereof
(v)	Percentage on cost of materials and Labour to cover all over heads and profits	15% (7.5% for Profits + 7.5% for Overheads)
(vi)	Standard of schedule of rates	DSR 2023 and Market Rates
(vii)	Department	Central Public Works Department (CPWD)
(viii)	Standard CPWD Contract Form	Standard C.P.W.D. Form 7 – GCC 2023 for Construction amended/ Corrected as per CON Circular issued up to last date of submission of bid.
Clause 1	<p>(i) Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance.</p> <p>(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period as provided in (i) above</p>	<p>15 Days</p> <p>7 Days</p>
Clause 2	Authority for fixing Compensation under	Superintending Engineer, Central Vista Project Circle-3 or successor thereof
Clause 5	Number of days from the date of issue of letter of acceptance for reckoning date of start	22 Days or date of handing over of site whichever is later.

Mile stone(s) as table given below:

Sr. No.	Description of Mile Stone	Time allowed from date of start	Amount to be withheld in case of non-achievement of each physical and financial Mile stone(s)
1.	Finalization of specialized agencies/ manufacturer / vendors for anti-termite and waterproofing as per tender document.	1 month	0.2 % of Civil construction tendered amount.
2.	Approval of stone samples, finalization of all specialized agencies/ manufacturer / vendors other than waterproofing and anti-termite and dismantling of Phase IA	3 months	0.3 % of Civil construction tendered amount.

	(MHA Block)		
3.	Completion of structure for service Block and Completion of dismantling of phase 1B (MoF and DoPT) Or Achieving financial progress 10 % of civil tendered amount	7 months	0.5 % of Civil construction tendered amount
4.	Completion of finishing for service Block, completion of structural strengthening, reconstruction, structural repair works & Completion of Non-Structural Repair Works for Phase 1A (MHA) and Completion of Dismantling works for Phase 1B (MOF and DoPT). Or Achieving Financial progress of 30% of civil tendered amount.	11 months	1.00% of Civil construction tendered amount.
5.	Completion of Finishing works for Phase 1A (MHA Block), Completion of Structural strengthening, reconstruction and structural repair works & Non-Structural Repair works for Phase 1B (MOF, DoPT) Or Achieving financial progress of 60% of civil tendered amount.	15 months	1.00% of Civil construction tendered amount.
6.	Completion of finishing works for Phase 1B, Completion of Sanitary, Plumbing works, drainage & water proofing, Testing, Commissioning and Handover for Phase 1A (MHA Block) Or Achieving financial progress of 80% of civil tendered amount.	19 months	1.00% of Civil construction tendered amount.
7.	Completion of Sanitary, Plumbing works, drainage & waterproofing, Testing, Commissioning and Handover	24 months	1.00% of Civil construction tendered amount.

Civil Works

Note:

1. These milestones define the broad frame work of time schedule and Contractor shall submit detailed program with milestones within 15 days of award of work and get it approved from Engineer-in-Charge and shall maintain the progress of work as per approved program.

2. The amount withheld due to non-achievement of mile stone can be released against the Bank Guarantee Bond of any schedule bank or State Bank of India, of equal value and valid up to the stipulated or extended date of completion of construction work plus 60 days beyond or by the time final action under clause 2 is taken by the competent authority in respect of construction work whichever is later.
3. Withheld amount including the bank guarantee on this account if any, shall be released if and when subsequent milestones are achieved within respective time specified.

Time allowed for execution of work:

Construction Work: 24 Months including rainy seasons from June to Sept every year. The period of rainy seasons will not be considered for hindrance.

Authority to decide:

(i) Extension of time	Engineer-in-Charge of major component of work or success or there of
(ii) Rescheduling of mile stones	Superintending Engineer , Central Vista Project Circle-3, CPWD or successor thereof
(iii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer, Central Vista Project Circle- 3, CPWD or successor thereof

PROFORMA OF SCHEDULES Clause 5: Schedule of Handing over of site:

Portion of Site		Description	Time period for handing over reckoned from date of issue of letter of Acceptance
Handing Over of Site		Site shall be made available in phased manner: - a. Phase 1A i.e the offices of MHA Block shall be handed over as per schedule of date of start b. Phase 1B (MOF and DoPT)	a. 22 Days from date of issue of letter of Intent/acceptance or Date of handing over of site whichever is later (On as is where is basis) b. Shall be made available within 4 months of start of work.
Schedule of issue of drawing			
Part	Portion of Design	Description	Time Period for issue of design from date of start

A	Basic floor plans	Basic plans	Uploaded as tender drawings and GFC drawings shall be issued after letter of award
	Flooring and RC plans	Material mapping, condition assessment, conservation measures mapping, details drawings of floor treatment & repairs	
	Dismantling	Dismantling	
	Preparatory	Floor protection	
B	GFC drawings of doors and windows	Plan, section, elevation, size of accessories, replacements, finishing	To be issued after letter of award
C	GFC wall profile	Plans, sections, repair /replacement, repointing etc.	Within 3 months from the stipulated date of start
	GFC staircase and tower block	Plan, sections, elevation, repair & replacements, carpet fixing etc.	
	GFC Terrace plan	Plans with levels, slopes, khurras etc., water proofing details, drain outlets etc.	
	GFC Terrace service layouts	MEP shafts & stub walls	
	GFC Conservation & strengthening	Walls, rooms, carbon filament, structural steel etc.	
	GFC Toilet block	Layouts, structural drawings, sections etc.	
	GFC Service building	Layouts, structural drawings, sections etc.	
D	Architraves, Columns, Chhatris, Balconies, Domes	Plans, sections, elevations, repairs wherever applicable	
	Lift head-rooms	Plan, sections, roof etc.	
	RCP	Plans and repairs	
Clause 5.1 (iv)	Recovery per day for non-submission of monthly progress report		Rs. 10,000/- per day

Clause 5.4	Recovery per day for delay in submission of revised programme	Rs. 10,000/- per day
Clause 6	Mode of measurement	Computerized Measurement Book (CMB)
Clause 7	Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	Rs. 4 crores per bill for initial 6 months and Rs. 12 crores for balance months or as per decision of Engineer- in-Charge based on the requirement of work
Clause 7A	Whether Clause 7A shall be applicable	Yes
Clause 8	Authority to inspect and issue part/final completion certificate	Chief Engineer, CVPZC-2 or successor thereof
Clause 8A	Authority to decide compensation on account if contractor fails to submit completion plans	Superintending Engineer, Central Vista Project Circle-3 or successor thereof
Clause 10A	List of testing equipment to be provided by the contractor at site lab.	As per requirement of item of schedule and direction of engineer in charge
Clause 10 B (ii)	Whether clause 10-B (ii) shall be applicable.	Yes
Clause 10 C	Component of labour expressed as percentage of value of work due to Statutory Order(s) shall be applicable.	Not Applicable
Clause 10 CC:	Price adjustment for works	Applicable
	(A) Construction period	
	S. No.	Relevant component of Material /Labour for price escalation
	Percentage of total value of work	
	1	Cement component
	2	Labour component
		2
		20

	3	Civil Component of other Construction Materials	61.95
	4	POL (Diesel) component	2
	5	Reinforcement steel bars/TMT bars/CRS/ structural steels (including strands and cables) component	14
	6	Bitumen component	0.05
		Total	100
Clause 11	Specifications to be followed for execution of work:		
For Civil items of work	CPWD Specifications 2019 Vol. 1 and Vol. 2 with up-to-date correction slips issued by authority of Director General, CPWD up to the last date of submission/extended date of submission of bid unless otherwise specified in this document elsewhere.		
For Electrical works	CPWD General Specification for Electrical Works Part I Internal - 2023. CPWD General Specification for Electrical Works Part II External - 2023 CPWD General Specification for Electrical Works Part IV Substation - 2013. CPWD General Specification for Electrical Works Part V Wet riser & sprinkler system - 2020 CPWD General Specification for Electrical Works Part VII DG Sets - 2013. CPWD General Specification for Electrical Works Part VIII Gas Based Fire Extinguishing System - 2013. General Specification for Heating Ventilation & Air-Conditioning-2017. General Specification for Electrical Works (Part III Lifts & Escalators)-2003 General Specification for Part-VI Fire Detection and Alarm System 2018		
(i)	Building information model (BIM) is applicable and BIM professional to be deployed by contractor: Not Applicable		
Clause 12	Authority to decide deviation upto 1.5 times of tendered amount	SDG (PRND), CPWD, New Delhi	

12.2 & 12.3	Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building and other works	100% (One Hundred Percent)
Clause 16	Competent Authority for Deciding reduced rates:	
	For deciding reduced rates for items having value upto 5% of contract value for Civil works	Chief Engineer, CVPZ(C)-2, CPWD, New Delhi or his successor thereof
	For deciding reduced rates for items having value more than 5% of contract value for Civil works	Chief Engineer, CVPZ-2, CPWD, New Delhi or his successor thereof with in-principal approval of SDG (PRND), CPWD, New Delhi or his successor thereof
Clause 18	List of Mandatory Machinery, tools, plants to be deployed by the contractor at site	Refer Appendix -II of tender document or as decided by Engineer-in-charge
Clause 19C	Authority to decide penalty for each default:	Engineer-in-charge
Clause 19D	Authority to decide penalty for each default:	Engineer-in-charge
Clause 19G	Authority to decide penalty for each default:	Engineer-in-charge
Clause 19K	Rate of compensation to be paid	Rs. 50 per tradesman per day

Clause 25:

1. Conciliator - SDG (Project Region New Delhi), CPWD or successor thereof
2. Arbitrator Appointing Authority – Chief Engineer (C), CVPZ-2, CPWD or successor thereof
3. Place of Arbitration – New Delhi

**Clause 32: Requirement of Technical Representative(s) and Recovery Rate:
(For Civil only)**

Qualification	Number	Minimum Experience (Years)	Designation of Technical Staff	Rate of Recovery (Rs. per month per person)
Graduate Engineer (Major Component)	1	20 years and having experience of one similar nature of Work	Project Manager	Rs.1,50,000 - /per Month
Graduate Engineer (Major Component)	2	12 Years and having experience of one similar nature of work	Deputy Project Manger	Rs 1,00,000 - /per Month per person
Conservation Architect (Major Component)	2	10 Years and having experience of one similar nature of work	Heritage Expert	Rs 1,00,000 - /per Month per person
Graduate Engineer or Diploma Engineers (Civil Engineering)	4	5 or 10 years respectively	Project/ Site Engineer	Rs. 60,000/- per Month per person
Graduate Engineer	1	8 Years	Quality Engineer	Rs. 60,000/- per Month per person
Graduate Engineer	1	6 years respectively	One Project Planning and one Billing Engineer	Rs. 50,000/- per Month per person
Diploma Engineer	1	8	Surveyor	Rs. 50000/- per month
Graduate	1	6	Health and Safety	Rs. 40,000/- per month
Graduate (Architect)	2	3	Site Architect	Rs. 40,000/- per month

1. The Contractor shall submit a time schedule of deployment of technical staff as specified above, along with and in conformity to the activity wise work programme, within 15 days of award of work.
2. This deployment schedule shall be got approved by the Engineer-in-Charge and in case of failure to comply with the approved deployment schedule, without valid reasons, recovery at the rates specified in the above table, shall be affected from the payments due to the contractor.
3. 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 company 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 engineer.

Clause 38: Applicable as given below

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION		
i)	Schedule/statement for determining theoretical quantity of cement & bitumen based on Delhi Schedule of Rates	Delhi Schedule of Rates 2023 with amendments up to the last date of submission of bid.
ii)	Variations permissible on theoretical quantities.	
(a)	Cement	2% Plus/Minus
(b)	Bitumen for all works.	2.5% Plus only and nil on minus side.
(c)	Steel reinforcement and structural steel sections for each diameter, section and category	2% Plus/minus side
(d)	All other materials	Nil

Integrity Pact	Independent External Monitor	Particular of IEM's appointed by CVC:		
		S. No.	Name of IEM	Address
		1	Sh. Vinayaka Rao Turga IOFS (Retired)	Turga House, Anne Baburao Colony Penamaluru, Vijaywada, Andhra Pradesh - 521139 Mobile:9007723414 email:tvrao56@gmail.com
		2	Dr. Ravindra Kumar Srivastava IAS (Retired)	46 Anand Niketan, New Delhi - 770027 Mobile: 9999985440 email: srivastava.rks@gmail.com
		3	Sh. Vijay Kumar Singh Principal Chief Conservator of Forest HAG (Retired)	Flat No. 502, Tower 29, Lotus Boulevard, Sector-100, Noida (U.P.) -201304 Mobile: 9717581113 email : ksingh_vijay@yahoo.com

Appendix-I

Establishing Site Laboratory and Testing of Materials

Contractor shall establish at his own cost fully furnished and fully equipped site laboratory to conduct all requisite tests therein. The size of laboratory, numbers & types of equipment's and other facilities shall be as per scheme approved by the engineer in charge. Facility of drinking water, toilets, pantry etc. shall also be made available in the site Laboratory for working during night hours. All cost incurred in the setting-up of the laboratory is deemed to be inclusive in the tendered amount and nothing extra is payable to the contractor on this account. Equipment for conducting necessary tests (as per CPWD Specifications 2019 Volume-I & II) shall be provided and installed at site in the well-furnished site laboratory by the contractor at his own cost. The following laboratory equipment should be in general or as and when required to be set up at site laboratory: -

Sl. No.	Equipment	Numbers
1	Schmidt Hammer for Non-Destructive Testing (NDT)	2
2	Ultrasonic Pulse Velocity Tester (UPVT)	2
3	X-ray Diffractometer (XRD) for material analysis	1
4	Moisture Meter for dampness assessment	4
5	Conductivity Meter for salt contamination analysis	2
6	Rebound Hammer for surface hardness	2
7	Crack Width Gauge	4
8	Digital Vernier Caliper	4
9	Digital pH Meter	4
10	Air Content Testing Machine for lime mortar	2
11	Digital Paint Thickness Meter (for stone & metal)	2
12	Weighing Scale Platform Type (100 Kg Capacity)	2
13	Set of Sieves for Fine & Coarse Aggregates (with lid and pan)	2
14	Hot Air Oven (50°C to 300°C)	2
15	Standard Vibration Table for sample testing	2
16	Water Testing Kit	2
17	Digital Thermometer (up to 150°C)	4
18	Measuring Cylinders (100ml, 250ml, 500ml)	2 each
19	Pyrex or Borosil Beakers with cover (500ml, 200ml, 50ml)	2 each
20	Laser Scanner for structural documentation	2
21	Total Station for structural assessment	2
22	3D Scanning & Photogrammetry Equipment	1 set
23	Real-Time Environmental Monitoring System	2 sets
24	Slump cone, steel plate, tamping rod, steel scale, scoop	5
25	Vicat Apparatus with Desk pot	1
26	Megger & earth resistance tester	1
27	Sieve Brushes and sieve shaker capable of 20mm and 300mm dia sieves, manually operated with timing switch assembly	2
28	Cube moulds size 70mmx70mmx70mm	60
29	Cube moulds size 150 mm x 150 mm x 150mm	90
30	Electronic balance 600gx0.1g., 10kg and 50 kg	2
31	Spatula 100mm & 20mm with long blade wooden handle	6
32	Digital Micrometer least count. 0.01mm	4 each

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

33	Digital paint thickness meter for steel/aluminium 500 microns range	2
34	GI tray 600x450x50mm, 450x300x40mm,300x250x40mm	2 Nos each
35	Screw gauge 0.1mm-10mm, least count 0.05	4
36	Water testing kit	2
37	Pruning Rods 2 Kg weight length 40 cm and ramming face 25 mm ²	4
38	Extra Bottom plates for 15 cm cube mould	50
39	Standard Vibration Table for gauging the cubes	2
40	Pocket concrete penetrometer 0 to 50kg/ sq.cm	2
41	Mortar Cube Vibrator	2
42	Dial type spring balance preferable with zero correction knob capacity 100 kgs. Reading to ½ kg.	2
43	Counter scale capacity 1 kg and 10 kg	2
44	Wash Bottles capacity 500 ml	8
45	Thermometers 1-100 degree centigrade / max. and Min/ Dry and wet with table	4
46	Set of box spanner ratchet	2
47	Hammer 1lb& 2lb	2 each
48	Distance metre (of 100 metre)	2
49	Hacksaw with 6 blades	2
50	Measuring tape (5 metre)	8
51	Depth gauge 2 cm	4
52	Shovels & Spade	2
53	Steel plates 5 mm thick 75x75 cm	2
54	Plastic or G.I. Buckets 15 liter, 10 liters, 5 liters	2 each
55	Wheelbarrow	24
56	Floor Brushes, hair dusters, scrappers, wire brush, paint brushes, shutter steel plat oil, kerosene with stove etc.	4 each
57	Any other equipment for site tests as outlined in BIS codes and as directed by the Engineer-in-charge.	-
58	V-Funnel	2
59	L Box	2
60	Alcometre	2
61	Multiline laser Level	2
62	Environment Monitoring Lab:	1 unit
63	Real time air quality monitoring system with display screen	2 set (one at construction site and other at batch mix plant)
64	BIS codes, Conservation manuals and other codes	As per requirement and direction of engineer in charge.

Appendix-II

List of Minimum Requirements (but not limited to) of Plant and Equipment at site

Sl. No.	Equipment	Numbers
1	Mobile Crane for stone lifting	As per requirement
2	Air Compressor for cleaning & repair	2
3	Granite/Stone Cutting Machine	As per requirement
4	Hand Polishing Machine for stone elements	3
5	Chemical Treatment Sprayers for preservation	4
6	Floor Grinding/Polishing Machines	6
7	Water Tanker (5000 Liters) for lime curing	As per requirement
8	Reinforcement Cutting & Bending Machine	4
9	Scaffolding and Staging Materials	2000 sq. mt.
10	Needle Vibrators for grout injection	8
11	Shuttering with necessary props	5000 sq. mt.
12	Double Steel Scaffolding	2000 sq. mt.
13	Power-Driven Earth Rammer	2
14	Electric Mixer for lime mortar preparation	2
15	Chemical Fume Hood for safe handling of conservation chemicals	1
16	Lime pan Mixer	2
17	Water Jet	3
18	Hand grout pump	3
19	Weighing Bridge	1 of capacity minimum 10 MT or as required on site

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

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

In addition to that the agency shall provide tree office attendant, one data entry operator and 1 Nos. of inspection vehicle till actual completion of the work (Driver and fuel) shall be provided and cost shall be borne by the agency.

(PART- B)
CONDITIONS
(CIVIL WORKS)

Conditions for Specialized Works

1. Association and Execution for Specialized Works (Civil)

The main contractor shall associate the specialised agency/Firms to execute the items/works as mentioned below who are qualifying the eligibility condition,

Sr. No.	Eligibility criteria for approval specialised agency
1.	<p>Conservation Work (Item No. 6.1, to 6.6, 7.1 to 7.22, 9.1, 9.4, 10.1 to 10.6)</p> <p>Similar work shall mean “Conservation work involving preserving and repairing structures of historical or cultural importance, by stabilizing the building, maintaining original features, and addressing structural issues by using the respecting traditional materials (lime, stone etc.) and techniques”.</p>
	<p>The associate agencies should have satisfactorily completed the works as mentioned below during the last 7 years ending up to 31.03.2025.</p> <p>(a) Three completed works each costing not less than 40% of the tendered amount of the conservation items proposed for the assignment to the associates agency Or</p> <p>(b) Two completed works each costing not less than 60% of the tendered amount of the conservation items proposed for the assignment to the associates agency Or</p> <p>(c) One completed work costing not less than 80% of the tendered amount of the art conservation items proposed for the assignment to the associates agency</p> <p>(Note: The main contractor may have to choose more than one specialized agency, limited to maximum 6 for conservation works. Any associate agency shall be assigned the work not less than completed cost of work Rs. 6 Cr under the present contract and the agency shall be assigned works area-wise so that there is no conflict/ overlapping with the other agency/agencies)</p>
2.	<p>Art Conservation Work (Item No. 18.7)</p> <p>Similar work shall mean “Art conservation work involving preserving, repairing, and maintaining art painting to prevent deterioration including cleaning, stabilizing, and restoring damaged paintings using specialized techniques”</p>
	<p>The associate agencies should have satisfactorily completed the works as mentioned below during the last 7 years ending up to 31.03.2025.</p> <p>(a) Three completed works each costing not less than 40% of the tendered amount of the art conservation items proposed for the assignment to the associates agency Or</p> <p>(b) Two completed works each costing not less than 60% of the tendered amount of the art conservation items proposed for the assignment to the associates agency Or</p> <p>(c) One completed work costing not less than 80% of the tendered amount of the art conservation items proposed for the assignment to the associates agency</p>

	(Note: The main contractor may have to choose more than one specialized agency, limited to maximum 2 for art conservation works. Any associate agency shall be assigned the work not less than completed cost of work Rs. 30 lakh under the present contract and the agency shall be assigned works area-wise so that there is no conflict/ overlapping with the other agency/agencies)
3.	<p>Structural Repair and Rehabilitation/ Retrofitting works (Item No. 3.1 to 3.13)</p> <p>Similar nature work means “Structural Rehabilitation/ Rehabilitation and Repair / Retrofitting/ Seismic Retrofitting/ Special Structural Repair of any RCC/ masonry structure”</p>
	<p>The associate agencies should have satisfactorily completed the works as mentioned below during the last 7 years ending up to 31.03.2025.</p> <p>(a) Three completed works each costing not less than 40% of the tendered amount of the retrofitting items proposed for the assignment to the associates agency Or</p> <p>(b) Two completed works each costing not less than 60% of the tendered amount of the retrofitting items proposed for the assignment to the associates agency Or</p> <p>(c) One completed work costing not less than 80% of the tendered amount of the art conservation items proposed for the assignment to the associates agency</p> <p>Note:</p> <p>a. The main contractor may have to choose more than one specialized agency, limited to maximum 4 for structural repair and rehabilitation/ retrofitting works. Any associate agency shall be assigned the work not less than completed cost of work Rs. 6 cr under the present contract and the agency shall be assigned works area-wise so that there is no conflict/ overlapping with the other agency/agencies)</p> <p>b. At least one of the similar work must involve the application of the Carbon fibre reinforced polymer (CFRP) wrap/ laminate.</p> <p>c. CFRP) wrap/ laminate items of work shall be executed by the bidder through the manufacturer of the items or through their authorized applicators/installers only</p>
4.	Water proofing works (Item No. 17.1 to 17.16)
	<p>The associated agencies should have satisfactorily completed the works as mentioned below during the last 7 years ending up to 31.03.2025.</p> <p>(a) Three completed works each costing not less than 40% of the tendered amount of the water proofing items proposed for the assignment to the associates agency Or</p> <p>(b) Two completed works each costing not less than 60% of the tendered amount of the water proofing items proposed for the assignment to the associates agency Or</p> <p>(c) One completed work costing not less than 80% of the tendered amount of the art conservation items proposed for the assignment to the associates agency</p>

	<p>(Note:</p> <p>(The main contractor may have to choose more than one specialized agency, limited to maximum 2 for water proofing works. Any associate agency shall be assigned the work not less than completed cost of work Rs. 6 cr under the present contract and the agency shall be assigned works area-wise so that there is no conflict/ overlapping with the other agency/agencies)</p>
5.	<p>Anti-termite works (18.1 & 18.2)</p> <p>Estimated Cost: Rs. 68.85 Lakh</p>
	<p>The associated agencies should have satisfactorily completed the works as mentioned below during the last 7 years ending up to 31.03.2025.</p> <p>(a) Three completed works each costing not less than Rs. 27.5 Lakh of the component of specialized work.</p> <p style="text-align: center;">Or</p> <p>(b) Two completed works each costing not less than Rs. 41.25 Lakh of the component of specialized work.</p> <p style="text-align: center;">Or</p> <p>(c) One completed work costing not less than Rs. 55 Lakh of the component.</p>

Note:-

1. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to previous day of last day of month previous to the one in which association is proposed. In case main contractor himself has satisfactorily completed similar work of required magnitude as mentioned above, he may also be allowed to carry out specialized work. The contractor shall submit all required relevant documentary evidences to the satisfaction of Engineer in charge for ascertaining credentials of specialized agencies as may be demanded by Engineer in charge like certified copy of work order/contract with BOQ, income tax TDS certificates/Form-26AS in support of amount paid, satisfactory completion certificate etc. including inspection of such works.
2. In case Engineer-in-charge is satisfied that the Specialized Agencies with above credentials are not available, then multiple agencies may be approved or the above criteria may be relaxed with the approval of NIT approving authority.
3. For specialized items of works, Contractor has to engage specialized agencies/firms within one month for waterproofing & anti termite and within three months for other specialized works after award of the work, who have work experience submitting experience certificate issued by competent authority for satisfactory completion of similar works as per following criteria during last seven years ending 31.03.2025 and shall be got approved from the Engineer-in-Charge. The decision of Engineer-in-charge shall be final and binding on the contractor.
4. Some of the specialized items of work such as the ones listed below, shall be executed by the bidder through the Manufacturer of the items or through their authorized applicators/installers only.
 - a. Water proofing treatment
 - b. Carbon laminate/wrap

1.2 Additional Security Deposit

Security deposit for specialized items of water proofing subhead, conservation work subhead and structural repair and rehabilitation/ retrofitting works subhead (All Items) shall be withheld for a period of 10 years beyond Defect liability period (DLP). The guarantee Bond for the same shall be valid for the period of 10 years beyond Defect liability period (DLP). The Performa for the same is given in the annexure in the NIT. The 50% of such amount shall be released after satisfactory completion of half of the total guarantee period.

GENERAL CONDITIONS

1. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power-of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1932.
2. The receipt of an accountant or clerk for any money paid by the contractor will not be considered as any acknowledgment or payment to the officer inviting tender and the contractor shall be responsible for seeing that he procures a receipt signed by the officer inviting tender or a duly authorized Cashier.
3. 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 Superintending Engineer/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.
4. The structural and architectural drawings shall at all times be properly correlated 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 and otherwise given in writing by the Engineer-in-Charge.
5. The tenderer shall study carefully, the drawings, specifications, schedule of quantities and conditions of the tender documents to fully appreciate the scope of work before quoting his rates.
6. The contractors are advised to get acquainted with the proposed work and its site and also study the Architectural Drawings, specifications and special conditions carefully before tendering. No claim of any sort shall be entertained on account of any site conditions and ignorance of specifications and special conditions.
7. The civil work shall be carried out as per **CPWD specifications for works-2019 Vol. I & II** with up-to-date correction slips unless otherwise specified in the nomenclature of individual item or in the specifications and special conditions, where specifications are silent, the decision of Engineer-in-Charge shall be final and binding on contractors. Road work shall be executed as per latest MORTH specifications.
8. The rates quoted by the contractor shall be taken as net and nothing extra shall be paid on any account i.e. royalty, cartage, GST and stacking at required places & working in restricted area etc.
9. The rates for different items of work shall apply for all heights and depths, leads and lifts unless otherwise specified in the agreement or specifications applicable to the agreement.
10. Any damage done by the contractor to any existing work during the course of execution of the work shall be made good by him at his own cost.
11. Articles manufactured by the reputed firms and approved by Engineer-in-Charge shall only be used. Only articles classified, as 'first/superior quality' by the manufacturer shall be used unless otherwise specified. In case articles bearing ISI certification are not available in the market, quality of samples brought by the contractor shall be judged by standards laid down in the relevant CPWD specifications. For the items not covered by CPWD specifications relevant BIS standards shall apply. The sample of materials to be brought to site for use in work shall be got approved from the Engineer-in-Charge before actual execution of work.

12. Samples of materials required for testing shall be provided free of cost by the contractor. All expenditure to be incurred for taking samples, conveyance, packing, testing charges etc. shall be borne by the contractor.
13. The quantities of each item shall not be exceeded beyond the agreement quantities without prior permission of Engineer-in-Charge.
14. Income tax as per Income tax rules, GST as per rules, 1% Labour Cess and 1% water charges (if departmental water used) will be recovered from the gross amount of the bill.
15. Contractor is to make own arrangement of electricity as department is not obliged to provide electricity, however if departmental electricity is used then 1% electricity charges will be recovered from the gross amount of work done but the contractor shall arrange the necessary electrical fittings and cables etc. for taking the electrical power from nearest electrical point to the work site at his own cost.
16. All types of mortars to be used in the work shall be mixed in the mechanical mixer and hand mixing shall not be permitted.
17. The contractor shall make his own arrangement for getting the permission to ply the trucks from the traffic police or any other authority in this regard.
18. No payment shall be made to the contractor for any damage caused by rain, snow fall, floods or any other natural causes whatsoever during the execution of work. The damage caused to work shall have to be made good by the contractor at his own cost and no claim on this account shall be entertained.
19. Some restrictions may be imposed by the Police/ security staff etc. on the working and or movement of labour and materials, etc, the contractor shall be bound to follow all such restrictions / instructions and nothing shall be payable on this account.
20. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work by storing materials on the road.
21. The contractor shall be fully responsible for the safe custody of the material issued or brought by him to site for doing the work.

22. **Testing of materials**

Samples of various materials required for testing shall be provided free of cost by the contractor unless otherwise specified in the item. Testing charges shall be borne by the contractor. All other expenditures required to be incurred for taking the samples, conveyance, packing etc. shall also be borne by the contractor himself.

23. The rate for all items of work, shall unless otherwise clearly specified include cost of all labour, material and other inputs involved in the execution of the items.
24. The order of preference in case of any discrepancy as laid down in condition no. 8.1 under "Conditions of Contract" given in the **General Conditions of Contract for Central P.W.D work 2023** for construction work may be read as under-
 - a) Nomenclature of item as per Schedule of Quantities
 - b) Particular specifications and special conditions if any
 - c) General Conditions

- d) Special Conditions
- e) Contract Clauses standard form CPWD 7, GCC 2023 for Construction works amended /corrected up to last date of submission of bids.
- f) CPWD Specifications 2019 and latest MoRTH specification as applicable
- g) Architectural/structural drawings and specifications mentioned in drawings
- h) Indian Standard Specifications of BIS
- i) Sound engineering practice as per directions of the Engineer-in-Charge
- j) Manufacturer's specifications

Any reference made to any Indian Standard Specifications and other specifications mentioned in the respective items in these documents, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian Standards applicable to the work at site.

25. The contractor will not have any claim in case of any delay by the Engineer-in-Charge in removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structure etc., if any which may come in the way of the work. However, suitable extension of time can be granted to cover such delay.
26. The malba/garbage generated at site due to construction activities shall be removed from the site immediately & shall be disposed off by the contractor to the approved dumping site identified by the Engineer-in-charge. The surplus soil/earth shall be disposed of as per the directions of Engineer-in-charge separately.
27. **Maintenance of Register of Tests-** All tests carried out at construction site, in house laboratory or outside laboratories shall be recorded in the test registers. Contractor shall procure printed registers as per format approved by the Engineer in charge. All such registers, procured by the contractor shall further be duly issued by Engineer-in-Charge for use of the lab/field staffs. Contractor shall keep all the registers updated with latest valid entries and produce for inspection on the direction of engineer in charge or his authorised representatives.
28. **Maintenance of Material at Site (MAS) Register-** Contractor shall duly make entries of every receipts and issues of cement, TMT bars, paints etc. in the MAS, cement and paint registers which shall be issued to the contractor by Engineer-in-Charge. All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge, however blank test registers shall be procured by the agency.
29. **It shall be mandatory to submit the self-attested (by agencies/ contractor) copies of Tax paid bills of the materials entered in the MAS register viz Steel, Cement, Bitumen, Paint, adhesive, admixture, Anti termite chemical, water proofing compound material or any other material as required/ enquired by Engineer-in-charge.**
30. Contractor shall be responsible for safe custody of all the test registers, MAS, cement, paint and steel registers. Contractor shall keep all the registers updated with latest valid entries and produce for inspection on the direction of engineer in charge or his authorised representatives.
31. 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

32. 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.
33. It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.
34. 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.
35. The contractor shall be responsible for the watch and ward/guard/safety/ of the compound wall, Road, retaining/breast wall, signage's etc. provided by him against pilferage and breakage during the period of installations and thereafter till the work is physically handed over to the department. No extra payment shall be made on this account.
36. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials, if issued by department.
37. 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.
38. The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth etc. shall be stacked/ collected in areas where other buildings, roads, services, compound walls etc. are to be constructed.
39. 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.
40. 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.
41. 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 also see the approaches to the site in case any approach from main road is required at, site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost. No extra payment whatsoever shall be made on this account.
42. The Executive Engineer by prior notice in writing to the contractor may reduce/increase the scope of work. In case of deviation in quantities, no extra claim except as otherwise provided in the contract shall be entertained by the department.
43. The contractor(s) shall submit "Time & Progress chart" for execution of work in different reaches showing activities distinctly along with Bar-Chart within fifteen days of the letter of award of work in direct relation to the time stated in the contract document for completion of items of the works

as per different milestone fixed indicating the forecast of date of commencement and date of completion of various items / activities as per agreement for adherence during execution.

If any time, 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 by additional inputs to ensure completion of the work within the stipulated time.

In case the contractor fails to achieve individual milestone as specified in Schedule F, action shall be taken as per clause 5 & other relevant clauses of the General Conditions of Contract 2023 amended/ correct up to last date of submission of bid.

44. In case of any calamity or injury to any labour / workmen etc. or loss / wastage of materials due to nature or insurgency, contractor shall have to bear the cost of compensation and no claim to this effect shall be entertained by the department.
45. Royalty at the prevalent rates including contribution towards Mineral Exploration Research and Innovation Trust (MERIT) as applicable and District Mineral Foundation (DMF) as applicable of Royalty / Seigniorage fee shall have to be paid by the contractor. All the taxes/ charges etc, on all the boulders, stone aggregate, brick aggregate, shingle, coarse or fine aggregate, earth, gravel, bajri etc. collected by him for the execution of the work shall be directly paid to the Revenue Authority or authorized agent of the State Government concerned or Central Government by the contractor and deemed included in the quoted cost. Further, contractor may be asked to submit proof of submission of full royalty to the State Government or local authority for record purpose of Engineer-in-charge. The rates mentioned in the documents relating to this contract are deemed to include all such expenditure and nothing extra shall be paid on this account.
46. The tenderer shall abide by the rules and regulations of respective GST Act etc. Necessary deductions on account of taxes shall be made on the gross value of the work done from the bills of the contractor as per the provisions of above stated Acts. Necessary certificates for tax deduction at source shall be issued to the contractor by the Engineer in Charge. The decision of the Engineer in Charge regarding quantum of tax deducted at source shall be final and binding on the contractor.
47. Necessary permit etc. for utilization of forest product would be obtained by the contractor directly from the Forest Authority. Necessary Forest Royalty Clearance Certificate (FRCC) from the Forest Authority shall be submitted by the Contractor to the Engineer-in-Charge along with the Bills for the work. Engineer-in-Charge reserves the right to deduct any sum considered reasonable towards forest royalty from the Running Accounts Bills of the Contractor, in the event of non-submission of FRCC. In case the contractor does not submit FRCC a sum considered reasonable towards payment of forest royalty would be deducted by the Engineer-in-Charge from the final bill of the work and credited to the Government accounts. The Engineer-in-Charge would determine the quantum of materials consumed on which such royalty is payable and also the rate of royalty payable. The decision of the Engineer-in-Charge shall be final and binding on the matter.
48. Unless otherwise specified in the schedule of quantities, the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water if required and, therefore, no extra payment will be made on this account. This will include water encountered from any source, such as rains, floods, subsoil water or any other cause whatsoever.

Special Conditions

1. The contractor shall give performance test for the entire installation (S) as per the specifications in presence of Engineer-in-charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the contractor on this account.
2. The contractor shall perform minimum of **5 Non Destructive Tests (NDT) per 1,000sqm** of the plinth area on various elements like slab, beams, columns, walls etc. as per the direction of the Engineer-in-charge. Nothing extra what-so-ever shall be payable to the contractor on this account.
3. Chemicals from specified companies only should be used and precautions & mix proportions specified by the manufacturer should be adhered to.
4. All the chemical to be used shall have self-life of one year. Old/expiry date material shall not be used for any repair.
5. The rate of each item shall include, clearing the existing treatment, surface preparation, and application of fresh treatment, as per the relevant procedure.
6. All the malba shall be disposed by the contractor to the dumping ground approved by the MCD/NDMC or as directed by the Engineer-in-charge. The site shall be kept neat and clean during and after the completion of the work.
7. The dismantling/demolishing where required shall be done in manner that no other portion of the building or its fixture or the existing flooring is damaged. In the event of any such damage, the same shall be made good by the contractor at his own cost and no claim whatsoever will be entertained this account.
8. The Non-serviceable dismantled material shall be disposed off by the contractor with designated C&D Waste recycling Units approved by the engineer in charge. Processing charges paid to the C&D waste plant shall be reimbursed to the contractor on production of the original invoices and after verification by the Department.
9. Contractor will demolish the wall in safest manner and he will take all precautions to prevent the surrounding structures/ services from any damage.
10. The contractor will segregate serviceable/ non-serviceable materials. The materials shall be weighted on the mobile weight bridge of minimum capacity 20 MT installed by the contractor (the cost of the same is deemed included in the estimate), as required. The items shall be verified and jointly measured before disposing off the site. The rate is inclusive of all cost incurred in the demolishing work, T&Ps, manpower, segregation of serviceable/ non-serviceable materials, weighing, disposal of same with all lead and lifts etc. all complete.
11. If any serviceable item, not in the Schedule of quantities (SOQ) encounters during the execution, same shall be brought to the notice of the Engineer-in-charge immediately.

12. Setting Out

- (i) It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and center lines, etc. Nothing extra shall be payable on this account.
- (ii) Through the site levels are indicated in the drawings the Contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. The Contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of work. These benchmarks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account.
- (iii) The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be the contractor shall correlate all the relevant architectural and structural drawings, and specifications etc. and satisfy himself that the information available is complete and unambiguous. The contractor shall be responsible for any loss or damage occurring by the commencement of work based on any erroneous and or incomplete information.
- (iv) The work of services will be executed simultaneously. The contractor shall minimize the scope of making recesses, holes, opening etc. as the same shall be planned and necessary grooves/niches shall be provided where ever required in shuttering of RCC.

12. Land for Storage/Labour Camps/RMC:

- (i) Contractor has to arrange land/building for establishing labour camp/Batching plant/storage within Delhi/NCR area and shall make their own arrangements and also, transportation of labour from labour camp to site in three shifts as per requirement.
- (ii) The Contractor shall approach the concern allotment authority for allotment of land required for the establishment of labour camp, batch mix plant & for any other purpose for the execution of work. CPWD will issue the recommendation letter for getting the land allotment, for execution of this Govt. work. The Contractor shall make necessary payments for the lease charges etc. to be levied by the concern allotment authority. The Contractor shall abide by the terms and conditions of the land allotment. No hindrance on account of the delay in allotment of the land will be entertained. In addition to above, contractor may look for additional/alternate land in nearby vicinity and if it is available, then above process shall be applicable for this land also.
- (iii) All necessary License/Lease charges shall be borne by the Contractor only. Further he should arrange electricity, Water etc. on his own and bear all charges complete.
- (iv) Contractor shall make his own arrangement for transportation of Batch Mix Concrete from Batching Plant and other materials at his own cost.
- (v) The work shall be near very busy roads and Contractor has to plan the construction work in such a manner so that minimum disturbance to public is caused. Contractor will prepare diversion plan during construction and will get it approved from the Delhi Traffic Police. Payment for diversion roads, if required during construction shall be the responsibility of the Contractor only and deemed included in the quoted cost.

13. Water supply and electricity:

- (i) The contractor shall carry out construction activities while maintaining and permitting the access and use of all amenities, services that remain functional. Arrangement of water for drinking purpose in addition to the water required for construction work is also to be made by the contractor at his own cost. The contractor shall also make his own arrangement for obtaining electric connection(s) and make necessary payment directly to the department concerned.
- (ii) The contractor shall make his own arrangement of water for completion of work and nothing will be paid on this account. The contractor shall get the water tested with regard to its suitability daily and conforming to the relevant IS code. The contractor shall obtain written approval from the Engineer-in-Charge before he proceeds by using the same for execution of work. The contractor shall arrange suitable water at his own cost. The contractor shall install industrial R.O. system of required capacity as per the direction Engineer-in-Charge, to bring the water quality to the required standards and shall be tested before use regularly.
- (iii) The contractor shall make his own arrangement for electricity required for the execution of work and nothing extra shall be paid for the same. However, the Engineer-in Charge shall recommend the application to the concerned authority for electric connection, if desired. Necessary payment shall be made by the contractor directly to the department concerned. In case Electricity supplying authority fails to sanction the electric connection or delays the sanction for electric connection, the contractor shall make his own arrangement by providing diesel generators of adequate capacity at his own cost.

14. Existing utilities:

- (i) Existing drains, pipes, cables, overhead wires, sewer lines, water lines and similar services encountered in the course of the execution of the work shall be protected/ maintained against the damage by the Contractor. The Contractor shall identify all underground / overhead services using Geospatial Refraction Survey of the entire area at his own cost if required and take necessary measures to protect the services before starting any excavation / activity. All temporary supports and other measures required to protect and maintain the services during construction period as per direction of Engineer-in-charge, shall be deemed to be included in the quoted rate / amount of the Contractor and nothing extra shall be paid on this account. For any permanent shifting, CPWD shall arrange to shift the services as and when required. However, in the interest of work, if CPWD decides to get it shifted by the Contractor, then Contractor shall be paid separately at the rates as decided by the Engineer-in-charge as per contract provisions based on the actual quantum of the work involved in shifting such utilities/services. The decision of the Engineer-in-Charge in this regard shall be final and binding.
- (ii) The contractor will not have any claim in case of any delay in removal of trees or shifting, raising, removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structures etc., if any, which may come in the way of the work. However, suitable extension of time will be granted to cover such delays.
- (iii) The Contractor has to protect the existing bore holes, if any, in the plot, around the proposed building and the same shall be converted as recharge bores at the end and the additional work done if any shall be paid to the agency.

15. Diversion of Services:

All works pertaining to services including rerouting/diversion of services, routine testing, installation etc., embracing in one or more than one process shall be subject to examination and approval to each stage thereof by the Engineer-in-charge or concerned department as would be notified by the Engineer-in-charge or his accredited representative when such stage is ready. Any work needed in re-routing the services shall be paid separately to the contractor. In default of such notice, the Engineer-in-Charge shall be entitled to appraise the quantity and extent thereof and the decision of Engineer-in-Charge or his accredited representative in this regard shall be final and binding.

16. Permanent Benchmarks:

Contractor(s) shall provide permanent bench marks, flat tops and other reference points for the proper execution of work and these shall be preserved till the end of the work. Contractor to submit drawings showing location of permanent bench marks, flat tops and other reference points to Engineer in charge for records. All such reference points shall be in relation to the levels and locations, given in the drawings.

17. Site Establishment plan:

Contractor shall submit site establishment plan showing location of material store, steel yard, site offices, laboratories and movement of machinery in the premises for approval from Engineer in charge.

18. Site organization:

- (i) The successful bidder shall submit a detailed Organization Chart showing the title and responsibilities of each of the key personnel employed for the Work after award of work.
- (ii) All levels of administrative and technical management, including:
 - a) Head office
 - b) Senior site management
 - c) Section/area managers
 - d) Supervisory engineers
 - e) Foremen
 - f) Senior technician etc.
 - g) Clearly designated groupings of skilled/unskilled work teams etc.
 - h) Similar information shall be shown clearly also for the personnel of each of the associated agencies.
 - i) The Organization Chart shall indicate clear lines of authority and responsibility between the personnel positions, and the distribution of authorities and responsibilities shall be clearly demonstrated by the Organization Chart.

19. Contractor's care of the works:

- (i) The Contractor shall bear full risk in and take full responsibility for the care of the Works and Materials, goods and equipment for incorporation therein from the Commencement Date until the Completion Certificate is issued, except and to the extent that any loss of or damage to the same shall arise out of any default or neglect of the Employer.

- (ii) Any legal/ financial/ statutory implications resulting out of disposal of earthwork, ordinary rock, hard rock shall be sole responsibility of the contractor.
- (iii) Wheel tyres of all the vehicles used by the contractor or any of his sub-contractor for material supplies shall be cleaned and washed of all dust/mud before leaving the project premises by routing vehicles through tyre washing tracks and facility.
- (iv) CPWD shall not provide any material either on chargeable or on free issue basis to the Contractor for execution of the project.
- (v) Throughout the execution of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defect; the Contractor shall take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Goods, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation.
- (vi) Contractor shall have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and in so far as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such persons.
- (vii) Provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer-in-Charge or by laws for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and
- (viii) Where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such work.
- (ix) Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual), CPWD's handbook on safety, health and environment (available on CPWD website), NBC-2016 and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards. In case the Contractor fails to fulfil the requirement; the Employer may provide the necessary arrangements and recover the costs from the Contractor.

20. Work in multiple shifts:

- (i) If the work is to be carried out in more than one shift or during night, no claim on this account shall be entertained. The contractor must take permission from the police authorities etc. if required for work during night hours. No claim/hindrance on this account shall be considered if work is not allowed during night time.
- (ii) The working in 3 shifts to be considered keeping in view the possible constraints like, nonworking during period due to any important event/function at South Block, Parliament or Rashtrapati Bhawan, nonworking due to noise beyond permissible limit at night, restricted movement of traffic in that zone, security checks of labour/staff/material/equipment/plants etc. No claim on this account shall be considered if work is not allowed for security or other reasons for a particular period. But in case of written orders of the Engineer-in-Charge to completely stop the work for particular period due to an unusual important function, then necessary EOT shall be granted for this period only.

21. Photography:

Photography/Videography at site should be carried out by authorized personnel identified by Engineer in charge. Contractor shall make necessary arrangement to keep away unauthorized persons from taking photographs/videos. Photos & Videos shall be submitted to the Engineer in Charge from time to time showing the progress/execution of the items, nothing extra is payable on this account.

22. Project Monitoring:

- (i) The contractor shall prepare the phase wise & activity wise(monthly) resource chart (materials, manpower and machinery) based on the project execution schedule as per Clause 5.1 of Schedule A to F.
- (ii) The contractor shall submit the photographs and videos of progress of work on weekly basis to make it possible to create a short film of the entire execution of the work to be kept in archive. Contractor shall update status of progress of work along with uploading of latest photographs on PMIS website/any other portal weekly or as directed by Engineer-in-charge. Hard copies can be provided on monthly basis, whereas soft copies have to be submitted on weekly basis only.
- (iii) Real time Monitoring of Progress: Contractor shall keep the provision of 24x7 live Webcam based on cloud computing platforms. It shall have facility of viewing the video feed remotely so to gain a sense of current activity, weather and project progress. Webcams shall be capable to capture photographs which are stitched together into time lapse videos to view project progress in few minutes. No extra shall be payable for the same.

23. Monthly Progress Report:

The contractor shall submit to the Engineer-in-charge by 5th day of each month, 2 hard copies and one soft copy of monthly progress report which will include the project progress, summary, work progress (planned vs actual), CPM chart, status of financial progress and achievement of milestone, manpower deployment status category wise, inventory of materials and T&P deployed and photographs of important activities.

24. Program Chart:

The Contractor shall prepare an integrated program chart within fifteen days of issue of award letter including civil as well as E&M activities for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfilment of the program activity wise within the stipulated period and submit the same for approval of the Engineer-in-Charge within fifteen days of the award of the work. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The program chart should include the following: -

- (i) Description note explaining sequence of various activities.
- (ii) Construction Program prepared on PRIMAVERA/ MS Project Software, which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
- (iii) Program for procurement of materials by the contractor (with details of quantity and amounts thereof month wise).
- (iv) Program for arranging and deployment of manpower both skilled and unskilled (activity wise) so as to achieve targeted progress.
- (v) Program of procurement/mobilization of machinery/ equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period by contractor.

- (vi) Program/ Revised Program, for achieving fortnightly micro milestones and periodic milestones. In case of noncompliance/ delay in compliance in this, a penalty as specified in Schedule “F” will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.
- (vii) If at any time, it appears to Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by deploying additional resources and inputs to ensure completion of the work within the stipulated time.
- (viii) Program for approval of specialized agencies for specialized works.
- (ix) Daily labour report in the format finalized in consultation with Engineer-in-charge.
- (x) Productivity of T&P and manpower of all categories to be employed based on which the activity wise program is being proposed.

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

25. Quality Assurance Plan

Guide lines and provisions specified in the “Hand book on total quality management 2022” available on the official web site of CPWD i.e. cpwd.gov.in, shall be followed in general. The contractor shall submit minimum “Quality Assurance” plan within 30 days after award of work which shall be consisting of:

- (i) The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
- (ii) Contractor shall be required to submit detailed method statement for all activities associated with the execution and completion of the work. Such method statement should contain all required details like checklists for pre, post and during execution of the activity/item of work, details of testing methodology, frequency, relevant testing standards as defined in the contract of the items involved in the activity. Engineer-in -charge reserves the right to direct any amendment/modification in the submitted method statement and contractor shall be bound to submit the amended/modified method statement as directed by Engineer in charge, after which only contractor shall be allowed to take up such activity. Contractor shall be required to get inspected any activity to be executed on a day from the Engineer in charge or his authorized representatives and get signed the checklist as per the method statement, after which only the activity on that particular day shall be allowed to start. Contractor shall be fully responsible for all contractual implications, for any delay caused, if any, on account of delay in submission of such method statement or modified method statement or checklists. Nothing extra, whatsoever, shall be paid on this account and his quoted amount shall be deemed to be inclusive of all such activities.
- (iii) The contractor shall prepare all the needed shop drawings well in advance at his risk and cost deemed to be included in the overall quoted cost and get them approved before placing the order and execution of the item.
- (iv) Contractor shall prepare and submit shop drawings for approval of Engineer in charge, before taking up different activities like aluminum doors, windows, plumbing for water supply and drainage, sewer lines & manholes with IL, ACP cladding, stone cladding, glass

curtain walls etc. or any other activity as directed by Engineer in charge. Contractor shall be required to make modifications as may be directed by the Engineer in charge in the submitted shop drawings and shall resubmit modified shop drawings. Contractor shall not be allowed to execute the related items without approval of such shop drawings and he shall be fully responsible for all contractual implications, for any delay caused, if any, on account of delay in submission of such shop drawings or modified shop drawings. Nothing extra, whatsoever, shall be paid on this account and his quoted amount shall be deemed to be inclusive of all such activities.

- (v) Shop drawings shall be submitted for approval four weeks in advance of planned delivery and installation of any material to allow the Engineer In-Charge ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.
- (vi) Before taking up the work, the contractor shall also prepare integrated drawings for various civil and electrical services showing details of lay out plan including sectional elevations. Contractor shall plan and mobilize his resources as per the integrated drawings and as per the site conditions to facilitate convenient execution, installation as well as maintenance of these services. Nothing extra shall be payable on this account.
- (vii) The contractor shall produce / procure all the materials in advance so that there is sufficient time for testing and approving of the material and clearance of the same before use in work.
- (viii) Materials used on work without prior inspection and testing (where testing is necessary) and without approval of the Engineer-in-Charge are liable to be considered unauthorized, defective and not acceptable. The Engineer-in-Charge shall have full powers to order the removal of any or all of the materials brought to site by contractor which are not in accordance with the contract specifications or do not confirm, in character or quality to the samples approved by the Engineer-in-Charge. In case of default on the part of the contractor in removing rejected materials, the Engineer-in-Charge shall be at liberty to have them removed at the risk and cost of the contractor
- (ix) The contractor shall give performance test of the entire installation(s) as per the specifications in the presence of the Engineer-in-charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the contractor for such test, until and unless mentioned otherwise in the agreement.
- (x) Wherever work is specified to be done 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. The contractor should negotiate with concerned specialist agencies and send their names with all required requisite documents, for approval to Engineer in charge: (a) Within one month of issue of letter of award of work for activities such as tree transplantation, termite treatment, water proofing treatment or any other activities below the plinth level as per programme submitted by agency, and (b) Within four months of issue of letter of award of work for the balance activities.
- (xi) 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.
- (xii) For certain item, if frequency of tests is not mentioned in the CPWD Specifications, then relevant BIS code shall be followed and tests shall be carried out as per the frequency

specified therein.

- (xiii) If any load testing or special testing is to be done for any sample whose strength is doubtful, the cost of the same shall also be borne by the contractor.
- (xiv) 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. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per approved list of brand names given in the tender document / additional specifications for approval of Engineer-in-charge. For all other items, materials and fittings of ISI Marked shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant specifications or IS codes and use the same only after getting the approval.
- (xv) The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.
- (xvi) Before taking up the finishing work such as flooring, plastering, false ceiling, panelling, contractor shall prepare full-scale sample unit of each of such unit like toilet, room, corridor etc., for large-scale repetitive items and get approved from Engineer-in-Charge before taking up for execution on large scale.
- (xvii) Based on the samples approved by the Engineer-in-Charge for various flooring and dado / cladding materials as specified hereinafter, the contractor shall prepare mock up(s) at site of work as specified under relevant flooring and dado / cladding items, for approval of quality of workmanship and material specified. If the quality of the workmanship and the material is as per the required standards and approved by the Engineer-in- Charge, the mock up shall be allowed as part of the work and measured for payment. Otherwise, it shall be dismantled by the contractor as directed by the Engineer-in-Charge and taken away from the site of the work at his own cost. The mock up(s) so made shall be kept till completion of respective works for reference. Nothing extra shall be payable on this account.
- (xviii) The contractor shall prepare & display mock-ups in actual position of each and every item and obtain approval of Engineer-in-charge before mass execution. The mockup shall be preserved for the purpose of reference till completion of the item represented by the mockup. Similarly, the contractor shall prepare sample toilet blocks comprising of all finishes and fittings included in the scope of this contract. Approval of Engineer-in-charge shall be obtained before taking up finishing works for mass execution. The work executed in approved mock ups/sample units in actual position forming part of the main work shall be deemed to be included the scope of work and quoted rates of the contract. However, the contractor shall have to dismantle and remove the rejected mockup / sample from the site of work at his cost.

- (xix) 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/stones in dado, false ceiling, doors, windows, panelling, 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. No extra claim whatsoever beyond the payments due at agreement rates will be entertained from the contractor on this account.
- (xx) 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.
- (xxi) All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions submitted before covering.
- (xxii) Receipt of Material, testing of the same and maintenance of register of tests:
 - a) All the registers of tests, receipt of materials (MAS account) carried out at construction site or in outside laboratories shall be maintained by the contractor which may be inspected by Engineer-in-charge or his/her representative at any point of time.
 - b) The contractor shall allow access to Third Party Quality Assurance Agency (TPQA) engaged by Engineer-in-charge to have a control on quality and methodology of execution.
 - c) All the test in field lab setup at construction site shall be carried out by the quality control team to be engaged by the contractor which can be witnessed by Engineer-in-charge or his authorized representatives.
 - d) All the entries in the registers will be made by the designated engineering staff of the Contractor.
 - e) Contractor shall be responsible for safe custody of all the test registers.
 - f) All material (Reinforced Steel & Cement) received at site shall be entered in MAS (Material at Site) register, MTC & bill-invoice shall be maintained in order. The MAS registers including cement and steel registers shall be maintained by a qualified staff of contractor which may be inspected by Engineer-in-charge or his authorized representatives at any time. The daily report of receipt of material may require to be sent to Engineer-in-charge or his authorized representatives
 - g) Sample of building materials, fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge before use in the work. The quality of samples brought by the contractor shall be judged by standards laid down in the relevant CPWD/ 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.
 - h) 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 items/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall, if required, by the Engineer-in-Charge, furnish manufacturer's test certificate or test certificate from approved

testing laboratory to establish that the material procured by the contractor to be used in the work satisfies the provisions of specifications/BIS codes relevant to the material.

- i) The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and clearance of the same before use in the work. The contractor shall provide at their own cost suitable weighing and measuring arrangements at site for checking the weight/dimensions as may be necessary for execution of work.
- j) Regarding testing of civil & electrical materials, the testing of materials shall be conducted in Government laboratories/Government colleges/IITs/NITs or from the laboratory approved by the designated authority in CPWD.
- k) The samples for tests shall be in all cases, will be selected by the Engineer-in-charge and supplied by the contractor free of cost as part of the contract. If at any time, any material so tested, fails to meet the acceptance criteria, the same shall be removed from the site of works and other materials substituted therefore, but in the absence of any specified test/acceptance criteria, the decision of the Engineer-in-charge shall be final and binding as to whether the said material or materials shall be used on the works, or forthwith removed and other material substituted.
- l) The contractor shall produce on demand from Engineer-in-charge, the manufacturers' certificates certifying that the materials conform to the technical specifications. For other materials which are ISI/ BIS marked, manufacturer's certificate shall be considered as fulfilling the mandatory test requirement. However, in case Engineer-in-charge feels that the material supplied is not of required specifications even if it is ISI/BIS approved and have manufacturers certificate, he can send the sample to the approved lab for testing.
- m) The contractor shall permit the Engineer-in-charge or his authorized representative to be present during any of or all the tests. The notification to the Engineer-in-charge that the work has been completed, the contractor shall make under the direction and in the presence of Engineer-in-charge such tests and inspections as have been specified or as the engineer-in-charge shall consider necessary to determine whether or not the full intent of requirements of the plans and specifications have been fulfilled. in case the work does not meet the full intent of the specifications it shall be rectified by the contractor at no extra cost and the contractor shall bear all the expenses for any further tests considered necessary.
- n) The contractor shall arrange for conducting the tests specified in Quality Plan in the presence of an officer, authorized by the Engineer-in-Charge. Full records of all the tests conducted shall be maintained by the contractor in the format given by Engineer-in-Charge which will be made available to the Engineer-in-Charge or to any officer authorized by him whenever required.
- o) The Department's representative shall be free to visit the manufacturer work at all reasonable times to witness and inspect the testing of furniture. It is the duty of contractor to see that all the furniture supplied are tested as per relevant IS specifications. The contractor shall furnish manufacturer test certificate for the routine test conducted on the furniture offered if necessary the contractor shall arrange to conduct the entire routine test at the manufacturer premises in presence of Engineer-in-charge or his authorized representative on receipt of material/equipment at site the contractor shall offer equipment/material for inspection and get approved before installations.

26. Testing Criteria:

- (i) The contractor shall provide at site, the testing equipment and materials for the routine field tests mentioned in the NIT.
- (ii) The frequency of mandatory field tests shall be frequency as mentioned in CPWD Specification 2019 including Correction Slips issued up to the last date of the submission of bids or relevant IS Code testing frequency, whichever is lower, until unless mentioned otherwise in the document.
- (iii) Some of the routine mandatory tests which are being done at field laboratory can also be sent to outside approved laboratory for testing. The frequency of such testing of routine mandatory tests from outside laboratory shall also be decided by Engineer-in-charge. All expenditure to be incurred for testing of samples in site lab or outside lab e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges **shall be borne by the contractor**.
- (iv) Apart from routine field tests, the tests for which facilities are not available in field laboratory shall be got tested from outside field laboratories, approved by Engineer-in-Charge (e.g. Government Institutes/IITs/NITs/Central and State Research Centers/Centrally and State Funded Laboratories etc.) or any Lab approved by competent authority in CPWD.
- (v) The frequency of outside tests of which site lab facility is available, shall be 10% of the total number of tests to be conducted as per the tender document or as decided by the Engineer-in-Charge until unless mentioned elsewhere in the document.
- (vi) All the testing charges of such tests shall be borne by the contractor.
- (vii) The Design Mix of concrete shall be got done from IIT Delhi, Delhi Technological University (DTU) Delhi, or any other lab/institute approved by Engineer in-Charge. The cost of Design Mix of Concrete shall be borne by the contractor.

27. Drawings and Documents:

- (i) The drawings accompanying the tender document are of indicative nature and issued for tendering purpose with the purpose to enable the tenderer to make an offer in line with the requirements of the Project.
- (ii) The work shall be carried out only in accordance with the drawings supplied by the Engineer in charge, and any other such drawings as may be issued during the course of the work, stamped "GOOD FOR CONSTRUCTION". The Engineer in charge may also issue certain drawings at various stages of the construction. The Contractor shall, however, ensure that only drawings marked "GOOD FOR CONSTRUCTION", and bearing the current revision number, shall be used for constructing the works. Superseded drawings shall be removed from the site immediately on issue of revised drawings.
- (iii) Department will have option to issue drawings through email or through another online portal adopted.

28. Correlation/Coordination among drawings:

The contractor shall correlate all the relevant architectural, structural and all services drawings as well as BOQ and specifications and satisfy himself that the information available is complete and unambiguous. In case of any ambiguity; Contractor shall raise the concern well in advance so that progress of the work remains unhindered. The contractor alone shall be responsible for

any loss or damage occurring by the commencement of work based on any erroneous and or incomplete information and no claim whatsoever shall be entertained on this account.

29. Method Statement:

- (i) The Contractor shall submit Method statement to Engineer-in-charge, before start of any activity. Following details shall be included in the same:
 - a) Description of Item,
 - b) Step-wise elaborate procedure to implement the same,
 - c) Pre-construction, during construction and post-construction checklist,
 - d) Tools and Equipment's to be used,
 - e) Make and Specifications of Material to be used,
 - f) Mode of Measurement, among others
- (ii) For each and every activity before start of same in particular area, checklist shall be filled and signed by the contractor's site in-charge/engineer, supervising that area (Civil as well as E&M) as well as Assistant Engineer /Assistant Executive Engineer of department of respective area.

30. Workmanship:

All the work to be executed with high quality of workmanship for all areas and activities. A stringent quality monitoring to be carried out of all the activities.

31. Sample Approval and Mock-up at site:

- (i) The concept of sample & mock-ups is to assess the performance parameters/ quality standards for any specified item in the project. The main objective of the section is to address most issues prior to construction, and to minimize disruption in the critical path of the construction program. It is elaborated as follows;
 - a) To determine whether the Contractor possesses required skill level necessary to construct the activity, assemblies or systems such that the built construction will satisfy specified requirements.
 - b) To understand the sequence of operations and discuss alternative sequencing options, if any.
 - c) To assess the standard of workmanship and aesthetics that are to be replicated throughout the project.
 - d) To recognize and resolve potential areas of conflict prior to the commencement of construction.

(ii) Sample and Mock-up:

Sample:

- a) Contractor shall submit samples of an item/material from preferred make-list for approval by Engineer-In-Charge. Before proposing any make from the said list, contractor has to ensure that the product of same is confirming to the specifications/parameters mentioned in BOQ item, technical specifications, CPWD specifications and other applicable relevant codes. Makes satisfy these parameters shall only be approved and the decision of Engineer In-Charge shall be final and binding.

- b) Contractor shall make arrangement for placing a yard room which can be used for storing indoor and outdoor samples. The samples kept in this room shall be marked, labeled and stored in an orderly manner to enable easy access at any time during the entire course of construction, up to completion.

Mock-up:

- a) Contractor has to make mockup which includes all relevant items like flooring, wall paneling, painting, toilets, water supply and sanitary installations, electrical installations and services, etc.
- b) Contractor to prepare complete mockup within four months from the date of start of work, to the satisfaction of the Engineer-in-charge.
- c) Approval of the samples/mock-up of various materials given by the Engineer-in-charge and the Architect shall not absolve the Contractor from the responsibility of replacing defective material brought on site or materials used in the work, in case they are found defective at a later date. The Contractor shall have no claim to any payment or compensation whatsoever on account of any such materials being rejected by the Engineer-in-charge.
- d) The contractor shall prepare mock up(s) at actual site of work as specified under relevant flooring and dado / cladding items, for approval of quality of workmanship and material specified. If the quality of the workmanship and the material is as per the required standards and approved by the Engineer-in- Charge, the mock up shall be allowed as part of the work and measured for payment. The mock up(s) so made shall be kept till completion of respective works for reference. Moreover, if situation warrants for Mock up outside the actual site of work for components which cannot be used in final finished building, the same shall also be paid 75% one time in relevant items of contract & it shall be taken away by contractor, considering property of the contractor after completion of activity. Any changes suggested in mock-ups later date shall not be paid again. However, for any sampling of material, nothing has to be paid to contractor. This has to be arranged by contractor on his own cost.

32. Shop Drawings:

- (i) Contractor has to prepare the shop drawings based on the intent drawings and wherever specified in the overall tender document.
- (ii) The Contractor shall prepare and submit a detailed program for the preparation and submission of the shop drawings along with integrated program chart mentioned in approved programme chart. The programme, which will be subject to the scrutiny of the Engineer-in-charge, shall be compatible with the programme for the construction works.
- (iii) After approval of the shop drawings by Engineer in charge; sampling and mock-up shall be carried out at site.
- (iv) After preparation of the mock up and its approval from Engineer in charge, the item shall be taken up for full-fledged execution.
- (v) When a shop drawing is revised, the particulars of the current revision shall be clearly marked or circled to facilitate checking. All prior revision numbers and references of drawings possibly superseded by the current issue shall also be clearly shown.
- (vi) Cost of all shop drawings, or form work drawings and details to be furnished by the Contractor shall be deemed to be included in his tendered rates for the work. Accordingly, approval to shop drawings or other fabrication drawings shall not be construed as

authorizing award of additional work and as long as these belong to common individual scheme governed by specifications for which the Contractor has already quoted.

33. Measurement of existing features or ground levels:

Where the determination for payment purposes of the quantity of any Item of work depends upon the measurement of existing features or ground level and the like, then prior to carrying out any operations which might affect such measurement, the Contractor shall first take such levels and measurement as the Engineer in charge may direct and, after the Engineer in charge has had the opportunity to check the same, they shall be certified as agreed by both the Engineer in charge and the Contractor. In the event that the Contractor fails to observe the above procedure, the Engineer in charge shall determine the quantity to be assumed for payment purposes using the best information available to him, and his decision in the matter shall be final.

34. Soil stabilization/protection:

Contractor shall take care to avoid sliding/collapsing of the sides during and after excavation work. He may use any of the suitable soil stabilization methods (if required) to prevent slide/collapse of the sides. Contractor will not be paid anything extra for the same.

35. Excavation around heritage elements and walls:

- (i) Contractor shall adopt manual excavation method while exposing original plinths of heritage elements and walls. Excavation shall be done in two parts: (i) for ascertaining the levels and (ii) after finalizing levels. Extra protection to be taken for protection of these elements and walls. Based on this condition; Contractor shall submit detailed methodology for approval before commencement of execution work.
- (ii) Contractor shall maintain and submit to Engineer in charge a proper before-after record in documents and photographs.
- (iii) No extra claim shall be entertained on account of this clause.

36. Construction Joints:

Since the water table is at shallow depth, the construction joints in raft to the extent possible shall be avoided. However, as per the methodology proposed by the agency, if the construction joints are proposed in the raft, it shall be done preferably by providing sacrificial materials such as Hy-Rib expanded metal sheets or equivalent of required thickness including making holes for accommodating reinforcement etc. Nothing extra shall be payable on this account. The agency shall ensure water tightness of joints also and in case of any seepage, the agency shall be fully responsible for the same and he should make it good at his own cost as per the methodology approved by Engineer-in-charge.

37. Dewatering:

- (i) Rate quoted for various items in schedule of quantities, shall include cost of dewatering by any means and at all stages, which may be from underground or surface water sources. No water is permitted above the bottom of the raft level during foundation/retaining wall.
- (ii) Contractor shall arrange for disposal of water through leak proof pipe line to the location as per site condition or as instructed by Engineer in charge. If necessary; connection to existing drainage line shall be carried out for disposal of water.
- (iii) No extra claim shall be entertained on account of this clause.
- (iv) De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the

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

- (v) In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.
- (vi) For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do the same at his own cost and nothing extra shall be paid except otherwise provided in the items of Schedule of Quantities. Nothing extra shall be paid for execution of work in or under water and/or liquid mud including pumping out of water as required.
- (vii) The Contractor shall make all necessary arrangements for protecting from rains, fog or likewise extreme weather conditions, the work already executed and for carrying out further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account and also no claims for hindrance shall be entertained on this account.
- (viii) In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any. Further, no claims for hindrance shall be entertained on this account.

38. Recesses, Holes, Openings, etc.:

The contractor shall leave such recesses, holes, openings, etc. as shown in drawing as may be required for the electric, air-conditioning and other related works for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be payable separately by the department unless otherwise specifically mentioned and the contractor shall fix the same at the time of casting of concrete, stone work & brick work or at any similar location if required, and nothing extra shall be payable on this account.

39. Performance test:

The contractor shall give performance test of the entire installation(s) as per the specifications in the presence of the Engineer-in-charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the contractor for the test until and unless mentioned otherwise in the agreement.

40. Health, Safety & Environment:

- (i) The provisions of CPWD Safety, Health and Environment Handbook 2019, available at CPWD website, including all provisions of NBC-2016, shall be followed by the contractor

in its letter and spirit unless otherwise specified elsewhere in the Contract documents. If the Contractor fails to comply with any of the provisions of this Hand book or any other provisions as mentioned below, penalty up to Rs 5,000/- shall be imposed per day.

(ii) Information to be Provided by Contractor:

- a) Health, Safety and Environment policy
- b) A detailed Health, Safety and Environment plan.
- c) Names of the Safety personnel.
- d) Employers' liability insurance policy.
- e) Work method statements for critical operations such as lifting etc.
- f) Test Certificates for lifting gear, lifting equipment and accessories.
- g) Information related to hazardous materials used and corresponding MSDS (Materials Safety Data Sheets).
- h) Daily labour returns in the format given by the Engineer-in-charge.
- i) Copies of all Statutory Records.
- j) Copies of the Contractor Safety's reports
- k) Supervisor's reports of his findings onsite inspections.

(iii) **Safety:** CPWD Safety code as detailed out at page 63-67 of GCC 2023, shall be followed in general by the Contractor. Also following provisions applies:

- a) Minimum one Safety Officer/ Manager is required to be at site at all times.
- b) Qualifications of Safety Coordinator/ Manager should not be less than those prescribed in local regulation in building and other construction workers (regulation of employment & conditions of service) central Rules,1998.
- c) Contractor shall arrange for initial Site orientation / induction of all Workmen / Supervising personnel on 'Safety practices' before beginning of work at site. This shall include a briefing about project, safety policy, site safety rules and site facilities.
- d) Contractor shall conduct a daily toolbox talk for all workers previous to starting to work. These tool box talks should include topics related to ongoing work activities and precautions to be taken on daily activities.
- e) Contractor shall ensure participation of his site in-charge and the safety coordinator in the safety meetings arranged at intervals decided by the Engineer-in-Charge.
- f) Contractor shall also submit a Health & Safety report on monthly basis or as directed to Engineer-in-Charge.

(iv) **Contractor's Safety Engineer / Safety Officers shall:**

- a) Assist the Contractor's Construction Manager and coordinate with consultant's Safety Supervisor for the implementation of the HSE program within corresponding work groups.
- b) Get familiarized with all government, and Owner's safety and health regulations, including reports and work permits procedures.
- c) Inspect the construction area on a regular basis in order to verify appropriate

corrective actions and prepare reports to their Construction Manager.

- d) Review the SAP (Safety Action Plan) prepared by line supervisor.
 - e) Co-ordinate with supervisors and foremen periodical safety meetings and lead daily safety meetings.
 - f) Conduct safety training classes for all workers.
 - g) Participate in Tool Box Talks.
 - h) Suggest safety promotional activities.
- (v) **Personal Protective Equipment (PPEs):** The Contractor shall provide required PPEs to workmen/visitors/consultants/employer to protect against safety and/or health hazards. Primarily PPEs are required for the following protection.
- a) Head Protection (Safety helmets)
 - b) Foot Protection (Safety footwear, Gumboot, etc.)
 - c) Body Protection (High visibility clothing (waistcoat/jacket, Apron, etc.)
 - d) Personal fall protection (Full body harness, Rope-grap fall arrester, etc.)
 - e) Eye protection (Goggles, Welders glasses, etc.)
 - f) Hand protection (Gloves, finger coats, etc.)
 - g) Respiratory Protection (Nose mask, SCBAs, etc.)
 - h) Hearing protection (Ear plugs, Ear muffs, etc)
 - i) The PPEs and safety appliances provided by the Contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS). If materials conforming to BIS standards are not available, the Contractor shall procure PPE and safety appliances, as approved by the Engineer-in-charge.

Safety Helmet Colour Code	Person to use
White	CPWD/CPWD staff, Main Agencies Engineers.
Grey	All designers, Architect, Consultants etc.
Violet	Main Agencies Supervisors
Blue	All Sub-Agencies (Engineers/Supervisors)
Red	Electricians (both Contractor and sub-Contractor)
Green	Safety Professionals (Both Contractor and sub Agencies)
Orange	Security Guards/Traffic Marshals
Yellow	All workmen
White (with "Visitor" sticker)	Visitors

- j) In addition to, in case any other PPE required for any specific jobs like, welding and cutting, working at height, tunneling etc. shall also be provided to all workmen and also

ensure that all workmen use the PPEs properly while on the job. The Contractor shall not pay any cash amount in lieu to PPE to the workers/sub-Agencies and expect them to buy and use during work.

- k) The Contractor shall at all-time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the Engineer-in-charge during the inspections. It is always the duty of the Contractor to provide required PPEs for all visitors & CPWD staff. Out of this, required quantity of PPEs shall be kept always at the security post.
- l) Notwithstanding the above, the Contractor shall at their expense arrange for the safety provision as per all relevant Indian Standard Safety Codes & local bye-laws. The Contractor shall provide all facilities in connection therewith and shall also issue the identity card to his labourer.

(vi) Work at Heights:

- a) During construction of buildings/towers safety net (horizontal and vertical) shall be used by Contractor to check/control falling of any object. The Contractor/vendor shall also take the other safety measures used during construction, for e.g. Personal Protective Equipment (PPEs), safety during working at heights etc.
- b) The Contractor shall provide proper scaffolding and working platforms with handrails to work at higher elevations and Tools and loose material should not be left on the scaffolding from where they are likely to fall. Persons should use safety belts while working near open edge where it is not possible to provide hand rails.
- c) Things should not be thrown from heights and should be brought down or taken up with the help of ropes. While work is being carried on at higher elevations, warning notices should be posted below or barricade the area so as to draw the attention of persons and prevent them from coming under the falling objects.
- d) Defective scaffolding, damaged ladders, insufficient working platforms etc. shall not be permitted. Wherever necessary, light weight mobile tower scaffolds or hydraulic platforms should be used.
- e) Proper access should be available to the work spot. Nobody should jump over open area between equipment, pipes and rails etc. from where they may slip. Walking over beams, narrow pipes etc. should be prohibited.
- f) The area from where the materials are pulled up with ropes etc. should have hand railings and the person should keep firm footing. They should not lean over the handrails and should use safety belts to protect themselves from fall due to body imbalance.
- g) The Contractor should reduce the hazards associated with falling first through engineering controls and second through by having a formal fall protection program in accordance with Factories Act requirements. Contractor should Institute personal fall arrest systems, administrative controls and training when engineering controls are not feasible.
- h) The Contractor shall have the necessary fall protection equipment to safely perform the job and properly train workers in the use of fall protection equipment and supervisors (or competent personnel) shall ensure the use of fall protection equipment as required. Contractor shall obtain work permit from the Department prior to starting of activities requiring fall protection.

- i) Contractor shall use powered access safely and Protect holes and leading edges, e.g. with hand rails and toe boards.
- j) The construction waste from the height should be transferred through closed chutes.
- k) All other measures to be taken for the safety at project shall be ensured by the Contractor.
- l) It shall be deemed that rates quoted by the Contractor are inclusive of all the expenditures incurred in the safety procedures. No extra payment on this account shall be payable to Contractor.

(vii) Lighting:

- a) As the period of construction is very limited, the work is to be executed in three shifts i.e. 24/7 including holidays and therefore the contractor shall provide sufficient lighting at project site, of the right type and at the right place / location for it to be properly effective to enable the workers to effectively work during night time.
- b) Lighting ought not to introduce the risk of electric shock. Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g. flood lighting or high-pressure discharge lamps. The contractor shall ensure that luminaries should always be so placed that no person is required to work in their own shadow and that the local light for one person is not a source of glare for the others. Strongly made clamps should be available for attaching luminaries to poles and other convenient supports.
- c) Luminaries shall be robust, resistant to corrosion and rain proof especially at the point of the cable entry. The correct type of lamp for each luminary should be used and when lamps need to be replaced, it shall be in accordance with the supply voltage. Lamp holders not fitted with a lamp should be capped off. The contractor shall take every effort to illuminate the work site as per the direction of Engineer-in-charge.

(viii) Health & Sanitary:

Model Rules for protection of Health and Sanitary arrangements for workers, laid down at page 68-72 of GCC2023, shall be followed by the Contractor.

(ix) Labour Hutments:

- a) Agency has to make Labour hutments for housing the labours deployed. In general, the design of hutments will be as per standard modules for workers/labour shelters issued vide F.No. 109/SE(TAS)/Tech.Misc. /LabourHut/2019-20/409(H) dated 24.10.019 which is available on CPWD Website in circular section.
- b) The Contractor shall also establish Medical facilities at site of work and labour camp and qualified Doctors should be available at both the locations throughout the construction period.
- c) Contractor shall also establish adequate toilet facilities, bathrooms and portable Sewerage Treatment Plant (STP) at labour camp and utilize the treated water for construction as well as flushing, establish creches for children of workers at labour camp and provide services of trained teachers, supporting staff to run them.
- d) Provision of Ambulance 1 no each at site all the time and at labour camp during day time shall be made by the contractor.
- e) Tie up with reputed Hospital to provide medical help in case of emergency.

- f) Group Insurance: Contractor shall provide Group Insurance Scheme to all workers engaged in the work.

41. Environment Management and Monitoring Plan:

An Expert in Environment Management and Monitoring Planning shall be deployed at site of work. Expert, as part of technical manpower under clause 32, will promptly and fully comply with all needs of the department pertaining to safe SHE management. He will also be a part of Grievance Redressal Cell to ensure grievances reported by stakeholders with regards to environment, community health and occupational health and safety related issues arising out of the construction works are promptly addressed as relevant.

- (i) The Bidder shall submit within 15 days after award of work, a comprehensive statement of the policies and procedures to be adopted to fulfill his obligations under the contract with respect to the protection of the environment on site in particular and all relevant environmental norms in general that may be applicable directly or indirectly to the contractors work with regards to the subject project. The environmental norms that must be included in this statement shall include but not be limited to the Environmental Clearance conditions as well as conditions stipulated in Consent to Establish (CTE) from the Delhi Pollution Control Committee (DPCC).
- (ii) The contractor shall have to prepare and submit the bi-annual environment clearance compliance report/any other report mentioned in environmental clearance required to be submitted to EIA authorities. The Environmental Protection statement shall apply to the site and all task and activities in Delhi involved in execution the Contract and shall include provision for the protection of the environment at all site establishment areas, work areas and location from which the contractor obtains the fill material, rock, coarse and fine aggregate and other granular materials for the works, whether directly operated by him or not.
- (iii) The information submitted in the Environmental Protection Statement shall include sufficient detail to allow an assessment of the appropriateness and adequacy of the contractor's proposals. Diagrams should be included where necessary for clarification of the description (e.g. organizational relationships, flowcharts for waste handling, treatment and disposal, for monitoring and mitigation procedures, etc.)
- (iv) The contractor shall prepare and submit Environment Management Plan (CEMP) and get it approved from Engineer-in-charge.
- (v) The content list of the CEMP shall reflect the environmental and all the provisions related to the protection of the environment. The CEMP shall address all environmental matter relevant to the works, which shall include as a minimum, but not be limited to the following;
 - a) Contractor has to follow guideline mentioned in Environment Management Plan report submitted for obtaining Environmental Clearance.
 - b) Contractor has to follow all the guideline issued (Before and after the tender) by Ministry of Environment, Forest and Climate change, Delhi Pollution Control Board and any other authorities for Environment protection during the construction.

(vi) Protection of Environment:

- a) The contractor shall establish suitable portable type Sewerage Treatment Plant at site of work and shall use the treated water fit for construction purpose as well as for flushing. Department shall arrange permission for tapping unfiltered water/sewerage

from CPWD /NDMC lines and Contractor shall lay the pip/sewer line from tapping point to proposed STP at his own cost and shall remove that line after completion of work. In case, this arrangement is not sufficient or not viable, the water for construction purpose shall be arranged by the contractor at his own cost complying all statutory guidelines.

- b) The Contractor shall take all reasonable steps to protect the environment on and off the Site. The Contractor shall be required to follow all the rules/norms of National Green Tribunal applicable to this work.
- c) During continuance of the contract, the Contractor and his sub-agencies shall at all times, abide by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, by-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.
- d) The contractor shall comply with all the upto date preventive and protective environmental steps as stated in the MoEF and NGT guidelines. Subsequent directions issued by MOEF, NGT, CPCB, state PCB or any other appropriate Govt. authority that may have been prescribed for construction works in New Delhi, shall have to be strictly complied with by the contractor. Nothing extra shall be paid beyond the quoted rates on this account as the rates already quoted by the contractor shall be deemed to be inclusive of such provisions except for provided otherwise. An Environment Cell consisting of an Environmental Engineer and a team of one Deputy Environmental Engineers, part of technical manpower under clause 32, shall be deployed at the site. The Engineers will promptly and fully comply with all needs of the CPWD pertaining to safe SHE management. They will also be a part of Grievance Redressal Cell to ensure grievances reported by stakeholders with regards to environment, community health and occupational health and safety related issues arising out of the construction works are promptly addressed as relevant.
- e) However, Salient features of some of the major laws that are applicable are given below:
 - Water Pollution is to be prevented as per *The Water (prevention and Control of Pollution) Act, 1974* which provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health or animals or plants or of aquatic organisms.
 - Air Pollution is to be prevented as per *The Air (prevention and Control of Pollution) Act, 1981* which provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.
 - Environment is to be protected as per *The Environment (Protection) Act, 1986* with amendments which provides for the protection and improvement of

environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human being, other living creatures, plants, micro-organism and property.

- *The public Liability Insurance Act, 1991*: This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

(vii) **Special Conditions to comply directives of Hon'ble National Green Tribunal and EIA Guidance Manual:**

- a) The contractor shall not store/dump construction material or debris on metalled road.
- b) The contractor shall get prior approval from Engineer-in-Charge for the area where the construction material or debris can be stored beyond the metalled road. This area shall not cause any obstruction to the free flow of traffic/inconvenience to the pedestrians. It should be ensured by the contractor that no accidents occur on account of such permissible storage.
- c) The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/area using CGI sheets or plastic and /or other similar material to ensure that no construction material dust fly outside the plot area.
- d) The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precaution that the vehicles are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air/contaminate air.
- e) The contractor shall provide mask to every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
- f) The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relatable to dust emission.
- g) The contractor shall ensure that C&D waste is transported to the C & D Waste site only and due record shall be maintained by the contractor.
- h) The contractor shall compulsory use of wet jet in grinding and stone cutting.
- i) The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
- j) The contractor shall carry out on-Road- Inspection for black smoke generating machinery. The contractor shall use cleaner fuel.

- k) The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
- l) The contractor shall use vehicles having pollution under control certificate. The emissions can be reduced by a large extent by reducing the speed of a vehicle to 20 kmph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.
- m) The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.
- n) The paving of the path for plying of vehicles carrying construction material is more permanent solution to dust control and suitable for longer duration projects. The NIT approving authority shall carry out cost benefit ratio analysis of the same.

(viii) Air Pollution Control:

To maintain air quality conditions during episodic events of high air pollution, relevant steps under the Graded Response Action Plan (GRAP) prepared by CPCB with regards to maintaining Air Quality in Delhi, mitigation measures shall be initiated and maintained by the Contractor. Efforts will be made with regards to implementing air pollution control at site such that upwind station air quality as derived from station upwind of the site shall be lower than downwind air quality as determined from stations downwind of the site. Contractor shall provide suitable dust mitigation measures to keep the air pollution under limits using anti-smog guns and Mist spray. These shall be deployed in adequate number to cover the construction site. Nothing extra shall be payable on this account. These anti-smog guns and Mist Spray shall keep the pollution level under check, when level of PM_{2.5} in ambient air reaches 250 or more and /or level of PM₁₀ reaches 400 or more. The contractor shall also supply and install Automatic air purification System/Smog Tower including all required accessories complete, commissioning at site on approved location and as per direction of Engineer in Charge and including its operation and maintenance upto completion of project. Nothing extra shall be payable on this account. To monitor the daily Air Quality, an Air Monitor Unit (AMU) shall be installed at site by the contractor and nothing extra shall be payable on this account.

(ix) Noise monitoring and prevention:

- a) Ambient noise levels shall conform to commercial area both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
- b) Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- c) Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

(x) Environmental conditions stipulated in the Environmental Clearance of the Project

- 1) All construction and demolition debris shall be stored at the site securely during the demolition (and not dumped on the roads or open spaces outside) and are properly

disposed in accordance with the provisions of the Construction and Demolition Waste Management Rules, 2016. Further, the Contractor shall follow, inter alia, the following:

- a) The Contractor shall be responsible for collection, segregation of concrete, soil and others and storage of construction and demolition waste generated, as directed or notified by the concerned local authority in consonance with these rules.
 - b) The Contractor shall ensure that other waste (such as solid waste) does not get mixed with this waste and is stored and disposed separately.
 - c) The Contractor shall ensure that if more than 20 tons or more C & D waste is generated in one day or 300 tons in a month, same shall be segregated into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar and shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or re-modelling work and keep the concerned authorities informed regarding the relevant activities from the planning stage to the implementation stage. Nothing extra shall be payable on this account.
 - d) The Contractor shall keep the construction and demolition waste within the premise or get the waste deposited at collection center so made by the local body or handover it to the authorized processing facilities of construction and demolition waste; and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.
 - e) The Contractor shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities. The Contractor if generate more than 20 tons or more in one day or 300 tons in a month shall have to pay for the processing and disposal of construction and demolition waste generated, apart from the payment for storage, collection and transportation as per the rate fixed by the concerned local authority or any other authority designated by the State Government.
- 2) Notification GSR 94(E) dated 25.01.2018 of MoEF & CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with. Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects.
- a) No building or infrastructure project requiring Environmental Clearance shall be implemented without approved Environmental Management plan inclusive of dust mitigation measures.
 - b) No excavation of soil shall be carried out without adequate dust mitigation measures in place.
 - c) No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered.
 - d) Water sprinkling system shall be put in place.
 - e) Dust mitigation measures shall be displayed prominently at the construction site for easy public viewing.

- f) Grinding and cutting of building materials in open area shall be prohibited.
- g) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- h) No uncovered vehicles carrying construction material and waste shall be permitted.
- i) Construction and Demolition Waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site.
- j) Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. Use of low Sulphur diesel, the location of the DG sets may be decided with in consultation with State Pollution Control Board.
- k) Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to rules made under the Environment (Protection) Act, 1986. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

(xi) **Solid Waste Management:**

- a. The contractor shall propose a system for solid waste management including segregation of wet and dry waste. Contractor shall execute the system after due approval of Engineer-in-charge which includes installation of collection chambers for garbage, color coded dustbins for waste collection and segregation.
- b. Contractor shall also provide trolleys (mechanical) of adequate sizes for collection of waste and disposal of the same at dedicated place.
- c. The contractor shall also provide Bio-converter for producing compost manure from available wet waste at Labour camp

(xii) **Waste Management:**

- (a) Disposal of muck / mud during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

- (b) Any hazardous waste generated during construction phase, shall be disposed of as per applicable rules and norms with necessary approvals of the State Pollution Control Board.

(xiii) **Traffic Management:**

- a. The basic objective of the following guidelines is to lay down procedures to be adopted by contractor to ensure the safe and efficient movement of traffic and also to ensure the safety of workmen at construction sites.
- b. All construction workers should be provided with high visibility jackets with reflective tapes as most of construction activities shall be done within right-of-way of the roads. The conspicuous of workmen at all times shall be increased so as to protect them from speeding vehicular traffic.
- c. The Contractor shall provide safety helmet, safety shoe and high visibility clothing for all employee including workmen, traffic marshal and other employees who are engaged for any work under this contract as per the following requirement:

All employees of the Contractor including workmen	Traffic marshals
i) Hard hat with company Logo ii) Safety boots iii) Hi-visibility waistcoat covering upper body and meeting the following requirements as per BS EN 471:1994 a. Background in florescent orange red in colour. b. Two vertical green strips of 5cm wide on front side covering the torso at least 5cm. c. Two diagonal strips of 5 cm wide on back in an 'X' pattern covering at least 5cm d. Horizontal strips not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back. e. The bottom strip shall be at a distance of 5cm from the bottom of the vest. f. Strips must be retro reflective and	i) Hard hat with company Logo ii) Safety boots iii) Hi-visibility jacket upper body and meeting the following requirements as per BS EN 471:1994: a. Background in fluorescent orange-red in colour b. Jackets with full-length sleeves with two bands of retro reflective material, which shall be placed at the same height on the garment or those of the torso. The upper band shall encircle the upper part of the sleeves between the elbow and the shoulder: the bottom of the lower band shall not be less than 5 cm from the bottom of the sleeve. c. Two vertical green strips of 5cm wide on front side covering the torso at least 500 cm d. Two diagonal strips of 5cm wide on front side covering the torso at least 500cm e. Horizontal straight not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back. f. The bottom strip shall be at a distance of 5cm from the bottom of the vest.

<p>fluorescent</p> <p>g. Waistcoat shall have a side adjustable fit and a side and front tear away feature on vests made of nylon.</p>	<p>g. Strips must be retro reflective and florescent</p>
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- d. Wherever operations undertaken are likely to interface with public traffic, specific traffic management plans shall be drawn up and implemented by the contractor in consultation with the prior approval of local police authorities, and /or the concerned metropolitan/civil authorities as the case may be.
- e. Such traffic management plans shall include provision for traffic diversion and selection of alternative routes. If necessary, the contractor shall carry out road widening before commencement of works to accommodate the extra load. The contractor shall be responsible for getting the "Traffic Management Plan" approved from Traffic Police before taking up any construction activity on the road.
- f. The guiding principles to be adopted for safety in construction zone are to Warn the road user clearly and sufficiently in advance, provide safe and clearly marked lanes for guiding road users and marked buffer and work zones. The contractor shall provide adequate measures that control driver behaviour through construction zones.
- g. The primary traffic control devices used in work zones shall include signs, delineators, Barricades, cones, pylons, pavement markings and flashing lights, deployment of sufficient number of Marshalls on diversion roads.
- h. Regulatory signs impose legal restriction on all traffic and they are to be used only after consulting the local police and traffic authorities.
- i. Warning signs in the traffic control zone shall be utilized to warn the drivers of specific hazards that may be encountered.
- j. The contractor shall place detour signage at strategic locations and install warning signs. In order to minimize disruption of access to residences and business, the contractor shall maintain at least one entrance to a property where multiple entrance exist.
- k. A warning sign shall be installed on all secondary roads which merges with the primary road where the construction work is in progress at sufficient distance before it merges with the primary road so as to alert the road users regarding the "Construction Work in Progress".
- l. Materials hanging over/ protruded from the chassis / body of any vehicle especially during material handling shall be indicated by red indicator (red light/flag) to indicate the caution to the road users.

42. Standard Operating Procedures (SOPs) for COVID-19 or similar pandemic.

The agency shall follow all the COVID 19 or similar pandemic protocols enforced by state/central Government DDMA/NDMA/MHA/MOH&FW from time to time and the guidelines issued by

CPWD from time to time as per directions of the Engineer-in-charge and nothing extra payable on this account.

43. Sign Boards

- (i) The Contractor shall provide, erect and maintain till completion of work, a display board of size and shape as per directions of Engineer in charge and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Client/Owner, Engineer-in-charges, Structural Consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies within 30 days from issue of award letter. Nothing extra shall be payable on this account. In case of non-compliance/delay in compliance in this, a penalty @ Rs. 2000/- per day will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.
- (ii) The contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc., under various labour laws and other regulations applicable to the works, at his site office.

ADDITIONAL CONDITIONS

1. All materials obtained from Govt. stores or otherwise shall be got checked by the Engineer-in-charge or his authorized representative of the work on receipt of the same at site of work before use.
2. The Contractor has to make his own arrangement for all T & P like ladders, gohree, sutli, empty containers, brushes, and paper, kuchies etc. required for work and nothing extra shall be paid for the same.
3. Materials shall be brought to the site of work in original containers with the Manufacturers seal intact.
4. The day-to-day issue account of the materials shall be maintained by the Engineer-in-Charge or his representatives and shall be signed daily by the contractor or his authorised agent in token of receipt of the materials failing which no payment of bill shall be made to the contractor. The empty containers shall not be removed from the site of work without written orders of the Engineer-in-charge.
5. Before the commencement of work, the contractor shall prepare one sample as instructed by the Engineer-in-charge for approval of the Engineer-in-charge. After the sample is approved by the Engineer-in-Charge, the contractor shall be allowed to commence the work and the quality of work shall confirm to the approved sample.
6. Defective work/sub-standard work or work not done according to the specifications of the contract shall be liable for summary rejection & shall not be measured and paid for. This shall be without prejudice to taking any other action against the contractor in accordance with the terms & conditions of contract.
7. No payment will be made to the contractor for damage caused by rains during the execution of the works and no claim on this account will be entertained.
8. It will be the responsibility of the contractor for damage caused by rains during the execution of the works and no claim on this account will be entertained.
9. The contractor, upon award of the work, shall make sufficient arrangements for lighting the entire building, both inside and outside, to ensure smooth operation. This includes the payment of electricity charges, which are deemed to be covered within the quoted rates.. **Penalty of Rs 3000/-** per day shall be recovered for not providing the lighting arrangement.
10. The contractor shall install the weighing bridge of minimum capacity 20T or as decided by Engineer-in- charge at site to measure the quantity of dismantling material. The cost of this is deemed to be included in the quoted rates.

11. To avoid disputes later on, contractor is advised to get the measurement recorded within a week's time and shall submit his bills as per relevant clause (7) of contract. Any dispute regarding measurement including work done shall be judged within a week's time failing which measurement, certified and recorded, shall be entertained.
12. Contractor has to bring to site of work the entire quantity of lime of approved quality before the start of the work. The mixing of lime will be done in the presence of the Engineer-in-Charge or his representatives.
13. Any damage to the building, fittings of any other articles done by the Contractor or his workmen during the execution of work, shall be made good by the Contractor, failing which the same shall be made good by the Engineer-in-charge or his authorized representative at the risk and cost of the contractor.
14. All doors, windows, floors and other articles shall be protected from dust, splashes & damage. Splashes & droppings from white washing, colour washing, distempering painting etc. on walls, floors, doors and window, down take pipes/furniture shall be removed by the contractor at his own cost and the surface cleaned simultaneously after the completion of the day's work is done, without waiting for the actual completion of the other items of work of the contract. In case the Contractor fails to comply with this requirement, the Engineer-in-charge or his authorized representative shall have the right to get this work done at the risk and cost of the Contractor either departmentally or through another agency without issue of any notice to the Contractor, on his account.
15. The site shall be made available to the Contractor for execution of work in phases/parts, and the Contractor shall execute the work in the portion made available to him and the Contractor shall not claim anything extra over agreement rates, due to execution of works in phased manner.
16. No labour huts shall be allowed inside the campus of above said work. The Contractor shall arrange for the stay of labours outside the campus including transport and nothing extra shall be payable on this account.
17. The execution team shall be equipped with special training in manual crafts and possessing knowledge, skills and practical experience in respect of concrete technology and other materials appropriate to the scope, type and difficulty of the repair measures.
18. The contractor shall advise all workers working with epoxies to avoid contact with eyes and skin, inhalation of vapours, and ingestion. Necessary protective and safety equipment in the form of hand gloves, welders' goggles shall be provided by the contractor and used on site.
19. Special watertight shuttering/ formwork shall be provided for special applications involving concrete or mortar, which are more fluid than normal concrete e.g. pumpable concrete, micro concrete etc.

20. The contractor shall protect the finished items against their spoiling/ damage to finishes by suitable means such as plywood, tarpoline, plastic sheet etc. during the process of carrying out repairs in a building at his own cost. The items could include finished windows, doors, glass curtain wall or other such items. Nothing extra shall be payable to the contractor on this account.

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER-PROOFING WORKS SUBHEAD

The agreement made this..... day of (Two Thousandonly) betweenS/o (hereinafter called the GUARANTOR of the One part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part). WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated.....

And made between the GUARANTOR OF THE ONE PART AND the Government of the other part whereby the contractor inter alia undertook to render the building and structures in the said contract recited completely water and leak- proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain water and leak proof, for ten years from the date of completion of the work.

NOW THE GUARANTOR hereby guarantee that work executed by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date of completion of the work.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final and binding on Guarantor.

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

That if the guarantor fails to execute the water proofing and fails to control all kinds of leakage and seepage or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in 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 BEHALF OF THE PRESIDENT OF INDIA BY in the presence of:

1.....

2.....

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF CONSERVATION WORK SUBHEAD AND STRUCTURAL REPAIR AND REHABILITATION/ RETROFITTING SUBHEAD

The agreement made this.....day of (Two Thousand only) betweenS/o..... (hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated.....

And made between the GUARANTOR OF THE ONE PART AND the Government of the other part whereby the contractor inter alia undertook to render the work under said contract structurally stable to fulfill its intended purpose, sound, free from workmanship defects and use of only specified, certified material.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable to fulfil its intended purpose, sound, and guarantee for quality workmanship, material and finishing for ten years from the date of completion of the work & responsible for all consequences in this regard.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable to fulfil its intended purpose, sound, and guarantee for quality workmanship, material and finishing for ten years to be reckoned from the date of completion of the work.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final and binding on Guarantor.

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

IN 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 BEHALF OF THE PRESIDENT OF INDIA BY in the presence of:

1.....

2.....

Particular Specifications & Conditions for Civil Works

Phasing of Work

Phase 1 : Site Preparation and Enabling Works

Site preparation begins with clearing and securing work areas to ensure safety and accessibility. Temporary site offices, storage areas, and utility connections, including power, water, and drainage lines, are established to support on-site operations. The erection of scaffolding follows, ensuring compliance with height, stability, and load-bearing requirements. Protective netting and guardrails are installed to enhance worker safety.

Phase 2: Execution of Work

This phase marks the core of the project, with multiple activities executed systematically.

- **Demolition and Dismantling of Defective Components**

The execution begins with the controlled removal of deteriorated structural elements to prevent unintended damage to adjacent sections. Defective plaster, flooring, and later added or partition walls are dismantled as per the work scope. Concrete elements requiring reinforcement or rework are broken down systematically. While demolition progresses, preparation for woodwork restoration, including the repair of wooden doors, windows, and decorative elements, begins simultaneously. Debris generated from dismantling is transported to designated disposal areas to maintain site cleanliness and facilitate smooth workflow.

- **Waterproofing and Seepage Treatment**

Once dismantling is completed, waterproofing treatments are applied to prevent seepage and ensure the durability of structures. Waterproofing to be done as per the specification mentioned BOQ. Crack filling and leakage treatment are performed through injection grouting. Basement and terrace waterproofing are executed using cementitious or polyurethane coatings to create a water-resistant barrier. As waterproofing is applied, structural repair teams begin preparing for reinforcement and strengthening works.

- **Structural Strengthening and Reinforcement**

Structural rehabilitation follows waterproofing to restore and enhance the stability of the building. This includes repairing cracks using epoxy injections and polymer-modified mortars. Columns, beams, and foundations are strengthened using jacketing techniques. Corrosion protection is applied through anti-carbonation coatings and rust inhibitors to enhance the longevity of reinforced concrete elements. Retrofitting of critical load-bearing structures is carried out based on load assessment reports. During this phase, woodwork repairs, including sanding, treatment, and varnishing, progress parallelly to maximize efficiency.

- **Masonry and Plastering Works**

Masonry repairs commence concurrently with structural strengthening. Brickwork and stone masonry replacements are executed where necessary, restoring both functional and aesthetic integrity. Decorative stone elements are repaired, and historical masonry structures are re-pointed using appropriate techniques. Cement plaster, lime plaster, or polymer-modified coatings are applied to create a uniform finish and improve durability. Ensuring compatibility between new and existing materials is crucial to maintaining structural cohesion. As masonry work advances, parallel activities such as mixing and curing plaster materials are scheduled to maintain efficiency.

- **Surface Preparation and Pointing**

Surface preparation is carried out after masonry and plastering work to refine and strengthen external and internal surfaces. Deteriorated mortar is removed, and joints are refilled using cement-sand or lime mortar. Proper curing of pointed areas ensures the achievement of required durability. Cleaning and curing of the repaired areas are done in parallel to create a robust and uniform finish.

- **Mechanical, Electrical, and Plumbing (MEP) Works**

MEP works are executed alongside finishing and structural reinforcement activities. This includes the upgradation of electrical wiring, lighting, and distribution panels. HVAC ducts, firefighting systems, and drainage systems are installed and tested. Pressure tests on pipelines and insulation tests on electrical components are conducted to ensure safety and compliance. Waterproofing and structural strengthening works proceed simultaneously in areas where MEP installations are completed to maintain continuity in execution.

- **Flooring**

Once the primary structural repairs and waterproofing treatments are complete, flooring installation begins. Tiles, stone, and marble flooring are laid as per design specifications.

- **Painting and Finishing Works**

After flooring and major structural elements are in place, painting and finishing works are undertaken. Primer, putty, and final coats of paint are applied to walls and ceilings. Site cleaning, removal of protective coverings, and minor corrective works related to woodwork and flooring are carried out simultaneously.

- **Miscellaneous Works and Final Adjustments**

The final phase of execution includes fixing minor defects such as gaps in flooring, cracks in paint, or misaligned fixtures. The installation of fixtures, fittings, and hardware components is carried out to complete the functional aspects of the project. Cleaning, polishing, and surface protection applications are performed to maintain quality standards. Throughout this stage, documentation of completed works and final quality checks are undertaken to ensure adherence to specifications and compliance with project requirements.

It is important to note that the phases and tasks outlined are a general overview of the execution phase. The sequencing of work may be adjusted by the engineer-in-charge based on real-time site conditions and project requirements. The detailed execution phasing plan, which is attached later in this document, includes a project timeline for reference.

Phase 3: Testing and Quality Assurance

Once execution is complete, rigorous testing and quality control measures are implemented to verify the structural integrity of the retrofitted building. Non-destructive testing is carried out on concrete and steel components. Load testing is conducted on beams, slabs, and structural reinforcements to confirm their strength. Plumbing systems and waterproofed surfaces undergo leak tests to ensure water resistance. Electrical insulation tests and voltage stability checks are performed to confirm compliance with safety standards. Thermal and acoustic insulation inspections are conducted to validate adherence to energy efficiency regulations. Parallel activities during this phase include final documentation, last inspections, and necessary rectifications before handover.

1. Special Condition for Cement

- (i) The contractor shall procure PPC confirming to IS: 1489(Part-I) / OPC (In case of Self Compacting Concrete Only) confirming to IS: 8112 as per brand mentioned in List of Preferred Makes for Civil Works. PM/CPM/CE may approve change in brand of cement depending upon availability in local market from any other reputed cement manufacturer having a production capacity not less than one million tonnes per annum conforming to same grade and only with ISI mark, if warranted and requested by the contractor to Engineer-in-charge.
- (ii) The cement shall be brought at site in bulk supply of approximately 5 tonnes or as decided by the Engineer-in-Charge.
- (iii) The 1 nos. cement godown of the capacity to store a minimum of 200 bags of cement or of equivalent capacity silos shall be constructed by the contractor at site.
- (iv) 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 or his authorized representatives at any time.
- (v) 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 testing laboratories. The cost of tests shall be borne by the contractor.
- (vi) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by the conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at rate so prescribed shall be made after ensuring structural soundness and stability on the basis of testing. In case of excess consumption, no adjustment shall be made.
- (vii) 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.
- (viii) 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 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

- (ix) The cement bags shall be stacked on proper floors consisting of two layers of dry bricks laid on well consolidated earth at a level of at least one foot above ground. The stacks shall be in rows of 2 and 10 bags high with minimum of 0.6m clear. Bags should be placed horizontally continuous in each line. Actual size / shape of godown shall be as per site requirement and nothing extra shall be paid on this account. The decision of Engineer-in-charge regarding capacity shall be final.
- (x) A well-ventilated storage area with minimal humidity is ideal for preserving cement quality. To prevent exposure to rain or damp conditions, the storage space should be **completely covered** with tarpaulin sheets or waterproof material. The stacking height should be limited to **10 bags per layer** to avoid excessive pressure that could lead to breakage or lump formation. The **FIFO (First In, First Out)** method must be followed to ensure older stock is used first, minimizing the risk of cement deterioration.
- (xi) By implementing these storage practices, the quality and usability of cement are preserved, ensuring better performance in construction applications.
- (xii) The guidelines for the storage of Portland Pozzolana Cement (PPC) are detailed in the Indian Standard **IS 1489 (Part 1): 1991**. This standard emphasizes that PPC should be stored in a manner that allows easy access for proper inspection and identification, and in a suitable weather-tight building to protect it from dampness and minimize warehouse deterioration.

2. Special Condition for Reinforcement Steel

- (i) For reinforced cement concrete works, the reinforcement bars produced in the plants of SAIL, RINL, TATA, JSW & JSPL consist of grades Fe 415D, Fe 500D, Fe 500S & Fe 550D as per latest version of IS 1786 and additional requirement (e.g. Chemical Composition Requirement for Manganese and Copper, Tempered Martensite (TM) Ring Requirement, Marking Requirement and compliance of the provisions of ISO 9001:2015 and ISO 14001 :2004) as per item in BOQ.
- (ii) The contractor shall obtain manufacturer's certificate stating the process of manufacture, chemical composition and test sheet giving result of each mechanical test applicable to the material purchased and submit it to the Engineer-in-charge. Each test certificate shall indicate the number of the cast to which it applies, corresponding to the number or identification mark to be found on the material.
- (iii) Testing requirement for individual reinforcement bar diameter of Particular Grade of steel:

Tests required for Fe 415D, Fe500D, Fe500S, Fe550D grade of steel and Low alloy steel reinforcement bars:

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

1.1 Chemical Properties

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

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

1.2 Physical Properties

- (i) 0.2 percent proof stress / yield stress, minimum, N/mm².
- (ii) Ratio of Tensile Strength (Ts) to Actual Yield Strength (or 0.2 % of yield stress (Ys) of the test piece N/mm².
- (iii) Elongation, percent, Minimum, on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- (iv) Total elongation at maximum force, percentage, minimum on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- (v) Bend test and re-bend test.
- (vi) The mean area of ribs (in mm²) per unit length (in mm) above the core of the bar, projected on a plane normal to the axis of the bar.
- (vii) Pull-out testing in accordance with IS 2770 (Part 1)
- (iv) Engineer-in-charge shall get each consignment tested for both chemical composition and physical properties (including bend and re-bend test) as specified in IS : 1786 from NABL accredited laboratory or any Government laboratory.
- (v) The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- (vi) For checking nominal mass, tensile strength, bend test, re-bend test etc. Specimens of sufficient length shall be cut from each lot for each size of the bar at random.
- (vii) 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.
- (viii) The procurement and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein.
- (ix) The steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.

- (x) The steel reinforcement bars shall be brought to the site in bulk supply of 1000 tonnes or more, or as decided by the Engineer-in-Charge.
- (xi) The standard sectional weights referred to shall be as given in Table 5.4 in Para 5.3.4 in CPWD Specification 2019 Vol.-I and will be considered for conversion of length of various sizes of TMT Bars in to standard weight. Record of actual sectional weights shall also be kept dia. and 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 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 terms as **Derived Actual Weight**.
- a) **If the derived weight is less than the standard weight, then the Derived Actual Weight shall be accepted if it is within the following tolerances specified in IS:1786- 2008, otherwise whole lot will be rejected. However, deductions shall be made for the difference in derived actual weight and standard weight.**

Tolerances on Nominal Mass

S.No.	Nominal size in mm	Tolerance on the Nominal Mass, percent		
		Batch	Individual Sample*	Individual Sample for Coils only**
1	2	3	4	5
i)	Up to and including 10	±7	-8	±8
ii)	Over 10 up to and including 16	±5	-6	±6
iii)	Over 16	±3	-4	±6
* For individual sample plus tolerance is not specified.				
** For coils batch tolerance is not specified				

- b) If the derived actual weight is found more than the standard weight, then nothing shall be paid extra for the difference in derived actual weight and standard weight.

(xii) The contractor shall submit original invoices, vouchers and MTC for the total quantity of steel supplied under each consignment to be used in the work. All consignment received at the work site along with the relevant documents shall be inspected by the CPWD site staff before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer- in-Charge in respect of all the lots of steel brought by him. The original vouchers and test certificates shall be kept on record in the site office/QC lab and shall be produced for inspection as per direction of engineer in charge.

(xiii) **Reinforcement coupler/Mechanical splice:** - Reinforcement couplers that shall be supplied for this work shall confirm to Class 'L' of Indian Standard IS 16172-2014: Reinforcement Couplers for Mechanical Splices of Bars in Concrete – Specification. The nominal sizes of reinforcement couplers based on their internal diameter shall correspond to the nominal sizes of bars covered under IS 1786.

Type of Mechanical Splicing System: Mechanical Splicing System shall be based on any of the following:

- Mechanical splicing system with Parallel threaded couplers.
- Reinforcement couplers shall have adequate strength, length and internal threads as per manufacturer's design to be able to meet the performance requirements as mentioned in IS 16172-2014. All reinforcement couplers shall be finished smooth and shall be free from burrs, cracks and other manufacturing defects. The threads shall be cleanly formed and shall be free from imperfections.
- Testing of Mechanical Splicing System:

The reinforcement couplers shall meet the performance requirements as prescribed in the Indian Standard IS 16172-2014 namely:

- (a) Static Tensile Test
- (b) Slip Test
- (c) Cyclic Tensile Test
- (d) Low-Cycle Fatigue Test

The test results shall be submitted to the Engineer-in-Charge for acceptance and use of couplers before execution of work. The number of samples for each test, sampling and criteria for conformity shall be as per Annex F of IS 16172-2014.

3. Special Conditions for Lime

1.3 Material Testing in Heritage Building Restoration

1.3.1 Limestone

Limestone testing in heritage restoration assesses composition, strength, porosity, weathering resistance, and biological impact to ensure compatibility, durability, and preservation of historical structures while preventing future deterioration and mismatched materials.

1.3.1.1 Chemical Composition Test

- **Purpose:** To ensure compatibility with existing structures, preserving authenticity and structural integrity during repairs and conservation efforts.
- **Standard:**
 - **IS 1760 (Part 1): 1991** – Chemical Analysis of Limestone, Dolomite, and Allied Materials: Part 1 Determination of Loss on Ignition (First Revision)
 - **IS 1760 (Part 3): 1992** – Chemical analysis of limestone, dolomite and allied materials part 3 determination of iron oxide, alumina, calcium oxide and magnesia
 - **IS 1760 (Part 4): 1991** – Chemical Analysis of Limestone, Dolomite, and Allied Materials: Part 4 Determination of Carbon Dioxide (First Revision)
 - For comprehensive guidelines on the chemical analysis of building limes, **IS 6932 (Part I): 1973** – Methods of Tests for Building Limes: Part I Determination of Insoluble Residue, Loss on Ignition, Insoluble Matter, Silicon Dioxide, Ferric and Aluminium Oxide, Calcium Oxide, and Magnesium Oxide. This standard provides methods to assess various chemical properties of building limes, which can be relevant when working with lime-based materials in heritage structures.

1.3.1.2 Physical Properties Test

- **Purpose:** To assess strength, porosity, durability, and weathering resistance, ensuring its suitability for restoration, structural integrity, and long-term preservation of heritage buildings.
- **Standard:**
 - **IS 1124: 1974** – Method of Test for Determination of Water Absorption, Apparent Specific Gravity, and Porosity of Natural Building Stones.
 - **IS 1121 (Part 1): 1974** – Methods of Test for Determination of Strength Properties of Natural Building Stones: Part I Compressive Strength.
 - **IS 1121 (Part 2): 1974** – Methods of Test for Determination of Strength Properties of Natural Building Stones: Part II Transverse Strength.

- **IS 1121 (Part 4): 1974** – Methods of Test for Determination of Strength Properties of Natural Building Stones: Part IV Shear Strength.

1.3.1.3 Moisture Content Test

- **Purpose:** To assess the moisture content of limestone is crucial in the repair and restoration of heritage buildings, as it influences the material's durability and suitability for conservation efforts.
- **Standard:**
 - **IS 997: 1973** – Limestone and Dolomite for Glass and Ceramic Industries – Specification: This standard includes a method for determining the moisture content of limestone.
 - **Significance in Heritage Restoration:** The moisture content test of lime plaster ensures proper curing, prevents shrinkage and cracking, enhances durability, and maintains compatibility with historic materials, preserving the structural integrity of heritage buildings during restoration.

1.3.2 Lime Mortar

Lime Mortar testing ensures compatibility, strength, porosity, and durability in heritage restoration, preventing damage, assessing weathering resistance, and ensuring proper bonding with historic materials for long-term structural integrity and preservation.

1.3.2.1 Compressive Strength Test

- **Purpose:** To assess the strength of the lime mortar after it sets. The compressive strength indicates how much load the mortar can bear without crushing.
- **Standard:**
 - **IS 6932 (Part 7): 1973**, "Methods of Test for Building Limes – Part VII: Determination of Compressive and Transverse Strengths."
 - **IS 2250:1981** - APPENDIX A, determines the compressive strength.
- **Significance in Heritage Restoration:** Helps ensure that the lime mortar used can bear the weight of masonry without failing, ensuring structural integrity similar to the original construction.

1.3.2.2 Water Retentivity Test

- **Purpose:** To assess its ability to retain water, ensuring workability, proper hydration, bonding strength, and durability in heritage restoration and masonry applications.
- **Standard:**

- **IS 2250-1981** – Methods to determine water retentivity of masonry mortar.
- **Significance in Heritage Restoration:** The water retentivity test ensures lime mortar retains moisture for proper curing, enhances workability, prevents premature drying, improves bonding with masonry, and ensures long-term durability in heritage restoration projects.

1.3.2.3 Consistency Test

- **Purpose:** To determine its optimal water content, ensuring proper workability, adhesion, and ease of application for durable and effective heritage restoration and masonry work.
- **Standard:**
 - IS 2250-1981: Method to determine the consistency of masonry mortar.
- **Significance in Heritage Restoration:** The consistency test ensures proper water content in lime mortar, enhancing workability, adhesion, and durability, preventing cracks, and ensuring compatibility with historic materials for effective and long-lasting heritage restoration.

1.3.2.4 Workability Test

- **Purpose:** To assess its ease of mixing, application, adhesion, and water retention, ensuring proper bonding, durability, and compatibility in heritage restoration projects.
- **Standard:**
 - **IS 1624:1986** – Specifies methods to test the workability, and ball test for mortar.
 - **IS 6932(Part VIII)-1973** – Method of tests for building limes, Determination of workability.
- **Significance in Heritage Restoration:** Ensures that the lime mortar will not deteriorate prematurely when exposed to sulphate-rich environments, protecting the building from damage.

1.3.2.5 Setting Time and Carbonation Rate Test

- **Purpose:** To determine the time required for lime mortar to set and the rate at which it carbonates (reacts with atmospheric carbon dioxide to harden).
- **Standard:**
 - **IS 6932 (Part 11): 1983** – Methods of Tests for Building Limes: Part 11 Determination of Setting Time of Hydrated Lime.
- **Significance in Heritage Restoration:** Ensures that the lime mortar cures properly and at the expected rate, avoiding premature surface drying that could lead to cracking or poor bonding.

1.3.3 Lime Plaster

Lime Plaster testing is crucial in the restoration of heritage buildings to ensure that the plaster materials being applied are consistent with the historical fabric and perform well under environmental conditions. Lime plaster has unique properties that contribute to the breathability, flexibility, and longevity of historic structures.

1.3.3.1 Adhesion/Bond Strength Test

- **Purpose:** To measure the bond strength of lime plaster to the underlying substrate, typically masonry.
- **Standard:**
 - **IS 2394: 1984** – Code of Practice for Application of Lime Plaster Finish
 - **IS 1661: 1972** – Code of Practice for Application of Cement and Cement-Lime Plaster Finishes
- **Significance in Heritage Restoration:** Ensures that the lime plaster adheres well to the historic masonry surfaces without delaminating or cracking, especially in environments subject to temperature and moisture fluctuations.

1.3.3.2 Water Retentivity Test

- **Purpose:** To evaluate its water retention capability, ensuring workability, adequate hydration, bonding strength, and durability in heritage restoration applications.
- **Standard:**
 - **IS 2250-1981** – Methods to determine water retentivity of masonry mortar.
- **Significance in Heritage Restoration:** The water retentivity test ensures lime plaster retains moisture for proper curing, improves workability and bonding, and enhances long-term durability in heritage restoration projects.

1.3.3.3 Consistency Test

- **Purpose:** To determine its optimal water content, ensuring proper workability, adhesion, and ease of application for durable and effective heritage restoration and masonry work.
- **Standard:**
 - **IS 2250-1981:** Method to determine the consistency of masonry mortar.
- **Significance in Heritage Restoration:** The consistency test ensures proper water content in lime mortar, enhancing workability, adhesion, and durability, preventing cracks, and ensuring compatibility with historic materials for effective and long-lasting heritage restoration.

1.3.3.4 Compressive Strength Test

Correction –Nil Insertion –Nil Deletion –Nil Overwriting –Nil

- **Purpose:** To measure the strength of the lime plaster when subjected to compressive loads.
- **Standard:**
 - **IS 6932 (Part 7): 1973** – Methods of Test for Building Limes: Determination of Compressive and Transverse Strength
- **Significance in Heritage Restoration:** Provides insight into the durability and mechanical performance of the lime plaster, ensuring it can withstand the loads and stresses that will be applied to it.

1.3.3.4 *Shrinkage Test*

- **Purpose:** To measure the degree of shrinkage in lime plaster as it dries and sets, which can lead to cracking or separation from the substrate.
- **Standard:**
 - **IS 6932 (Part 8): 1973** – Methods of Test for Building Limes: Determination of Tensile and Compressive Strength
- **Significance in Heritage Restoration:** Lime plaster should shrink minimally to prevent cracks from forming on the surface. This test helps ensure the plaster mix is properly balanced to minimize shrinkage.

1.3.3.5 *Setting Time and Carbonation Rate Test*

- **Purpose:** To determine the time required for lime plaster to set and the rate at which it carbonates (reacts with atmospheric carbon dioxide to harden).
- **Standard:**
 - **IS 6932 (Part 11): 1983** – Methods of Tests for Building Limes: Part 11 Determination of Setting Time of Hydrated Lime.
- **Significance in Heritage Restoration:** Ensures that the lime plaster cures properly and at the expected rate, avoiding premature surface drying that could lead to cracking or poor bonding.

1.3.4 Lime Concrete

Lime concrete testing evaluates strength, durability, setting time, porosity, and workability, ensuring structural integrity, compatibility, and longevity in heritage restoration while preventing cracking, moisture damage, and material failure over time.

1.3.4.1 *Compressive Strength Test*

- **Purpose:** To assess its load-bearing capacity, durability, and suitability for heritage restoration, ensuring structural stability and long-term performance under applied stresses.

- Standard:
 - IS 2541:1991 – Code of practice for preparation and use of lime concrete; contains test done to assess lime concrete.
- **Significance in Heritage Restoration:** The compressive strength test of lime concrete ensures structural stability, load-bearing capacity, and durability in heritage restoration, preventing failure, assessing material performance, and ensuring compatibility with historic construction techniques.

1.3.4.2 *Transverse Strength Test*

- **Purpose:** To assess its resistance to bending forces, ensuring durability, structural stability, and compatibility with historical construction methods.
- Standard:
 - **IS 2541:1991** – Code of practice for preparation and use of lime concrete; contains test done to assess lime concrete.
- **Significance in Heritage Restoration:** The transverse strength test of lime concrete ensures resistance to bending stresses, prevents cracking, assesses durability, and ensures structural stability, making it crucial for heritage restoration and long-term preservation of historic buildings.

Conditions for Lime Mortar:

Material requirements:

Unslaked lime shall be used for preparation of mortar. Lime shall be slaked by adding clean water in it gradually and shall be allowed to mature for a minimum period of 2–3 weeks. The slaked lime shall be screened through a fine sieve to remove any lumps or impurities prior to use. Sand shall be well-graded and thoroughly washed to remove all silt, dust, and organic matter. Surkhi shall be prepared from properly burnt clay bricks and sieved to a fine powder. Marble dust or powder shall be finely ground and uniformly sieved before mixing.

Methods of Preparation of Lime Mortar

Lime mortar shall be prepared using slaked lime putty mixed with sand, surkhi, marble dust or other additives as per the agreed specification. All materials shall be proportioned by volume and dry materials shall be measured in dry state. Mixing shall be carried out either mechanically using a pan mixer with roller and blade.

Manual Preparation (Traditional Mortar Mill)

Slaked lime and dry aggregates shall be thoroughly mixed and ground on a watertight masonry platform or in a masonry-lined mortar mill. Water shall be added gradually during the grinding process to achieve a uniform paste of thick, creamy consistency. The grinding shall be carried out until a homogeneous, lump-free, and workable mix is obtained. The mortar shall be protected from drying and used fresh. If not used immediately, it shall be stored in covered masonry tanks under wet conditions, free from air contact.

Mechanical Preparation (Mortar Mill)

Lime putty and dry materials shall be mixed in a pan mixer fitted with roller and blade. The mix shall be ground for not less than 100 revolutions (single wheel) or 50 revolutions (double wheel). The mix shall be raked during grinding to ensure uniformity, especially at corners. Water shall be added gradually during mixing to form a cohesive and plastic mortar.

1.Preparatory & Supporting work for execution

Item 1.3 & 1.4 Temporary support.

All structural elements shall be properly supported under instruction of engineer-in-charge. Appropriate methods of shoring or bracing or propping shall be used to make sure that the structure

is in no danger of collapse and the work can proceed safely. These shall apply before the work begins to provide protection or stabilization until the repairs are implemented.

Item 1.7 Careful Excavation.

The work of excavation over ground by manual means around the perimeter of heritage buildings, including courtyards, shall be undertaken with extreme care and under close supervision to reveal underground features such as sewer lines, stormwater pipes, tunnels, and any other architectural or structural elements. This excavation shall exceed 30 cm in depth, 1.5 m in width, and 10 sqm in plan area, and shall be limited to a maximum depth of 2.0 meters. Prior to commencement, the contractor is required to carry out a Ground Penetrating Radar (GPR) survey at their own cost to detect and map any subsurface features in order to prevent damage during excavation. The findings of the GPR survey must be submitted to the Engineer-in-Charge and Conservation Architect for review. Only after the methodology is approved and scientific clearance is obtained, shall excavation work proceed. The area of excavation shall be clearly marked, and detailed pre-excavation documentation, including photographs and condition reports, shall be prepared. Excavation shall be carried out strictly by hand tools such as shovels, pickaxes, trowels, and brushes to ensure that buried architectural features are not disturbed or damaged.

Throughout the excavation, the process shall be executed in layers under the guidance of conservation personnel, maintaining detailed records of progress, findings, and photographic documentation. Any distress or discrepancies in the foundation walls discovered during the excavation must be reported immediately to the Engineer-in-Charge, and the work in that section must be halted until further inspection. All excavated soil shall be screened meticulously to recover any usable historical objects or artifacts, which are to be cleaned, catalogued, and deposited at designated approved storage areas as directed by the Engineer-in-Charge or Conservation Architect. Any non-recoverable or waste material shall be carefully transported and dumped at approved locations without causing environmental damage. No extra payment shall be made for GPR surveys, repair works, or damage rectification. Any accidental damage to the heritage structure or its components shall be repaired at the contractor's cost using approved materials and techniques in consultation with conservation authorities.

Upon completion of excavation and after verification and approval from the concerned authorities, the contractor shall backfill the area using original or approved soil in compacted layers to restore the ground to its previous condition. Adequate safety measures, including barricading, signage, and personal protective equipment (PPE) for workers, must be maintained throughout the execution. The

contractor shall ensure that the site is kept clean and free from debris at all times. Complete records, including survey data, daily progress logs, documentation of recovered objects, and post-completion reports, shall be submitted for final clearance. The entire operation shall be performed in strict adherence to heritage conservation standards, ensuring that no irreversible alterations or damages are made to the historic fabric of the building or its surroundings.

Item 1.8 Removal of Vegetation/Roots from Masonry in Heritage Structures.

This item pertains to the skilled, manual removal of vegetation, ficus, climbing plants, creepers, and dead root systems embedded in masonry, including dismantling of masonry wherever required and making good the same post removal. All removal activities shall be carried out without causing any damage to adjacent or supporting structural elements, especially in heritage buildings.

- **Tools & Equipment:** Hand pruners, shears, saws, knives, scrapers, trowels, spades, wire brushes
- **Chemicals:** Ammonium sulfamate crystals, commercial-grade vegetation remover, and herbicides (Glyphosates 41%, Paraquat, 2-4D Disodium Salt, Atrazine WP).

Work Methodology

1. Vegetation Removal:

- Manual removal using non-invasive tools, conducted in a phased manner ensuring minimal disruption.
- No pulling of well-established vegetation mats to avoid destabilization.
- Removal includes both above-ground vegetation and underground/deep-rooted growth.

2. Chemical Application:

- Post mechanical removal, the exposed areas shall be treated with a paste of ammonium sulfamate or vegetation remover to destroy residual roots.
- Herbicides shall be applied to leaf surfaces to block photosynthesis and prevent regrowth.

3. Masonry Restoration:

- Any dismantling necessary for root removal shall be done carefully and under supervision of a qualified conservation engineer as per the direction of engineer-in-charge.
- Rebuilding, tamping, grouting, pointing, and resetting of affected brickwork or stonework must be executed to restore integrity and match existing finishes.

4. Surface Treatment:

- Following removal, surface cleaning, repointing, and application of protective coatings (if approved) shall be undertaken to prevent moisture ingress and plant regrowth.

Item 1.9 Providing Floor Protection over Decorative Flooring

Materials

The following materials shall be used:

- 12 mm thick Polypropylene (PP) Sheets
- 8 mm Marine Plywood Boards

The floor protection system shall be provided in such a manner that it prevents scratches, stains, impact marks, and surface deterioration of the decorative flooring. It shall be capable of withstanding moisture and thermal exposure and shall resist wear due to movement of equipment and foot traffic. The system shall offer a durable, non-slip surface and shall be laid in a way that allows for easy removal and reuse without causing any damage to the underlying floor. Where applicable, the materials and method of installation shall conform requirements of the site.

Item 1.10 Earth work in excavation All kind of rock (blasting prohibited)

CPWD specifications – clause no. 2.8 shall be followed.

Rate shall be inclusive of excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out all lift and disposal of excavated rock all lead, as directed by Engineer-in charge.

The excavated rock shall be the property of the contractor and the contractor shall remove & dispose off the excavated rock away from the site as per the direction of the Engineer-in Charge.

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

Item 1.11 Carriage of Excavated/Stacked Earth by Mechanical Transport (Beyond Initial Lead of 500 m and All Lifts)

Relevant specifications shall be followed as per CPWD Specification Vol – I clause – 1.0. In the above items Measurement shall be done as per the following:

The measurement shall be loading, transporting, unloading to or from site for lead up to 5.0km beyond initial lead of 500 mm and all lifts. Rate shall be inclusive of stacking and maintaining of earth (only for surface excavated earth) as per GRIHA norms. Lead shall be measured from exit gate of site to entry gate of dumping site.

Contractor shall get the lead chart approved as per the shortest possible route to dumping yard which shall form the basis of measurement.

2. Surface Cleaning & Treatment of Walls & Floors

Item 2.5 – Cleaning of steel section.

Steel members shall be cleaned of all rust, loose paint, oil, and grease. This shall be achieved through manual wire brushing, scrapers, or sandpapering. For heavily corroded surfaces, controlled application of paint removers or flame heating shall be used as per the direction of Engineer-in-Charge.

After cleaning, the surface shall be wiped and prepared for application of primer or protective coating. Safety precautions including gloves and face protection shall be followed. The cleaning process must restore a clean, dry, and adherent surface for subsequent treatment.

Item 2.6 – Cleaning of Stone or Rendered Brick Surfaces.

Surface cleaning shall be undertaken using soft nylon or phosphor-bronze brushes and non-ionic, neutral pH cleaning agents or any appropriate approved material as per the direction of Engineer-in-Charge. Paint layers, oil, or soot deposits shall be gently removed using warm water and appropriate chemical packs. Mechanical tools may be used only as per the direction of Engineer-in-Charge and under close supervision to avoid surface erosion. Final rinsing with potable water shall be ensured. All procedures shall follow established conservation practices and shall be executed in presence of a conservation specialist.

Item 2.7 – Cleaning of Marble Stone Surfaces.

Marble surfaces shall be cleaned with neutral pH solutions such as non-ionic soaps or specific chemical agents like Mora Packs. Application shall be done using lint-free cloths, soft brushes, or sponges.

All cleaning shall be performed with extreme care to avoid scratching or staining. Residues shall be removed using clean water. The cleaned surface should resemble the original tone without over-polishing or excessive sheen. All works shall be executed under direct supervision of a conservation expert.

Item 2.8 – Paint Removal from Wooden Surfaces.

Old paint on woodwork shall be removed using an approved chemical paint remover like methylene chloride as per the direction of Engineer-in-Charge. The chemical shall be applied and allowed to react, after which it shall be gently scrubbed off with non-abrasive pads or soft brushes. Burning or aggressive scraping shall not be permitted. Post-cleaning, the surface shall be neutralized, wiped dry, and prepared for any further treatment as per the direction of Engineer-in-Charge. Works shall be executed with care to preserve historic detailing and grain patterns in the wood.

3. Structural Repair

Item 3.3 – Application of Epoxy-Based Corrosion Protection Coating on Reinforcement

The contractor shall apply an epoxy-based, two-component corrosion protection coating to cleaned reinforcement surfaces to inhibit corrosion and enhance long-term durability of embedded steel within structural repairs. This material shall be suitable for structural-grade reinforcement and conform to international protective coating standards.

The steel substrate shall be free from rust, loose scales, oil, grease, coatings, laitance, and any surface contamination. Surface preparation shall be done by blast cleaning the steel to Sa 2.5 as per EN ISO 12944, Part 4. Where abrasive blasting is not feasible, a rust remover followed by high-pressure water jetting may be used to achieve an equivalent rust-free surface finish. The cleaned surface shall be dry and dust-free before coating.

Mixing of the two-component system shall be performed using a slow-speed electric paddle mixer (300–400 rpm). Part A (resin) shall be stirred first until a uniform color is achieved. Then, Part B (hardener) shall be added to Part A, and the mixture shall be stirred for at least two minutes. To ensure complete homogenization, the mixed batch shall be transferred to a clean container and

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

remixed for an additional minute. During mixing, the sides and bottom of the container shall be scraped to incorporate any unmixed material.

Application shall be carried out using a soft-bristle brush for precision or an airless spray machine for uniform, large-area coverage. The contractor shall apply 1–2 coats depending on site conditions and as approved by the Engineer-in-charge. Each coat shall be applied evenly, ensuring full coverage of all exposed surfaces of the rebar. Care shall be taken to avoid over-application or pooling of material.

The coating shall be allowed to cure as per manufacturer's Specification prior to the placement of subsequent repair materials. All activities shall comply with safety protocols and proper ventilation shall be ensured when working in enclosed spaces.

Item 3.4 – Corrosion Protection of Unexposed Reinforcement

The contractor shall apply a corrosion inhibitor coating to protect embedded or inaccessible reinforcement from ongoing corrosion.

The surface shall be cleaned of any moisture, grease, or dust. A migratory corrosion inhibitor (MCI) shall be applied in two coats using a brush or roller. The coats shall be applied with 4–6 hours between them. Treated areas shall not be disturbed during drying. The coating shall penetrate up to 40 mm depending on substrate porosity and shall be UV resistant.

Item 3.5 – Epoxy-Based Chemical Anchoring Adhesive

Anchoring adhesive shall be used to securely fix shear connectors or dowels in structural elements. The system shall achieve the required pull-out strength without slippage.

Holes shall drill to the specified depth and diameter, using rotary percussion tools. All dust shall be removed using air blowers and stiff nylon brushes. A two-component epoxy adhesive, packed in cartridges with static mixer nozzles, shall be injected into the hole. Connectors shall be inserted while rotating slightly to ensure full encapsulation. Adequate curing time (as per manufacturer specs) shall be allowed before applying any load.

Item 3.6 & 3.7 – Carbon Laminate for Beam Strengthening

The bottom and/or sides of beams shall be reinforced with the carbon laminate to strengthen the beam bottom as per the direction of Engineer-in-charge. The CFRP plates shall be pultruded laminates with a fiber content of not less than 68%, tensile strength ≥ 3100 MPa, modulus of elasticity

≥ 165 GPa, and ultimate elongation $\geq 1.8\%$. These laminates shall comply with international strengthening standards such as ETA-21/0276, FIB 14, and ACI 440-2R.

Prior to application, old concrete shall be verified to have a pull-off strength of at least 1.5 N/mm^2 (minimum) and 2.0 N/mm^2 (mean), as determined by pull-off tests conducted after surface preparation. In case the substrate fails to meet this requirement, alternate embedded reinforcement solutions shall be adopted with as per the direction of Engineer-in-charge.

Once the surface is prepared, a compatible, high-strength structural epoxy adhesive shall be mixed as per manufacturer's specification and applied uniformly to both the prepared substrate and the carbon laminate. The laminate shall be cut to the required length using suitable cutting tools and pressed into place manually. A specialized roller shall be used to eliminate air voids and ensure full bonding.

Where required, voids, undulations, or uneven surfaces shall be repaired using a high-strength epoxy mortar before adhesive application. Surface preparation, bonding, and laminate installation shall be done in dry conditions, and ambient temperature and humidity shall be monitored to ensure compliance with technical specifications.

Item 3.8 – Epoxy Bonding Agent for Old to New Concrete

A two-component epoxy bonding agent conforming to ASTM C881 Type II, Grade 2, Class B & C or EN 1504-4 shall be applied to ensure monolithic bonding between old and new concrete.

The surface shall be clean and slightly damp. After mixing the two epoxy components as per manufacturer specification, the product shall be applied uniformly using a brush or roller. The new concrete or mortar shall be placed while the epoxy remains sticky.

Item 3.9 – Polymer Modified Patch Repair Mortar

The patch repair mortar shall be a pre-packed, polymer-modified, dual shrinkage-compensated mortar with compressive strength $\geq 45 \text{ N/mm}^2$ (ASTM C109) at 28 days.

After surface preparation (cleaning, removal of loose particles), the contractor shall apply the mortar in layers of up to 25 mm. Deeper repairs shall be done in multiple layers. Bond coat shall be applied prior to mortar if required. Curing shall be done as per manufacturer's specification.

Item 3.10 – Micro-Concrete for Large Volume Repairs

The contractor shall use a free-flowing, self-compacting, chloride-free, shrinkage-compensated micro-concrete with compressive strength $\geq 45 \text{ N/mm}^2$.

The repair cavity shall be cleaned and pre-wetted. Formwork shall be sealed to prevent leakage. Micro-concrete shall be prepared as per manufacturer's specification and poured or pumped into place. Proper curing of minimum 7 days shall be ensured, and acceptance shall be based on soundness check via tapping.

Item 3.12 – High-Pressure Cement Grouting with Expanding Admixture

The contractor shall fill internal voids and honeycombing using high-pressure injection of a cementitious grout admixed with aluminium-free expanding grout fluidifier (5% by weight of cement).

Holes shall be drilled, and nipples fixed for pressure grouting. Grout with w/p ratio between 0.28 to 0.36 shall be injected using a suitable pump. Pressure and flow shall be monitored continuously. Grouting shall continue until refusal. After setting, nipples shall be cut and sealed.

Item 3.13 – Carbon Fiber Wrapping for Structural Strengthening (400 GSM)

CFRP unidirectional wrap with tensile strength $\geq 4900 \text{ N/mm}^2$ and E-modulus $\geq 240000 \text{ N/mm}^2$ shall be used for wrapping structural elements to enhance flexural/tensile capacity. The wrap shall be 400 GSM with a nominal thickness of $\sim 0.22 \text{ mm}$.

Surface shall be ground smooth, and all contaminants removed. Sharp corners shall be rounded. A primer coat shall be applied, followed by high-strength epoxy putty for filling voids. The first saturant coat shall be applied before wrapping the fibre sheet to the element. A tamping roller shall be used to eliminate air voids. After 12 hours, a second saturant coat shall be applied, and quartz sand shall be pasted for finish adhesion. Measurement shall be per square meter of CFRP applied (not surface area), including all materials, tools, and scaffolding.

5. Reinforcement cement concrete

Item 5.1 – Self-compacting Concrete (SCC) of M 40 grade - for All floor, all level, all height/ depth

Providing and laying SCC as per approved design mix, including all operations under relevant agreement items.

Note:

1. The item shall include transportation of concrete from plant to site and within site.
2. The cost of cement as per approved mix design shall be included. No adjustment shall be made for cement quantity.

Specifications:

Shall conform to CPWD Specifications Vol-I, Clause 5.8A.5.

SCC shall be made with OPC and approx. 20% cementitious materials (Fly ash, GGBFS, Alccofine, silica fume, etc.).

General:

- SCC shall be produced at a fully automatic computerized BMC plant (IS:4925), unless otherwise approved.
- Mix design shall follow EFNARC / European Guidelines, meeting all three SCC criteria (filling, passing, segregation resistance).
- Use of RMC shall require prior approval of Engineer-in-charge; no extra payment shall be admissible.
- "M" shall indicate design mix, number shall denote compressive strength in N/mm^2 at 28 days.

Ingredients:

All materials (aggregates, water, admixtures, cement) shall be sourced and verified by the contractor, and approved by Engineer-in-charge.

Mix Design & Testing:

- Design mix shall be carried out by approved Govt./IIT/NIT/state-funded laboratories.
- All associated costs shall be borne by the contractor.
- Trial mixes shall be prepared on-site and tested (7 & 28 days) as per IS:456.
- Minimum 9 cubes shall be cast for each mix and tested accordingly.

Formwork:

Formwork shall be leak-proof, stable, and designed for SCC pressure and flow.

Adequate supports and tie rods shall be provided.

Release agents shall be used to avoid staining or imperfections.

Transportation & Placement:

- SCC shall be transported by transit mixers, pumps, or buckets (min. 0.6 cum capacity).
- Pump lines shall be primed before use and kept clean.
- SCC shall be placed in one continuous pour, with synchronized delivery and placing.

6. Masonry work

Item 6.1 – In-situ Consolidation of Loose/Damaged Brick Masonry

Walls shall be made clean after removing dead/decayed plaster. Loose and damaged portions of brick masonry shall be carefully dismantled manually, ensuring no disturbance to adjoining stable sections. All reusable bricks shall be thoroughly cleaned of old mortar and soaked in clean water for at least one hour prior to reuse. Reconstruction shall be carried out using lime mortar in the ratio 1:2 (lime: coarse sand) or as specified by the Engineer-in-Charge. New bricks, wherever required, shall match the original in terms of size, texture, and appearance, and shall be approved by the Engineer-in-Charge before use. Masonry shall be rebuilt to match the original bond pattern, with uniform jointing and proper compaction. All reconstructed areas shall be cured for a minimum of 7 days.

Item 6.2 & 6.3 – Stitching of Cracks

Cracks in brick masonry identified as structural shall be stitched using appropriate elements such as stone tiles, or SS threaded rod. Horizontal grooves shall be cut across the crack path and cleaned thoroughly. Pre-sized units shall be inserted across the crack using lime mortar in the ratio 1:1:1 (lime: surkhi: fine sand) and finished flush with the surface. Stitching of cracks in brick masonry shall be carried out using either traditional stone elements or stainless steel (SS) threaded rods, depending on site conditions and structural requirements, as approved by the Engineer-in-Charge

Where stone stitching is adopted, stones of size 450 mm × 200 mm × 50 mm or as required shall be used. The masonry around the crack shall be chased and grooved carefully without damaging adjacent areas. The stone elements shall be inserted into the grooves and embedded using lime mortar in the ratio 1:1:1 (1 slaked lime: 1 surkhi: 1 coarse sand). The work shall be executed at all heights and levels as required and as directed by the Engineer-in-Charge.

Alternatively, stitching shall be executed using SS 316 threaded rods of 12 mm diameter and 2 feet in length. Each rod shall be coated with anti-corrosive paint before use. The ends of the rod shall be bent to a length of 6 inches to improve anchorage. Holes shall be drilled in the masonry and a ½ inch groove shall be made along the crack path for proper insertion. The rods shall be embedded and packed using 1:3 lime mortar (1 part lime: 3 parts fine sand) and finished flush with the surface. All work shall be completed under the supervision of the Engineer-in-Charge, ensuring compatibility with the historic fabric.

All work shall be executed under the supervision of the Engineer-in-Charge. Curing shall be undertaken for a minimum period of 7 days using water spray or wet cloths.

Item 6.4 – Providing and Fixing Ornamental Matching Brick Masonry in Cornices and Mouldings

The work shall involve the careful removal of damaged and out-of-plumb ornamental brick masonry from mouldings and cornices, ensuring that adjoining stable masonry is not disturbed. The maximum projection and depth of the reconstructed elements shall not exceed 20 cm, in accordance with conservation practice.

Matching ornamental brick masonry shall be reinstated using lime mortar prepared in the proportion of 1:1:1 (1 slaked lime: 1 sand: 1 surkhi). The bricks used shall match the original in size, texture, and appearance, and shall be laid true to line and profile.

Adequate anchorage of the new cornice band to the existing wall and adjacent masonry shall be ensured using 8 mm diameter stainless steel (SS 304/316 grade) pins. Holes shall be drilled at specified intervals to a depth and angle approved by the Engineer-in-Charge, and pins shall be fixed securely to provide structural integrity.

The surface of the cornice band shall be finished with lime plaster in the ratio of 1:2:1 (1 lime: 2 sand: 1 Sukhi), applied to the necessary thickness to replicate the original profiles and ornamental details. All carved features shall be executed using skilled craftsmanship and in strict conformity with the original design.

A sample portion of the plastered cornice, including carvings, shall be prepared and presented for approval by the Engineer-in-Charge prior to final execution. The final finish shall consist of a 1:2 lime-sand plaster, topped with a 5 mm thick coat of lime putty, ensuring smoothness and retention of intricate detailing.

Item 6.5 – Grouting of Masonry Cracks Using Lime-Based Slurry

Grouting shall be undertaken for the purpose of consolidating voids and weak cores within masonry walls without disturbing the surface fabric. The grouting process shall be carried out as per the following methodology:

1. Identification and Marking of Voids

The masonry surface shall be divided into a grid system to systematically locate internal voids. Trial holes shall be drilled using low-impact rotary tools. Voids shall be identified by the tactile response of the drill upon breakthrough into hollow spaces. All located voids shall be clearly marked on the grid and documented. Potential leakage points shall be observed and recorded in advance to control grout movement during injection.

2. Preparation of Grout Mix

Grout shall be prepared using fine lime putty and well-sieved surkhi in a ratio of 1:1, with added potable water to form a free-flowing slurry. The surkhi shall pass through a 1.4 mm (1400 micron) sieve to ensure fineness. A pozzolanic additive (such as a polymer-based fluidizer) shall be incorporated at 0.5% by weight to improve flowability and cohesion of the mix. The slurry must be homogeneous and free of lumps. All mixing equipment and containers shall be clean to prevent contamination.

3. Pre-Wetting and Grout Injection

Prior to grout injection, the internal cores of the masonry shall be saturated using clean water to aid proper adhesion and absorption. Grouting shall begin from the lowest injection point, proceeding systematically upwards.

Injection shall be performed using a manually operated low-pressure grout pump. Stainless steel or equivalent nipples/nozzles shall be inserted into pre-drilled ports for grout entry. Grout shall be pumped slowly to allow even absorption and avoid overpressure. Injection shall continue until saturation is visibly achieved, ensuring the consolidation of the internal voids and delaminated areas.

4. Post-Injection Sealing and Finishing

Following grout saturation, all active leakage points shall be sealed with a cement-based mortar to retain the grout mix within the masonry core. Sealing shall be done immediately after the grout injection at each level.

5. Supervision and Quality Control

Strict supervision by experienced conservation professionals shall be maintained throughout the process. Grouting shall be halted immediately in case of any observable structural movement, bulging of surfaces, or excessive leakage. Continuous monitoring of grout uptake, injection pressure, and wall response is mandatory to ensure controlled consolidation.

Additional Provisions:

- i. Grouting shall be limited to a maximum of 1 meter height per stage, starting from the base.
- ii. All tools, equipment, and materials used shall be subject to approval by the Engineer-in-Charge.
- iii. The contractor shall ensure safety protocols are followed during drilling and pressure operations.
- iv. The item shall be executed in accordance with applicable Indian standards and conservation guidelines.

Item 6.6 – Brick work with common burnt clay F.P.S. (non-modular) bricks of Class 7.5 in superstructure (above plinth and up to floor V) – in all shapes and sizes.

6.6.1 In Lime Mortar 1:2 (1 part lime: 2 parts sand)

Clause 6.4: Brick work with FPS bricks in cement mortar in foundation and plinth. Of CPWD specification to be followed but in lime mortar except cement mortar.

Bricks shall be F.P.S. (non-modular), Class 7.5, as per IS 1077:1992. Lime mortar shall be in 1:2 mix ratio. Water for mixing shall conform to IS 456:2000.

Brick size shall be of size matching current bricks. Mortar thickness shall be 10 mm; joint thickness shall not exceed 12 mm, as per IS 2212:1991. Overall brickwork thickness shall be as per structural design. Lime mortar shall meet the requirements of IS 2250:1981.

7. Stonework

- i. *All the stonework shall be done in lime mortar unless specified by engineer-in-charge.*
- ii. *The mortar mix for stonework shall be based on site-specific requirements and tested through mortar analysis to match the existing stonework in terms of color and texture. The mortar used shall be of equal or lesser strength than the original.*
- iii. *The anchoring systems, including cramps and dowels, shall be salvaged if in sound condition. If replacement is necessary, only stainless steel anchors of similar size and type shall be used, as approved by the conservation architect or engineer-in-charge.*
- iv. *Stones used for repairs or replacements shall be approved by the conservation architect, with the type and source confirmed to match the original.*
- v. *Salvaged stones may be used provided they are of good quality, free from defects, and match the original stone in terms of color, texture, and strength. All mortar must be removed from salvaged stones to ensure full adhesion to new mortar.*
- vi. *Where salvaged stones are unavailable, new natural stone dressed to match the existing masonry shall be used, ensuring a close match in size, shape, texture, and color.*
- vii. *Prior to undertaking any conservation works, the original stone usage, construction details, and anchoring systems shall be documented.*
- viii. *All stones, whether new or salvaged, shall be free from weathering decay, cavities, cracks, and other defects that may affect the strength and appearance of the stonework.*

Item 7.1 Staircase Stone Block Works

7.1.1 DSR Based – Dismantling/Removal of Solid Stone Blocks

The dismantling or removal of existing solid stone blocks from the staircase shall be carried out with extreme care to avoid any damage to adjoining or supporting members. A proper support system shall be installed and approved by the Engineer-in-Charge prior to dismantling. All dismantling must

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

be manual or with non-destructive tools to avoid vibrations or structural disturbance. Any removed stones shall be inspected for reusability, cleaned of debris and mortar, and either stored safely for reuse or disposed of as directed.

7.1.2 DSR Based – Fixing of New Stone Block in Lime Mortar (1:2)

New stone blocks shall be fixed at the staircase location using lime mortar in a 1:2 ratio (1 part lime to 2 parts sand). Adequate support, propping, and cantilevering techniques shall be employed during fixing to ensure stability and bonding with the old stone. Care must be taken to finish all edges properly using lime plaster or mortar. For staircase flooring, each tread and riser must consist of a single solid piece of stone as per original design specifications. All work shall be done in accordance with the instructions and approval of the Engineer-in-Charge.

7.2 Stone Masonry Restoration Works

7.2.1 DSR Based – Removal of Chipped/Deteriorated Stone Masonry

The contractor shall remove all damaged, chipped, or deteriorated portions of existing stone masonry using non-impact tools and manual methods. This process shall include the complete removal of loose mortar, dust, and debris from joints and stone surfaces. Care must be taken to avoid any disturbance to sound masonry or adjacent structures. Cleaned areas must be inspected and approved by the Engineer-in-Charge before proceeding to re-masonry or repairs.

7.2.2 Stone Masonry with Available Hard Stone in Lime Mortar (1:2)

Reconstruction or rebuilding of stone masonry shall be done using available or approved hard stones. Stones must be thoroughly cleaned of all old mortar before reuse. The masonry shall be carried out using lime mortar in a 1:2 ratio, and proper joint thickness, alignment, and bonding must be ensured. The work shall be executed under the close supervision of the Engineer-in-Charge to match the structural and visual appearance of the original masonry.

7.2.3 Fixing of New Solid Stone Block Masonry

Where new stone blocks are to be introduced in masonry, the stone shall be of the same texture and type as existing masonry to ensure visual and material compatibility. Each stone shall be dressed to the required shape and size and laid in lime mortar (1:2) with tightly packed joints. Work may be required at various heights or difficult locations, and the contractor must make provisions for safe access, lifting, and placing. All fixing shall be completed as per the direction of the Engineer-in-Charge, maintaining the original aesthetic and structural pattern.

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

Item 7.3 & 7.4 Brick work in Ashlar Masonry

Relevant specifications shall be followed as per CPWD specification Vol – I, clause no – 7.5 except for mortar which shall be lime mortar.

Item 7.5 Removal and Replacement of Red Sandstone Door Frames & Architraves

Damaged portions shall be replaced with new decorative red sandstone carved to match the original in profile, size, and finish. A sample of the proposed stonework must be approved by the Engineer-in-charge before installation. Only the new stonework shall be measured for payment. The stone used shall match the existing in texture, color, and quality, and shall be carved and finished using traditional tools and methods.

All necessary anchoring—using stainless steel or galvanized dowels, cramps, or pins—shall be included. Bedding and jointing shall be done with lime mortar (1 lime: 2 sand), with joints finished neatly to match the existing work. Adequate support and protection shall be provided during installation, and proper curing of lime mortar ensured for 7 to 10 days.

Scaffolding, anchoring, curing, and all incidental items are deemed included in the quoted rates. The work shall be carried out by skilled masons under the supervision of the Engineer-in-charge and must integrate seamlessly with the existing heritage structure.

Item 7.6 – Providing and Fixing Glass Fiber Reinforced Plastic (FRP) Chajja

The FRP chajja shall be fabricated from unsaturated polyester resin conforming to IS: 6746, reinforced with chopped strand mat (CSM) fiberglass in accordance with IS: 11551. The thickness of the chajja shall be uniformly thick matching the original. The surface finish shall be smooth and factory-applied with a UV-resistant gel coat to withstand sunlight, rain, and ambient weather conditions without discoloration or deterioration. The chajja shall incorporate two vertical and one horizontal mild steel (MS) flats of size 50 mm × 2 mm embedded during fabrication, with each flat provided with 12 mm diameter pre-formed holes to facilitate secure anchorage. All units shall be manufactured using RTM moulding technology to achieve a void-free, dense, and dimensionally stable product.

Design and Configuration

The chajja shall be cast as a single piece with an integrated slope for effective drainage of rainwater. It shall include 50 mm wide flanges along the edges, designed for embedding into the wall during

installation to enhance structural anchorage. The design shall conform to the required size, profile, and curvature as per architectural drawings or as directed by the Engineer-in-Charge.

Installation Requirements

Prior to installation, the surface of the wall shall be cleaned of all dust, laitance, oil, or loose particles. Any unevenness or surface defects shall be corrected using mortar to ensure a level base. Holes shall be drilled in the existing wall to match the anchor holes provided in the MS flats embedded in the chajja. Fixing shall be carried out using mechanical fasteners or chemical grout-based anchorage as specified. The flanges of the chajja shall be embedded into grooves cut into the masonry or RCC surface and grouted with approved non-shrink grout. The chajja shall be aligned to ensure proper slope for drainage and securely fixed in position.

Sealing and Finishing

After anchoring, all joints between the chajja flanges and wall surface shall be sealed using a UV-resistant, weatherproof silicone sealant to prevent water ingress and ensure long-term durability. Surface junctions shall be finished neatly with matching mortar or filler, ensuring there are no visible gaps or misalignments. Any minor surface damages due to handling or installation shall be repaired using matching gel coat and colour matching the surrounding elements.

Item 7.7-7.20 Ornamental stonework chajjas handrail, brackets, jali, coping cornice ect.

Relevant specifications shall be followed as per CPWD specification Vol – I, clause no – 7.6,7.8,7.9, except for mortar which shall be lime mortar.

Replacements shall only be carried out for individual decorative elements under the most pressing circumstances, where conservation in place is not a feasible option.

Damaged or deteriorated elements shall be removed, repaired, and reinstalled to match the original design as closely as possible.

In cases where a missing element, such as a chajja, needs replacement to fulfill its intended function (e.g., protection from water or sun), the replacement element shall match adjacent similar elements.

Removing Damaged Elements:

- Mortar surrounding the damaged element shall be carefully removed by hand, avoiding damage to adjacent sound elements.

- Wedges may be inserted as needed to secure the damaged element during mortar removal.
- Damaged elements and any loose mortar behind the element shall be carefully removed.

Documentation:

- Damaged or deteriorated elements, such as chajjas, brackets, copings, and jaalis, shall be thoroughly documented, including installation systems and fixing details.
- Replication of elements shall be based on accurate documentation to ensure the new element matches the original in all respects.

Surface Preparation:

- The area receiving the replacement element shall be thoroughly cleaned of any loose materials, followed by brushing with dry brushes.

Preparation of Replacement Elements:

- An exact replica of the damaged element shall be created, matching the original element in size, design, and material.
- The replacement element shall be pre-wet with clean water before installation to ensure proper adhesion.

Anchoring System Preparation:

- Existing anchors and reinforcing systems shall be inspected for corrosion. If corrosion is found, it shall be removed and coated with a corrosion-inhibiting primer.
- Unsound anchors shall be replaced with new ones, as specified by the conservation architect or engineer-in-charge.
- Loose anchors shall be reset, and inadequate anchoring systems shall be replaced with a better mechanism, as per the specifications.

Mortar Application:

- The replacement element shall be set in place using mortar and anchors in the original position, with the voids packed with mortar.

Fixing:

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

- The element shall be gently tapped with a mallet to eliminate any voids and ensure proper adjustment and positioning.

Support:

- A suitable support system, such as wooden wedges or shores, shall be provided to exert constant pressure on the replacement element for the required duration until the mortar has set.

Tooling and Pointing:

- All mortar joints shall be raked and pointed after setting, with any excess mortar wiped away as the work progresses.

Cleaning:

- Once the mortar has thoroughly set and cured, all surrounding areas shall be cleaned of loose mortar and dirt.

Item 7.21 Plastic Removal and Replacement of Decayed Stone Surfaces

Identifying and marking out the decayed portions in the smallest possible cubical, cuboidal, or other regular geometric shape. Decayed stone shall be carefully removed using soft tools such as hard brushes, light hammer, chisel, or mild abrasive tools to avoid damaging the surrounding stone.

Drilling shall be carried out on the inner face of both the existing and replacement stones to insert SS316 stainless steel dowels of 2 mm to 4 mm diameter and 50 mm to 60 mm length (up to four numbers per joint) to ensure mechanical anchorage. The drilled faces must have rough textures to promote adhesive bonding.

A best-fit replacement stone, matching the host stone in type, color, texture, and grain, shall be provided and shaped as necessary. The replacement shall be joined using stone-compatible glue applied on both contact surfaces. Pointing, not exceeding 2 mm in width, shall be carried out using a precisely matched epoxy mortar consisting of adhesive and stone powder to ensure a seamless appearance.

All joints shall be properly supported and packed during setting to maintain alignment and bonding integrity. Curing measures and physical support shall be provided during and after application as per

the directions of the Conservation Architect. The rate shall be applicable per 1 Cudm (Cubic decimeter), counted as one unit.

Item 7.22 Plastic Repair of Small Broken and Damaged Stone Elements (up to 1 sqdm)

The damaged portions of stone shall be carefully cleaned and decayed surfaces removed to expose a firm substrate using soft tools such as brushes, light hammers, chisels, or mild abrasives. The edges of the void shall be trimmed into a regular geometric shape to facilitate a better repair patch, in line with the instructions of the Conservation Architect.

Drilling shall be done within the substrate stone to accommodate SS316 stainless steel dowels of 2 mm to 4 mm diameter and 30 mm to 50 mm length (up to two numbers per patch). These dowels will ensure anchorage of the repair material.

A repair mortar shall be prepared using a paste of glue and finely sieved stone dust of matching color and texture. This mix shall be used to fill the shaped void, reconstituting the original missing form. The mix shall be applied with care to ensure tight contact with the stone and dowels and finished flush with the adjoining surface.

The repair shall be cured and supported as needed to avoid shrinkage or detachment during setting. All measures including proper packing, surface finish, and final detailing shall be carried out as per instructions from the engineer-in-charge.

8. Woodwork

Item No. 8.5 The consolidation of woodwork using sawdust and low-viscosity polyester Resin

The consolidation of woodwork using sawdust and low-viscosity polyester resin shall be carried out to restore the structural integrity and appearance of the affected wooden elements. The sawdust used for the consolidation must be clean, dry, and free from contaminants, while the polyester resin should be of low viscosity, ensuring deep penetration into the wood fibers and compatibility with the type of wood being treated. Before application, the wood surface must be thoroughly cleaned to remove dirt, dust, oils, or any other contaminants. Any loose or decayed portions of the wood should be carefully removed prior to applying the consolidation mixture.

The sawdust and polyester resin shall be mixed in the appropriate proportions as specified by the Engineer-in-charge to form a smooth, workable paste. The mixture should be applied immediately after preparation to avoid premature setting. The wood surface must be thoroughly saturated with the sawdust and resin mixture, ensuring deep penetration into cracks, crevices, and areas of decay.

Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

Excess resin mixture should be removed, and any air bubbles eliminated to ensure a consistent and solid application.

The treated woodwork shall be allowed to cure at room temperature according to the manufacturer's instructions for the resin. Adequate ventilation should be maintained during the curing process to prevent the buildup of fumes. After the resin has fully cured, the surface shall be smoothened using sandpaper or other suitable tools. The woodwork should be finished to blend seamlessly with the surrounding surfaces, ensuring no roughness, air pockets, or visible imperfections. Finally, the completed consolidation work shall be inspected and approved by the Engineer-in-charge. Any discrepancies or issues with the process or finish must be rectified before final approval is granted.

Item No. 8.18 PU Polish

Material:

Polyurethane (PU) clear matt, glossy, or semi-gloss finish polish of approved make and shade.

Method of Application:

The polish work shall be carried out as follows:

1. Surface preparation with sandpapering of varying grades to the satisfaction of the Engineer-in-charge.
2. Application of a base coat with a compatible wooden primer.
3. Application of a stainer coat in the approved shade (for shaded polish).
4. Three subsequent coats of PU polish, with fine sandpapering between coats.

The polish shall be applied on all floors, levels, and heights as per the manufacturer's specifications, drawings, and directions from the Engineer-in-charge. A sample Shall be approved by the Engineer-in-charge before execution.

9. Flooring

Item No. 9.2 & 9.3 Epoxy Tarrazzo flooring and its repair.

1.0Material:

Epoxy Terrazzo shall be applied at a minimum thickness of 12–14 mm, then grouted and polished to achieve a gloss or matt finish as specified.

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

2.0 Tools & Equipment:

Includes forced action mixer, slow-speed mixing drill, trowels, squeegees, polishing/grinding equipment, and protective materials.

3.0 Surface Preparation:

- Area to be isolated from other trades.
- Substrate must be minimum 28 days old with <6% moisture.
- Remove contaminants (oil, paint, plaster) via degreasing and diamond grinding.
- Repairs using epoxy putty/mortar as needed.
- Protect adjacent areas with polythene sheeting and masking tape.

4.0 Demarcation Trims:

Aluminum/brass trims to be installed at terminations, movement joints, and pattern outlines, fixed with PU adhesive.

5.0 Primer Application:

Apply epoxy primer mixed mechanically, then scatter 0.4–0.8 mm quartz aggregate over the wet primer. Cure tack-free within 24 hours before next layer.

6.0 Epoxy Terrazzo Screed:

Resin and hardener mixed and added to aggregates in a forced action mixer. Screed applied to the desired thickness using a screed box and steel trowel.

7.0 Matrix Filler:

Apply filler mix with a rubber squeegee to fill gaps between aggregates. Let it cure for 3 hours before inspection and touch-ups if needed.

8.0 Grinding:

After a 24–72 hour cure, grind the surface using 20/40 grit heads to expose aggregates and level the surface.

9.0 Grouting:

Grout the surface to fill voids left by air bubbles or pop-outs from grinding.

10.0 Polishing:

After grout cures (8 hours), polish in 4–6 phases with increasingly finer diamond heads to achieve desired gloss level.

11.0 Finishing:

While not mandatory, application of a protective polish/sealer (matt/gloss) is recommended to reduce future maintenance.

12.0 Cleaning:

All tools must be cleaned with resin cleaner before the material cures.

Item No. 9.5 & 9.6 full body, homogenous, Vitrified floor tiles

Relevant specification shall be as per CPWD specification clause no – 11.16, 11.17 except full body, homogeneous, vitrified tile shall be fixed with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477 and type, color, size, thickness, pattern and finishing of vitrified tile shall be as per item description. The tiles shall be fixed with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in minimum 6 mm thickness including provision groove up to 5 mm wide with PVC spacer, abrotap etc. and grouting with epoxy grout of approved make and shade. Grouting of the groove shall be paid in relevant agreement item.

10. Finishes**Item No. 10.1 & 10.2 Lime Plastering Work****Surface Preparation**

- The masonry surface shall be cleaned of all dust, loose particles, efflorescence, oil, or grease using appropriate tools and brushes.
- If the surface is smooth, it shall be roughened using wire brushing or light hacking to improve adhesion.

- All surfaces shall be adequately dampened with clean water prior to application, ensuring the wall is moist but without standing water.

Plaster Application

- Plaster shall be applied in a single coat with a maximum thickness of 15 mm (for Item 10.1) or 12 mm (for Item 10.2), using a mason's trowel.
- The plaster shall be evenly spread and levelled using a screed or straight edge to ensure a uniform finish.
- Adequate pressure shall be applied during trowelling to ensure strong adhesion, especially at corners, edges, and interfaces with other materials.

Curing

- The plastered surface shall be allowed to set for 24 hours, followed by regular curing for a minimum of 7 to 10 days, depending on site conditions.
- Curing shall be done using gentle water spraying, avoiding over-wetting or waterlogging.
- The freshly plastered surface shall be protected from direct sunlight, rain, strong winds, and rapid drying during the curing period.

Performance Requirements

- The finished plastered surface shall be smooth, free from cracks, bulging, hollowness, or other defects.
- Any defective work shall be rectified at the contractor's cost.

Execution Standards

- The plastering work shall comply with the relevant provisions of IS 2394-1984 and other applicable codes, including IS 1661 and IS 2686.
- All work shall be carried out by experienced lime masons under the supervision of the conservation architect hired by contractor.
- Plastering shall match the texture, thickness, and appearance of the original or adjacent surfaces, as determined through documentation or site evidence.

- Any preparatory works such as dubbing out hollows or raking out joints shall be completed and allowed to dry before applying plaster.

Item No. 10.3 Lime Punning Work

The lime punning mix shall be composed of lime putty (well-slaked, screened, and pressed through muslin or fine mesh) and marble dust in the ratio of 1:1 by volume. The mix shall include natural additives such as Gur (jaggery), Bilgiri (Bael fruit), Urd (black gram paste) and compatible organic fibres of approved quality, as required. Only lime-compatible pigments in shades approved by the Engineer-in-Charge shall be used for color matching. All ingredients shall be free from impurities, and the water used for mixing and curing shall be clean and potable.

Mixing and Preparation

- The lime putty and marble dust shall be thoroughly mixed along with additives and water to achieve a fine, consistent paste.
- The mix shall be ground to a fine consistency using traditional or mechanical methods until smooth and lump-free.
- Pigments shall be added uniformly to ensure consistent color.

Surface Preparation

- The substrate surface shall be clean, smooth, and slightly damp before application.
- All loose materials, dust, grease, or efflorescence shall be completely removed using appropriate hand tools.
- If the surface is too dry, it shall be pre-wetted adequately using a fine mist sprayer to prevent suction.

Application

- Lime punning shall be applied in thin, even layers using a trowel or float to achieve a smooth finish.
- Multiple passes shall be made to build up a dense, fine surface, as per heritage standards and site conditions.

- Application shall be carried out in shade-protected conditions, avoiding direct sunlight, rain, or strong wind.

Reworking and Finishing

- The punning surface shall be reworked every alternate day for a minimum period of 10 days by light trowelling or burnishing to compact the material and enhance surface finish.
- Each reworking session shall be carried out using clean, smooth tools with minimal pressure to avoid surface damage.

Curing

- Curing shall be performed using a fine mist spray of clean water to keep the surface uniformly damp.
- The surface shall be kept moist at all times during the 10-day reworking period and beyond, for a minimum total curing period of 14 days.
- Waterlogging or over-saturation shall be avoided to prevent washout or surface damage.

Performance Requirements

- The finished lime punning surface shall be uniform, smooth, crack-free, and well-bonded to the substrate.
- The color and texture shall match the approved sample, and any areas showing signs of delamination, efflorescence, or discoloration shall be rectified at the contractor's expense.

Item No. 10.6 Pointing work

Relevant specification shall be as per CPWD specification clause no – 13.13 except the work shall be carried out in lime mortar.

Requirements

- All pointing work shall be carried out in accordance with best conservation practices and heritage guidelines.

- The pointing mortar shall be **compatible with existing masonry** in terms of strength, composition, color, and permeability.
- The mortar shall be designed as a **sacrificial layer**, weaker than the surrounding masonry to allow for future maintenance without damaging the structure.

Temporary Protection and Support

- Prior to commencement of repointing, provide all **necessary temporary supports** to ensure no displacement of masonry occurs during joint cleaning and mortar removal.
- Install suitable protection to prevent damage to **adjacent materials, surfaces, and property**, and to ensure the safety of persons working nearby.

Removal of Existing Mortar

- Existing deteriorated mortar shall be **cut and raked out by hand** using non-mechanical tools to avoid damaging masonry.
- Mortar shall be removed to a **minimum depth of 20 mm** or until sound material is reached.
- Edges of masonry shall be protected against chipping or widening of joints.
- Joints shall be **cleaned using stiff or soft bristle brushes** and, if necessary, **compressed air or low-pressure air blowing** to remove all debris and dust.

Pre-wetting of Joints

- Prior to application of new mortar, all joints shall be **prewetted** to control suction and ensure proper curing.
- Use only clean, potable water with **low-pressure garden mist sprayers** to avoid erosion of masonry or joints.
- Surfaces shall be damp but free from standing water at the time of pointing.

Application of Pointing Mortar

- Mortar shall be applied in **layers (lifts)** for joints deeper than 20 mm.
- Each layer shall be **compacted firmly** and allowed to partially set before the next layer is applied.

- The final surface finish shall match existing adjacent joints in **texture, tooling, and profile**.
- All mortar shall be **kept damp** during initial curing. Walls may be lightly misted as required to prevent premature drying.

Curing and Protection

- Pointed joints shall be **protected from direct sunlight, rain, wind, or freezing temperatures** during the curing process.
- Mortar shall be **cured slowly** to prevent cracking and promote proper bonding. Use hessian or similar breathable coverings if needed.

Cleaning and Finishing

- Upon completion, all mortar smears or residue on masonry surfaces shall be removed using **non-abrasive cleaning methods**.
- The wall surface shall be left **clean and free of excess mortar**.

11. Dismantling of Civil Items

Item No. 11.13 & 11.14 Relevant specification shall be as per CPWD specification **SUB HEAD: 15.0**

DISMANTLING AND DEMOLISHING.

13. Sanitary installations

Item No. 13.1 & 13.2 Water Closet

SCOPE

- The item pertains for providing white or colour glazed vitreous chinaware European water closet with seat and cover of size and colour as specified in the schedule or as directed by Engineer including all accessories & fixing, testing & commissioning.
- This scope, material, fixing, and rates are applicable to items listed in the Schedule of Quantities.

MATERIAL

- European W.C. shall be wash down type single or double siphonic type, floor or wall mounted

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

set with integral 'P' or 'S' Trap set & shall conform to IS 2556 (Part I & II). The trap shall have minimum water seal of 50 mm.

- b. The closet shall be of one-piece construction and shall have minimum two hole of 6.5 mm diameter for fixing closet to floor. Closet shall have integral flushing rims of self-draining type.
- c. Each WC shall be provided with 110 mm (OD) Pan Connector connecting ceramic outlet of WC to soil pipe.
- d. Each European W.C. set shall be provided with a solid plastic seat with cover in conformity to IS: 2548 Part I & II & of colour given in the schedule of quantities. They shall be made of moulded from PP heavy duty material which shall be tough and hard with high resistance to solvents and shall be free from blisters and other surface defects & shall have rubber buffers and chromium plated hinges.
- e. Optionally, European W.C. shall be with coupled cistern directly mounted on WC with single or dual flow discharge as mentioned in schedule of quantities.

FIXING

- a. The water closet pan shall be placed in position as shown in the drawing. If the pan trap is damaged during handling or fixing, it shall be replaced by the contractor at his own cost.
- b. WC shall be fixed to floor using SS or nonferrous screws. Wall hung W.C. shall be supported by C.I. floor mounted chair with 75 mm. long 6.5 mm. diameter counter sunk bolts and nuts embedded in the wall concrete using rubber or fibre washers so as not to allow any lateral displacement. The pan, soil pipe shall be jointed in 1:1 Cement Mortar with hemp yarn caulked.
- c. Joints between W.C. and flush pipe shall be made with a putty or white lead and linseed oil and caulked well or with an approved rubber joint.
- d. The gap between W.C. and floor shall be finished with white/matching cement and sand as directed.
- e. Seat and cover shall be fixed to the Pan by two corrosion resistance hinges with 65 mm shank and threaded to within 25 mm from of flange. Seat shall be fixed in level by providing the washers of rubber with nonferrous or stainless-steel washer to bolt. Plastic seat shall be so fixed that it remains stationary in vertical position without falling on the W.C.

- f. Each WC shall be fixed with concealed/exposed/coupled flushing cistern/manual flush valve/sensor faucet with required brackets, hardware & accessories.

RATES

- a. European type water closet with an integral 'P' or 'S' trap & plastic seat cover, etc.
- b. Flushing Cistern(exposed/concealed) / Flush Valve with fixing brackets (only if called in BOQ).
- c. Cast Iron Chair/ Bracket, Screws, Hardware.
- d. Jointing & fixing material.
- e. Cutting slab/ beam etc. wherever required. And making all damages good to original condition after completion of work.
- f. Painting all the metallic parts with two coats of flat oil paint over a coat of primer.
- g. Testing the entire system and rectification of defect if any.
- h. All necessary labour, material, and use of tools.

Item No. 13.3 Wash Basin

SCOPE

- a. The item pertains to for providing flat back/ under counter type, with or without pedestal white glazed vitreous china of best quality, size, shape and type specified in the Schedule of Quantities or as directed by Engineer including all accessories & fixing, testing & commissioning.

MATERIAL

- b. Wash basin shall conform to IS 2556 (Part IV) & shall be of one-piece construction.
- c. Wash basin shall be provided with single tap/ double tap holes of size 28 mm square, or 30 mm rounded.
- d. Each Wash basin shall be provided with 32mm Full Thread C.P. Waste coupling without over flow connection, 38mm C.P. Bottle Trap.
- e. Half/ full Pedestal shall be of same glazing as that of wash basin.

FIXING

- f. Wash basin shall be wall bracket mounted or half/full pedestal mounted or under counter mounted as specified in schedule of quantities or as directed by Engineer.
- g. Wash basin shall be securely fixed to wall with R.S. or C.I. brackets and clips embedded in cement concrete (1:2:4) block of 100 x 75 x 150 mm.
- h. The MS angle shall be provided with two coats of red oxide primer and two coats of synthetic enamel paint of make, brand and colour as approved by the Engineer.
- i. In case of Counter mounted, oval shape wash basins are required to be installed in the platform/ counter with fully sunk in stone top or flush on stone topping.
- j. The wall plaster on seat shall be cut to rest over the top edge of basin so as not to leave any gap for water seepage through between wall plaster and skirting of basin.
- k. The gap between wall & basin shall be finished with matching white cement.

RATES

- l. Wash basin Wall mount / under counter with / without pedestal.
- m. Brackets, Accessories & Hardware.
- n. Jointing & fixing material.
- o. Making all damage good to original condition after completion of work.
- p. Painting all the metallic parts with two coats of flat oil paint over a coat of primer.
- q. Testing the entire system and rectification of defects if any.
- r. All necessary materials, labour and use of tools.
- s. The contract rate shall be for each unit of Wash basin fixed.

Item No. 13.4 Toilet Paper Holder

As per CPWD Specification Vol.2 2009, Section: 17.1.12. Must be finished as specified in schedule of quantity

Item No. 13.5 SS Shower Drain**SCOPE**

The item includes supplying of Stainless-Steel grating of specified size including fixing in location with appropriate and durable sealant and making good the floor as per the direction of the Engineer.

MATERIAL

- a) The floor drain cover grating shall be of SS 304 Stainless Steel material with perforation or solid top, depending on the application and must be finished in brass finish.
- b) A perforated top grating shall be used for floor drains expected to receive surface water. The perforated top grating shall be free of any defects and shall have a uniform thickness.
- c) A solid top grating shall be used for such applications where in the content of the wastewater contains such foul elements which would affect the local environment. The solid cover shall have a complete sealing on the floor drain and shall be openable for cleaning as and when required.
- d) The solid top grating shall be free of any defects and shall have a uniform thickness.

FIXING

- e) SS 304 Stainless Steel grating shall be fixed in position with appropriate and durable sealant.

RATES

- f) Stainless Steel grating with perforation &/or solid cover.
- g) Fixing the grating with all required material.
- h) Making all damage good to original condition after completion of installation work.
- i) All necessary materials, labour and use of tools.

Item No. 13.6 Health Faucet**SCOPE**

The item pertains for providing chromium plated Health Faucet as specified in the schedule or as directed by Engineer including all accessories & fixing, testing & commissioning.

MATERIAL

- a) The health faucet shall be brass chromium plated or plastic or as specified in schedule of quantities. The chromium plating shall be of grade 'B' type conforming to I.S. 1068-2958 finished as specified in schedule of quantity.
- b) Health faucet shall be provided with 1 mtr long flexible PVC tube and CP brass wall hook etc.
- c) Faucet flow rate shall be 6 LPM or less @ 3.0 Bar pressure, and in conformity to latest GRIHA Building codes.

FIXING

- d) The health faucet Hook & health faucet shall be fixed in position as per drawings or as directed by Engineer.
- e) The height shall be approx. 45cm from floor level if not mentioned in the drawing.
- f) The one end of 1.0-meter-long pipe shall be connected to faucet & faucet & another end to the angle cock.

RATE

- g) Health Faucet & flexible PVC hose/tube.
- h) Accessories, Hardware, mounting hook.
- i) Jointing &fixing material.
- j) Cutting/ drilling hole– cut out in wall wherever required and making all damage good to original condition after completion of work.
- k) Painting all the metallic parts with two coats of flat oil paint over a coat of primer.
- l) Testing the entire system and rectification of defects if any.
- m) All necessary materials, labour, and use of tools.

Item No. 13.7 Liquid Soap Dispenser

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

SCOPE

Battery Operated Sensor based/ Manual Liquid Soap Dispenser shall be wall/counter mounted suitable for dispensing liquid soaps, lotions, detergents. The cover shall lock to body with concealed locking arrangement, opened only by key provided. Liquid soap dispenser body and shank shall be of high impact resistance material. The piston and spout shall be stainless steel with polyethylene container of capacity as specified in schedule of quantities.

MATERIAL & FIXING

- a) Liquid soap container body & shank shall be high impact resistant stainless-steel material. Piston & spout shall be of stainless steel with Stainless Steel container having capacity as specified in schedule of quantities & with/without battery.
- b) It shall be wall/counter mounted suitable for dispensing liquid soap, lotion, detergent, etc.
- c) Cover shall lock to body with concealed locking arrangement, only opened key be provided.

RATES

- d) Liquid soap container with dispenser.
- e) Brackets, Accessories & Hardware.
- f) Jointing & fixing material.
- g) Drilling hole in wall wherever required and making all damage good to original condition after completion of work.
- h) Testing the entire system and rectification of defects if any.
- i) All necessary materials, labour and use of tools.

Item No. 13.8 Faucet**SCOPE**

The item pertains to provide chromium plated brass finished as specified in schedule of quantity basin mixer with faucet as specified including fixing, testing & commissioning.

MATERIAL

- a) The faucet shall be 15 mm nominal size or as specified in the schedule.
- b) Faucet flow rate shall be 5 LPM or less @ 3.0Bar pressure, and in conformity to latest GRIHA Building codes.
- c) Fancy type faucet shall be of C.P. brass approved quality and shall conform to IS: 8931. Non-fancy pillar tap shall be chromium plated brass and shall conform to IS 1795.
- d) Casting of faucet shall be sound and free from laps, blow hole and pitting.
- e) External and internal surface shall be clean, smooth and free from sand and be neatly dressed.
- f) All the parts fitted to pillar tap shall be axial, parallel and cylindrical with surfaces smoothly finished.
- g) The minimum of finish weight of faucet shall not be less than 650 grams (bodyweight 250g , washer plate loose valve 150 g and back nut 40 g.
- h) Thickness of C.P coating shall not be less than service grade no.2 of IS 4827 and plating should be capable of taking high polish which shall not easily tarnish or scale.

FIXING

- a) Basin mixer with faucet shall be fixed to the pipeline as indicated in the drawing with necessary special as required or as ordered by Engineer.
- b) Jointing shall be done with white zinc, spun yarn/Teflon tape etc. A few turns of fine hemp yarn dipped in linseed oil/ Teflon tape shall be taken over the threaded ends to obtain complete water tightness.
- c) Basin mixer with faucet shall withstand and internally applied hydraulic pressure of 2 MPa (20kg/sq.cm) for period of 2 minutes during which period, it shall neither leak nor sweat. Leaky joint shall be remade to make it leak proof without any extra cost from the contractor.

RATE

- a) Basin mixer with faucet.
- b) Wall flanges, Hardware & Accessories.
- c) Jointing &fixing material.

- d) Making chases in the wall wherever required and making all damage good to original condition after completion of work.
- e) Painting all the metallic parts with two coats of flat oil paint over a coat of primer.
- f) Testing the system and rectification of defects if any.
- g) All necessary materials, labour and use of tools.

Item No. 13.9 Urinals

As per CPWD specification 2009 Vol.2 Section: 17.9.

Item No. 13.10 Divyang toilet

SCOPE

- a) The item pertains to providing & fixing Divyang toilet set with European Closet (P Trap) & wall mount wash basin & all Divyang requirements with dual flush tank, seat & lead (heavy duty) including C.I. Brackets, C.P. brass hinges, M.S. / C.I. painted brackets, 32mm brass waste Coupling, 32mm size brass bottle trap, CP brass Spatula Faucet, etc. all Internal fittings complete with S.S grab rails etc. rubber buffers, C.P nuts, bolts etc making holes in walls & floors, & finishing for ready to use. The rate includes all necessary connection charges as per product detail to the satisfaction and as directed by the Engineer. etc. as specified in schedule of quantities including fixing, testing & commissioning.
- b) These details are applicable to item numbers as mentioned in the Schedule of Quantities.

MATERIAL & FIXING

- a. Where specified in washroom facilities designed to accommodate physically handicapped, accessories should be provided as directed by the Engineer.
 - b. Floor Mount raised height Vitreous China Water Closet (S Trap) with Seat & Cover.
 - c. Vitreous China Flush Tank with dual flush fittings.
 - d. Vitreous China Wall mount Wash Basin with single hole for Spatula Faucet.
- Correction –Nil Insertion –Nil Deletion –Nil Overwriting -Nil

- e. Stainless steel grab bars, hinge rail of required size suitable for concealed or exposed mounting and non-slip gripping surface shall be provided in all washrooms to be used by physically handicapped as directed by the Engineer.
- f. Faucet shall be provided with spatula lever & shall be in chromium plated brass material conforming to the latest editions of the applicable Indian Standards as per the Codes and Standards set by the Bureau of Indian Standards.
- g. 32mm CP / PTMT waste coupling.
- h. 38mm CP / PTMT bottler trap.

RATES

- a. White Vitreous China Floor Mount EWC 'S' Trap type, White Vitreous China Wall mount type Wash Basin, 32mm Waste Coupling, 38mm Bottle Trap, Grab Bar, Hinge rail, etc.
- b. Brackets, Accessories & Hardware.
- c. Jointing & fixing material.
- d. Making all damage good to original condition after completion of installation work.
- e. Testing the entire system and rectification of defects if any.
- f. All necessary materials, labour and use of tools.

Item No. 13.11 Floor Drain with Cockroach Trap

SCOPE

The item pertains to provide Floor drain with cockroach traps including fixing, testing & commissioning.

MATERIAL & FIXING

- a. The trap shall be of SS as specified in schedule of quantities.
- b. The trap shall be provided with SS grating of size as specified in schedule of quantities.
- c. The trap shall have generally water seal not less than 32 mm.

- d. The trap shall have 150/100 mm inlet & 75/100 mm outlet.
- e. The trap shall be fixed in PCC 1:2:4, 100 mm around up to finished floor with watertight finishing & shall be firmly supported on structural floor.

RATES

- a. Cockroach floor trap with grating cover.
- b. Jointing & fixing material.
- c. Making all damage good to original condition after completion of installation work.
- d. Testing the entire system and rectification of defects if any.
- e. All necessary materials, labor and use of tools.

Item No. 13.12 Mirror

As per manufacturer recommendation/ Standard.

Item No. 13.13 Toilet Cubicle Partition Works

Material Specifications & Approval

- a. All materials, including HPL Compact Laminate sheets and SS accessories, must conform to the specifications shown in the drawings and BOQ.
- b. Samples of all items (panels, fittings, accessories) shall be submitted for consultant/engineer approval prior to installation.
- c. HPL panels shall be minimum 12mm thick, water-resistant, anti-bacterial, and meet EN 438 or equivalent standards.
- d. Stainless steel components must meet the required grades: SS 316 for support legs and SS 304 for all other accessories. Aluminum anodized profiles must be minimum 15-micron thick.

Installation Requirements

- a. Installation must follow approved shop drawings and actual site conditions.
- b. Alignment, plumb, and level must be precise, using appropriate tools.
- c. All fixtures shall be securely installed using suitable fasteners and chemical anchors where necessary.
- d. Drilling or cutting of HPL panels must be done with appropriate jigs to avoid damage.

Site Coordination & Verification

- a. Contractor shall verify site measurements before fabrication; no claims will be accepted for errors in dimensions.
- b. Coordination with other services (e.g., MEP and civil) is required to avoid clashes.

Quality Assurance

- a. All works shall be subject to stage-wise inspection and approval by the supervising consultant.
- b. A sample mock-up cubicle shall be installed and approved before final execution.
- c. All moving components (hinges, locks, knobs) must be tested for smooth and proper operation.

Item No. 13.14 Urinal Partition

- a. As per manufacturer's specification and shall be of approved make and texture.
- b. 18mm thick solid Compact Laminate (anti-bacterial) made with core of phenol resin treat papers with black colour top layer treated with special melamine resin under high pressure and temperature, which shall be resistant to heat, bacteria, water, chemical, scratch, and impact. Finished product shall be as per approved texture, shade and developed according to IS-2046 and BS-476/ 97 standards. The partition shall include necessary hardware fittings, made out of SS-316, as per manufacturer's specifications and approved by Engineer-in-charge.
- c. Hardware used for fixing shall consist of -
 - i. SS 316 right angle brackets or in full length at both side
 - ii. SS 316 Screws & P.V.C Wall Plugs

Workmanship:

- a) Partitions shall be fixed in best workman ship manner as per manufacturer's specification. Edges shall be grinded corner rounded as per drawing and as per approved sample.

Mode of Measurement and payment:

- 3.1 For payment purpose, measurement shall be per Sqm of exposed compact laminate sheet only and shall be inclusive of all material, labour, fixing with all hardware.
- 3.2 The rates quoted shall be inclusive of all necessary accessories for unit of same manufacture, supply, and installation at Site.

17. Water proofing

Item No. 17.3 Perforated Pipe with Geotextile Installation

The installation of uPVC slotted pipe with geotextile membrane shall be carried out as per the project specifications. The uPVC slotted pipe, with a diameter of 100 mm, shall conform to IS: 12818 standards. It will be wrapped with a geotextile membrane weighing 120 GSM, which shall be of an approved make. The pipe shall be installed in a sand filling between the raft and grade slab, ensuring the proper gradient and slope to effectively drain out water, as per the project drawing and under the supervision of the Engineer-in-Charge. The geotextile membrane must be securely wrapped around the pipe, ensuring no gaps or exposure, to prevent soil infiltration and maintain drainage efficiency. The pipe must be placed in the trench or designated area with the correct alignment to allow water flow. Following installation, the sand shall be carefully backfilled, ensuring the pipe remains undisturbed and securely positioned. The installation process shall be subject to inspection and approval by the Engineer-in-Charge to confirm adherence to the design and material specifications.

Item No. 17.7: Application of UV Resistant Solar Reflective cum Waterproof SRI Coating System

The Solar Reflective Index (SRI) coating shall be a UV-resistant, elastomeric formulation designed specifically for terrace waterproofing and solar reflection. The coating shall have a minimum Solar Reflective Index (SRI) value of 100–105 as per ASTM E 1980. It must possess a crack bridging ability of up to 1 mm (ASTM C 836:1995), with an elongation at break of not less than 200% (ASTM D 412:2002), and a tensile strength of at least 1.0 MPa. The system shall achieve a dry film thickness (DFT) of no less than 1.2 mm, with a material consumption rate of approximately 1.5 kg/sqm or 2 liters/sqm. The system must be applied in three coats, incorporating a synthetic reinforcing fabric between the first and second coats. The final coat shall include a protective anti-dust lacquer to ensure zero dust adherence and retention of SRI value.

The SRI coating shall be applied in three layers using spray or roller techniques. Between the first and second coats, a synthetic reinforcing fabric shall be embedded uniformly to enhance durability and crack resistance. Each coat shall be applied evenly and allowed to cure as per the manufacturer's guidelines before proceeding with the next layer. Application must be performed under suitable weather conditions, avoiding extreme heat, rain, or dusty environments.

Before the application of the SRI coating system, a compatible primer shall be uniformly applied to the prepared surface. This primer serves as the bonding interface between the substrate and the

waterproofing membrane, ensuring adhesion and long-term performance. The primer must be applied only to clean, dry, and structurally sound substrates.

The entire waterproofing and SRI coating system shall be installed exclusively by trained and authorized applicators certified by the product manufacturer. The contractor/applicator shall provide a comprehensive 10-year guarantee covering all aspects of the waterproofing system, including protection against leakage, material failure, and loss of performance. All tools, labor, materials, supervision, and quality control measures required for successful completion of the work shall be included within the scope of this item.

Item No. 17.8: HDPE membrane waterproofing

The membrane shall be applied over a smooth and prepared substrate. Concrete blinding is mandatory prior to installation. The substrate shall be cleaned to remove dust, sharp projections, or loose aggregates and shall be free from standing water to ensure proper adhesion and avoid contamination of overlaps. Surface cleaning shall be executed using compressed air or appropriate mechanical means depending on the site condition, and any sharp edges must be ground down. The membrane shall be installed with the printed coating side facing the concrete pour. Adjacent membrane rolls shall be overlapped by a minimum of 75 mm at the adhesive selvedge and heat-welded using hot air to ensure continuous bonding between sheets. Overlaps must be firmly pressed to achieve complete adhesion, and all release films shall be removed with controlled pulling actions.

Care must be taken during reinforcement tying and fixing to avoid damage or puncture of the membrane. Before concrete pouring, a full inspection shall be carried out to detect any punctures, tears, or bond failures. Any observed damage shall be repaired using approved patching procedures prior to casting concrete. The HDPE membrane shall be terminated at the side of the raft by tucking it into a 45-degree groove cut into the concrete. This groove shall be sealed using a high-performance PU sealant to ensure watertightness at the joint. The system shall continue over the kicker, vertical retaining wall base, and side as per design drawings, in compliance with BS 8102 and IS 16471:2017.

The contractor shall submit a detailed methodology statement, including illustrative sketches of the application sequence, overlaps, joint detailing, terminations, and edge conditions. The work shall commence only after the approval of this methodology by the Engineer-in-Charge. The entire waterproofing system, including materials, application, supervision, and workmanship, shall be supplied and executed by an approved applicator authorized by the membrane manufacturer. A **10-year comprehensive guarantee** covering total system performance and protection against leakage shall be jointly provided by the contractor/applicator and manufacturer upon completion.

Item No. 17.11: PU-based insulation and waterproofing system

The system shall begin with the preparation of the mother slab substrate, which shall be mechanically cleaned to remove laitance, dust, oil, coatings, curing compounds, and other contaminants. The surface shall be ground to ensure a clean, sound base suitable for adhesion. All existing cracks on the slab shall be treated by cutting V-grooves of 25 mm × 25 mm and filling with a polymer-modified cementitious mortar in a 1:3 mix, as per manufacturer's specifications. Fillets and angular haunches of 50 mm × 50 mm shall be constructed at all wall-slab junctions using polymer-modified mortar, or as specified by the waterproofing material manufacturer.

Once the surface preparation is complete, a dual-component polyurethane waterproofing coating shall be applied directly over the roof slab and concrete haunches. This base coat shall have 100% solids, an elongation capacity greater than 600%, a crack-bridging ability of up to 3 mm, a tensile strength of over 6.0 MPa, and a minimum dry film thickness (DFT) of 1.5 mm, conforming to ASTM D412. The coating shall extend 450 mm vertically up the parapet walls to ensure complete waterproofing continuity.

Following this, a spray-applied, GRIHA-certified polyurethane foam (PUF) insulation layer of average 80 mm thickness shall be applied. The foam shall be CFC and HCFC free, with a core density between 45–50 kg/m³, thermal conductivity of 0.023 W/m·K at 25°C, tensile strength exceeding 300 kPa (ASTM D1623), compressive strength exceeding 300 kPa (ASTM D1621), and a closed cell content of over 90% as per ASTM D6226/2856. The foam shall also meet Class B2 fire resistance as per DIN 4102.

Once the insulation is in place, a one-component polyurethane waterproofing topcoat shall be applied over the PU foam and extended vertically 450 mm. This coating shall have a minimum elongation of 400%, tensile strength greater than 2.0 MPa, and a minimum DFT of 1.5 mm as per ASTM D412.

After the final PU coating, a 300 gsm non-woven polyester geotextile layer shall be laid across the entire surface with a minimum overlap of 100 mm. The geotextile shall cover both horizontal and vertical areas, protecting the waterproofing system beneath and allowing for the subsequent concrete screed application.

A 100 mm thick M25-grade concrete screed shall then be applied over the geotextile, maintaining proper slope for drainage. Control joints shall be provided at a maximum grid size of 3 m × 4 m, and 50 mm × 50 mm M25-grade concrete haunches shall be constructed at slab-parapet junctions along the periphery. The screed shall be cut mechanically at the control joints, and grooves shall be filled

with a moisture-triggered, single-component polyurethane sealant immediately after saw cutting. The width of the sealant joint shall not exceed 10 mm. Screed concrete shall be paid separately under the relevant BOQ item.

The contractor shall submit a detailed methodology statement, including illustrative sketches of each layer, joint detailing, vertical termination, and transitions, for approval by the Engineer-in-Charge before commencement of work. The entire system shall be supplied by a single manufacturer and applied only by trained and approved applicators authorized by the manufacturer. Upon completion, a 10-year comprehensive performance guarantee against water leakage and system failure shall be jointly provided by the contractor/applicator and the material manufacturer.

Item No. 17.12: Podium waterproofing

The waterproofing system shall consist of a two-component, root-resistant hybrid polyurea membrane applied over a properly prepared substrate. Surface preparation shall include mechanical grinding to remove all laitance, as well as treatment of visible cracks, honeycombing, or surface irregularities using suitable putty to ensure a sound and level base. A compatible primer specific to the polyurea system shall be applied over the prepared substrate and allowed to reach a tack-free state prior to membrane application. The polyurea membrane shall have the following minimum physical properties: 100% solids by volume, tensile strength greater than 10 MPa as per ASTM D412, tear resistance of at least 50 N/mm as per ASTM D624C, and elongation greater than 400% as per ASTM D412.

All application surfaces shall be thoroughly cleaned to remove loose debris, flaking materials, standing water, oil, grease, organic growth, and any other contaminants. Concrete surfaces must be completely free of laitance, shuttering oil, curing compounds, and release agents. The hybrid polyurea coating shall be applied directly over concrete haunches of M25 grade, cast along the periphery of the mother slab and parapet wall, ensuring that the membrane extends well above the finished level of the soil overburden. This coverage is critical to ensure complete protection of the waterproofing envelope.

A suitable primer compatible with the polyurea membrane shall be uniformly applied on all prepared surfaces prior to coating application. The primer shall be allowed to cure to a tack-free condition as per manufacturer's recommendations. No polyurea application shall begin before the primer has fully set, and any areas showing dust or contamination shall be re-prepared.

All work under this item shall be executed only by approved applicators authorized by the membrane manufacturer. The complete system, including polyurea membrane, primers, protective layers, and associated components, must be installed strictly in accordance with the manufacturer's specifications. Upon completion, the contractor/applicator, along with the membrane manufacturer, shall jointly provide a 10-year composite guarantee against leakage and system failure, covering material and workmanship for the entire waterproofing system.

Item No. 17.16: Retaining Wall Treatment with Polyurea Coating

The Contractor shall be responsible for providing and applying a two-component Polyurea coating system over the retaining wall on a thoroughly prepared and cleaned surface. The surface preparation shall include mechanical grinding to remove all chipping, loose materials, laitance, and other contaminants. Cracks and honeycombing shall be treated using suitable repair methods, which will be approved by the Engineer-in-charge, based on the site conditions. Once the surface is prepared, the Polyurea coating shall be applied in two coats, achieving a minimum dry film thickness (DFT) of 1.5 mm. The application shall be carried out using a high-pressure, heated, two-component spray system capable of consistently delivering the correct pressure and heat for the appropriate hose length, ensuring proper coverage.

The Polyurea coating system used shall be a quick-setting, elastomeric, waterproof, two-component spray-applied product. The coating must meet the following minimum specifications: 100% solids by volume, a tensile strength (ASTM D412) greater than 10 MPa, tear resistance (ASTM D624C) of at least 50 N/mm, Shore A hardness (ASTM D2240) of not less than 80, an elongation (ASTM D412) greater than 400%, crack bridging ability of at least 2 mm (as per ASTM C1305), and fire resistance classified as Class E according to EN 13501-1 standards.

The Contractor shall ensure that all surfaces are cleaned thoroughly, removing debris, loose material, standing water, oil, grease, and organic growth. Concrete surfaces must be free of laitance, traces of shuttering, release oils, and curing compounds. After cleaning, the surfaces shall be ground smooth to ensure optimal adhesion. All cracks and joints shall be treated by cutting them into a V-groove shape (approximately 10 mm x 10 mm) using a mechanical cutter. These grooves shall be cleaned, filled with polymer-modified mortar, and levelled with the existing surface, then allowed to cure for 24 hours. Any bug holes shall be filled with epoxy putty, and tie rod holes shall be filled with polymer-modified mortar or non-shrink grout. A primer shall be applied according to the manufacturer's recommendations, followed by the broadcasting of dry sand onto the wet primer.

Once the primer has dried, the Polyurea coating shall be applied in two coats, using a spray machine in two alternate directions to ensure uniform coverage. The minimum overlap of 100 mm shall be maintained where the coating is applied over any HDPE membrane. The Polyurea coating shall extend at least 150 mm above the finished floor level and terminate in a 6 mm x 6 mm groove prepared in the concrete surface. In vertical applications, the Contractor shall install a minimum 25 mm thick XPS protection board of approved quality over the Polyurea coating. The protection board shall be bonded using a compatible adhesive to prevent damage during backfilling.

The total waterproofing system must be applied by a certified applicator, registered with the manufacturer, and approved by the Engineer-in-charge. The Contractor, along with the applicator and manufacturer, shall provide a composite guarantee of 10 years against leakage or failure of the waterproofing system.

The applied area of the Polyurea coating shall be measured for payment based on the approved methodology, including both horizontal and vertical surfaces, with no allowance for overlaps. The total cost shall include all materials, labor, tools, plant, wastage, and any other necessary resources required to complete the work in accordance with the specifications provided. The Contractor shall submit a methodology statement, including all relevant details and illustrative sketches, for approval by the Engineer-in-charge prior to the commencement of work.

By signing this agreement, the Contractor acknowledges their responsibility to perform the work in accordance with the specifications, ensuring quality and timely execution. The Contractor also agrees to carry out the work under the supervision of a qualified and approved applicator, as specified, and to guarantee the waterproofing system for a period of 10 years.

Item No. 18.1 & 18.2 Anti-Termite Treatment (Chemical Emulsion Injection).

To be carried out as per CPWD specifications (Clause 2.28.0 to 2.28.3), using *Imidacloprid 30.5% SC* (CIB approved, BIS & CBRI certified), diluted as per manufacturer's instructions. Measured on plinth area (Ground Floor) in sqm, as per CPWD PAR 2023.

Treatment Details (subject to site conditions and approval by Engineer-in-Charge):

- **a) Soil below grade slab:** 5 L/sqm before PCC or on filled soil above raft.
- **b) Retaining wall soil:** 7.5 L/sqm on vertical surface in full depth.
- **c) External building perimeter:** Rod at 150 mm intervals, 300 mm deep, pour 7.5 L/sqm.

- **d) Top plinth surface:** 5 L/sqm (IS:6313 Part-II-2013), applicable where no basement.
- **e) Around pipes/conduits:**
 - Inside foundation: 150 mm radius × 75 mm depth
 - Outside: 300 mm radius × 75 mm depth
- **f) Wall-floor junction:** 1 L/linear meter
- **g) Expansion joints (in contact with soil/sand):** 2 L/linear meter

Terms & Conditions:

1. Treatment shall remain effective for at least **10 years** post-completion. Defects must be rectified within 15 days of notice; failing which, rectification will be done at contractor's cost.
2. To be executed by an **approved specialized agency**. Main contractor remains fully responsible and shall submit a **10-year guarantee** on stamp paper signed by both contractor and agency.
3. **Work order copy** with rates from the specialized agency to be attached to the guarantee bond.
4. Guarantee remains valid for 10 years post-completion and binding on the contractor.
5. **Retention Clause:** 50% of this item's cost shall be withheld for 1 year post-completion. Thereafter, 5% released annually over 10 years.

Item No. 18.7. Art Conservation:

The Contractor shall undertake the cleaning and primary consolidation of painted ceiling or wall surfaces with artwork under the direct supervision of a qualified art conservator. The treatment shall be carried out using tools, equipment, and methods that are specified on-site for the identified surfaces. Prior to commencement of the treatment, the area to be treated shall be photographed to document its condition present with proper detailed report on artwork. After the treatment, photographs shall be taken again to record the results. The work shall include a thorough preliminary assessment, documentation of the process, and photographic records before, during, and after the treatment to ensure full traceability and accountability.

Surface cleaning shall be performed using soft brushes, vacuum suction, distilled water, or pH-neutral solutions to remove dust, soot, biological growth, and any previous coatings. Care shall be taken to ensure that these cleaning methods do not cause any damage to the original pigments or the integrity of the artwork. For fragile areas, consolidation shall be done using lime-based or acrylic resin-based adhesives, depending on the materials of the artwork, and cracks or voids shall be filled with compatible lime mortars mixed with stone dust or natural pigments, along with gold leaf, where required.

In cases where portions of the artwork are missing, essential reintegration shall be carried out using traditional techniques such as *tratteggio* or dotting, ensuring no overpainting or falsification of the original work. A reversible protective coating, such as natural resin or microcrystalline wax (or any other appropriate material suited to the site conditions), shall be applied to safeguard the artwork from future deterioration. An optional UV-resistant treatment may also be applied to further protect the surface.

Scaffolding necessary for the execution of the work shall be safely erected and dismantled with minimal impact on the artwork. The artwork shall be restored to its original state with the use of natural colors and gold leaf to ensure a faithful reproduction. The rate for the work shall include all costs for materials, skilled labor, tools, safety provisions, and proper documentation, all of which are essential to preserve the authenticity and integrity of the wall paintings for future generations. This rate will also cover the erection and dismantling of scaffolding as required for the safe execution of the work.

Detailed Execution Phasing.

The below mentioned IS code references and conditions shall also be referred for the work in addition to the agreement conditions and CPWD specifications. It shall be noted that the work is not limited to the reference only but also other sound practices shall be followed as found fit and directed to do so by the Engineer-in-charge.

A				
ENABLING WORKS				
S. No	Task/ Activity	Location	Task Description	IS Code Reference
1	Site Clearance and Cleaning (Site level)		Removal of unwanted material/objects from the site for ease of access & storage of building material	IS 8835: 1978- Guide for laying out and organizing building sites; IS 13028: 1991 – Code of practice for disposal of construction debris; IS 3385: 1965 – Code of practice for measurement of site clearance.
2	Site Clearance and Cleaning (Building level)		Removal of unwanted material/objects from the building for ease of access & storage of building material	
3	Material procurement		Procurement of material for Conservation works, Structural Repair and Masonry works and storage on site in a covered place	Refer Material sheet
4	Material storage		Storage of material on site in a covered place	Refer Material sheet
5	Scientific Excavation & Analysis		Excavation of soil along the perimeter of the building by doing trial trenches at various points and assessment of the condition	IS 3764: 1992 – Safety code for excavation work; IS 1200 (Part 1): 1992 – Methods of measurement of earthwork.
6	Scaffolding Installation	External first, dome & chhatri interior & exterior, then from 2nd floor to lower ground floor	Storage and erection of scaffolding on the entire external facade to access the roof level and balcony level areas	IS 2750: 1964 – Specification for steel scaffoldings; IS 4014 (Part 1): 1967; IS 4014 (Part 2): 1967; IS 3696 (Part 1 & 2): 1987 – Safety code for scaffolds and ladders; IS 11057: 1984; IS 14687: 1999 – Design and construction of falsework; IS 14665 (Part 2 to 4): 2000 – Safety in the use of lifts, escalators, and moving walks.
7	Site Protection & Safety Measures		Provision of safety net, barricading, lifts, pulley,	IS 13416 (Part 1 to 4): 1992 – Recommendations

			protection sheets/ covers, and other safety measures	for preventive measures against hazards at construction sites; IS 15883 (Part 1 to 6): 2020 – Temporary structures, including safety and stability requirements; IS 2925: 1984 – Specification for industrial safety helmets; IS 15298 (Part 1 to 4): 2016 – Safety footwear for construction workers; IS 3521: 1999 – Industrial safety belts and harnesses; IS 8519: 1977 – Selection, care, and maintenance of protective clothing; IS 9473: 2002 – Respiratory protective devices – filtering half masks to protect against particles; IS 1646: 1997 – Fire safety in buildings; IS 15652: 2006 – Guidelines for temporary structures; IS 15883 (Part 1 to 6): 2020; IS 14489: 2018 – Occupational safety and health audits
8	Structural Support	2nd Floor roof first	Provision of structural propping as support to the distressed areas	IS 14687: 1999 – Guidelines for falsework; IS 14671: 1999 – Guidelines for formwork ; IS 2750: 1964 – Specification for steel scaffolding and formwork; IS 4014 (Part 1 & 2): 1967; IS 13416 (Part 1 to 4): 1992 – Preventive safety measures at construction sites
9	Removal of Services	All floors	Careful dismantling and removal of services such as HVAC, lighting, electricals from the building	IS 4130: 1991 – Safety code for demolition of buildings; IS 8835: 1978 – Guide for laying out and organizing building sites; IS 732: 2019 – Code of practice for electrical wiring installations; IS 5216 (Part 1 & 2): 1982; IS 659: 1964 – Safety code for air conditioning systems; IS 3042: 1965 – Code of practice for dismantling and disposal of mechanical services

10	Removal of Plumbing works	All floors	Careful dismantling and removal of plumbing from the building	IS 1172: 1993 – Code of basic requirements for water supply, drainage, and sanitation; IS 1742: 1983 – Code of practice for building drainage; IS 2065: 1983 – Code of practice for water supply in buildings
11	Provision for Facilities	All floors	Providing temporary electrical and water supply points and toilet facilities while dismantling of services and civil works	Same as 9 and 10
12	Structural Assessment (Issue Identification & Monitoring)	All floors	Inspection of the building for any structural issues and installation of monitoring devices in specific areas which have cracks, sagging beams/joists, buckled walls/columns, etc.	IS 13311 (Part 1 & 2): 1992 – Non-destructive testing of concrete; IS 15988: 2013 – assessment of deteriorated reinforced concrete structures; IS 516: 1959 – Test for strength of concrete; IS 1904: 1986 – Code of practice for design and construction of foundations in soils; IS 4326: 2013 – seismic evaluation; IS 4877: 1968 – Guidelines for inspection of steel structures; IS 5249: 1992 – Method of testing for structural integrity; IS 9069: 1978 – structural behavior monitoring; IS 10262: 2019 – concrete mix design and durability assessment; IS 2212: 1991 – Code of practice for brickwork; IS 1905: 1987; IS 1597 (Part 1 & 2): 1992 ; IS 13935: 2009 – Guidelines for repair and seismic strengthening ; IS 2250: 1981 – Code of practice for preparation and use of masonry mortars; IS 1904: 1986 – Code of practice for foundation design

B. DEMOLITION & DISMANTLING WORKS				
S. No	Task/Activity	Location	Task Description	IS CODE Reference
1	De-vegetation	All floors, Dome, Chhatra	Removal of unwanted plants/grass and other biological growth from the building using various methods (manual, mechanical, chemical)	IS 14756: 2000 – Guidelines for maintenance and removal of trees, shrubs, and vegetation from construction sites; IS 9172: 1979 – Criteria for design of temporary protective works
2	Removal of steel jali/mash, grill, RS joist, channels, etc.	All floors	Careful removal of steel jali/mash, grill, RS joist, channels, etc. from roof level	IS 1200 (Part 18): 1974; IS 15916: 2010 – Guidelines for demolition of buildings; IS 800: 2007 – Code of practice for general construction in steel; IS 7215: 1974
3	Dismantling of false panels	All floors	Dismantling wooden boardings, cement asbestos or other hard board ceiling in lining of walls and partitions, or ceiling	IS 1200 (Part 18): 1974; IS 15916: 2010
4	Dismantling of aluminium/gypsum in false ceiling and openings	All floors	Dismantling of aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling	IS 3007 (Part 1 & 2): 1999 – Code of practice for laying of gypsum plasterboard ceilings and linings; IS 2095 (Part 1 to 3): 2011 – Specification for gypsum plasterboards; IS 2542 (Part 1 & 2): 1981; IS 16284: 2014 – Specification for metal ceiling systems
5	Removal of door/window	All floors	Dismantling of existing door, windows and clerestory window shutters	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 4130: 1991; IS 1003 (Part 1 & 2): 2003 – Timber panel doors; IS 4351: 2003 – Specification for steel door frames; IS 7452: 1990; IS 1038: 1983 – Specification for steel doors, windows, and ventilators; IS 12823: 1990 – Specification for wood-based flush door shutters.

6	Demolishing stub walls	Roof	Dismantling of stone/brick work in stub walls	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 1905: 1987; IS 2212: 1991; IS 2572: 2005; IS 456: 2000
7	Demolishing of waterproofing on the roof	Roof	Removal of all the deteriorated layers of waterproofing	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 3067: 1988 – Code of practice for general waterproofing; IS 3384: 1986 – Specification for bitumen ; IS 1346: 1991 – Code of practice for waterproofing; IS 6494: 1988 – Code of practice for waterproofing
8	Demolishing of CC	Roof, Dome, chhatri, Tower	Removal of deteriorated cement concrete from roof	IS 1200 (Part 18): 1974; IS 15916: 2010 ; IS 456: 2000 – Code of practice for plain and reinforced concrete
9	Demolishing of RCC/RBC roof sections	Roof	Dismantling of deteriorated and distressed RCC/RBC roof sections which are likely to collapse	IS 1200 (Part 18): 1974 Defines the measurement criteria for RCC dismantling; IS 15916: 2010; IS 456: 2000
10	Dismantling of stone work	Roof, Dome, chhatri, Tower	Dismantling of deteriorated/dislodged stone work in parapet / intermediate walls	IS 1200 (Part 18): 1974; IS 1597 (Part 1 & 2): 1992
11	Dismantling of brick work	Roof, Dome, chhatri, Tower	Dismantling of deteriorated brick work in parapet / intermediate walls, ceiling in chhatri, dome	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 1905: 1987 ; IS 2212: 1991 ; IS 3495 (Part 1 to 4): 1992; IS 1077: 1992
12	Removal of broken stone chajja, brackets	Roof	Dismantling of broken stone chajja, brackets	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 1597 (Part 1 & 2): 1992
13	Removal of plaster	Underground tunnel, LGF, Ground, 1st & 2nd Floor, Roof level Parapet, intermediate walls, Tower, Dome & chhatri	Removal of deteriorated plaster (lime, cement) from ceilings, walls, parapet, etc.	IS 1200 (Part 18): 1974; IS 15916: 2010
14	Raking out joints	Underground tunnel, LGF, Ground, 1st & 2nd Floor, Roof level Parapet, intermediate walls, Tower, Dome & chhatri	Removal of deteriorated mortar from masonry surface	IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
15	Removal of debris	Underground tunnel, LGF, Ground, 1st & 2nd Floor, Roof level, Tower, Dome & chhatri	Debris removal and clearance from the roof and dumping as per instructions in the BOQ	IS 13028: 1991 – Code of practice for disposal of construction debris; IS 3385: 1965 – Code of

				practice for measurement of site clearance.
C. STRUCTURAL REPAIR & WATER PROOFING				
S. No	Task/Activity	Location	Task Description	IS CODE Reference
1	Grouting	Roof slab	High strength grout inject	IS 1905: 1987 ; IS 4326: 2013; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
2	Applying bonding agent	Roof slab	applying epoxy bonding agent for bonding old to new concrete	IS 3085: 1965; IS 9103: 1999 (Reaffirmed 2021); IS 456: 2000; IS 2645: 2003
3	Repair works to the roof slab by consolidating damaged areas	Roof slab	Providing Polymer modified cement Mortar treatment	IS 9103: 1999 (Reaffirmed 2021); IS 2645: 2003; IS 13935: 2009
4	RCC slab	Roof slab	Providing and laying RCC slabs	IS 456: 2000; IS 269: 2015; IS 383: 2016; IS 1786: 2008; IS 9103: 1999 (Reaffirmed 2021); IS 10262: 2019; IS 516: 1959 (Reaffirmed 2020); IS 14687: 1999; IS 5525: 1969
5	Restoration of stone chajja	Roof	Restoration of broken stone chajja and replacement wherever missing	IS 1597 (Part 1 & 2): 1992; IS 2212: 1991; IS 3620: 1979
6	Restoration of parapet dismantled to repair chajja	Roof	Repair works to the deteriorated parapet in brick/stone at roof level	IS 1597 (Part 1 & 2): 1992; IS 2212: 1991; IS 1905: 1987
7	Construction of new stubs walls	Roof	Construction of new stub walls for running services	IS 1905: 1987; IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 456: 2000
8	Cleaning and repair of drains	Roof	Cleaning and repair works to drains and water spouts on terrace	IS 1742: 1983; IS 5329: 1983; IS 2527: 1984; IS 1200 (Part 16): 1979; IS 3370 (Part 1 & 2): 2009; IS 2065: 1983; IS 1726: 1991
9	Laying of khurras	Roof	Making & Laying of khurras on roof in cement concrete 1:2:4 mix	IS 2527: 1984; IS 1742: 1983; IS 3067: 1988; IS 2645: 2003; IS 1905: 1987; IS 2212: 1991; IS 456: 2000
10	Laying of Waterproofing	Roof	Laying of lime concrete waterproofing	IS 3067: 1988; IS 1625: 1971; IS 13935: 2009; IS 15797: 2008; IS 2645:

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

				2003; IS 3370 (Part 1 & 2): 2009; IS 1742: 1983
11	Brick consolidation	Tower, Dome, chhatri	In situ consolidation of masonry with bricks/brick bats in lime mortar	IS 2212: 1991; IS 1905: 1987; IS 13935: 2009
12	Stone masonry repair	Tower, Dome, chhatri	In situ consolidation of masonry with stone blocks/aggregates in lime mortar	IS 1597 (Part 1 & 2): 1992; IS 2394: 1984; IS 4326: 2013; IS 3067: 1988; IS 2645: 2003
13	Crack stitching	Tower, Dome, chhatri	Crack stitching with SS rods or stone lintels	IS 13935: 2009 ; IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981 ; IS 4098: 1996; IS 13094: 1992
14	Grouting	Tower, Dome, chhatri	Grouting of cracks using lime-based slurries	IS 1905: 1987 ; IS 4326: 2013; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
15	Cleaning of sandstone surface	Dome, chhatri	Cleaning the sand stone surface and removing dirt, dust, grime, biological growth	IS 2394: 1984; IS 13094: 1992; IS 3067: 1988
16	Surface treatment	Dome, chhatri	Providing and applying antifungal wash treatment	IS 14787: 2000 ; IS 1661: 1972; IS 2395 (Part 1 & 2): 1994; IS 6278: 1971; IS 13416 (Part 2): 1992 ; IS 1200 (Part 12): 1976
17	Repointing of Masonry Joints	Dome & chhatri	repointing of stone and brick masonry walls and ceilings in lime/cement mortar	IS 1200 (Part 12): 1976 ; IS 2394: 1984
18	Devegetation	Tower	Removal of unwanted plants/grass and other biological growth from the building using various methods (manual, mechanical, chemical)	IS 14756: 2000 – Guidelines for maintenance and removal of trees, shrubs, and vegetation from construction sites; IS 9172: 1979 – Criteria for design of temporary protective works
19	Removal of broken stone chajja	Tower	Dismantling of broken stone chajja	IS 1200 (Part 18): 1974; IS 15916: 2010; IS 1597 (Part 1 & 2): 1992
20	Removal of plaster	Tower	Removal of deteriorated plaster from ceilings, walls, parapet, etc.	IS 1200 (Part 18): 1974; IS 15916: 2010
21	Raking out joints	Tower	Removal of deteriorated mortar from masonry surface	IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
22	Stone masonry repair	Tower	In situ consolidation of masonry with stone blocks/aggregates in lime mortar	IS 1597 (Part 1 & 2): 1992; IS 2394: 1984; IS 4326: 2013; IS 3067: 1988; IS 2645: 2003

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

23	Crack stitching	Tower	Crack stitching with SS rods or stone lintels	IS 13935: 2009 ; IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981 ; IS 4098: 1996; IS 13094: 1992
24	Grouting	Tower	Grouting of cracks using lime-based slurries	IS 1905: 1987 ; IS 4326: 2013; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
25	Cleaning of sandstone surface	Tower	Cleaning the sand stone surface and removing dirt, dust, grime, biological growth	IS 2394: 1984; IS 13094: 1992; IS 3067: 1988
26	Surface treatment	Tower	Providing and applying antifungal wash treatment	IS 14787: 2000 ; IS 1661: 1972; IS 2395 (Part 1 & 2): 1994; IS 6278: 1971; IS 13416 (Part 2): 1992 ; IS 1200 (Part 12): 1976
27	Repointing of Masonry Joints	Tower	repointing of stone and brick masonry walls and ceilings in lime/cement mortar	IS 2250: 1981; IS 1200 (Part 12): 1976 ; IS 2394: 1984
28	Plastering	Tower	Application of lime/cement plaster on walls/ceiling, parapet, etc.	IS 1200 (Part 12): 1976 ; IS 1661: 1972; IS 2394: 1984
29	Whitewash	Tower	Application of whitewash on masonry surfaces	IS 6278: 1971

D. STRUCTURAL REPAIR - DOME, CHHATRI, TOWER, FLOORS, UNDERGROUND & TUNNEL

S. No	Task/Activity	Location	Task Description	IS CODE Reference
1	Laying of clay tiles (a month after lime concrete)	Roof	Laying of clay tiles as the final layer on lime concrete	IS 654: 1992; IS 2690 (Part 1 & 2): 1981; IS 2114: 1984
2	Application of heat reflective paint	Roof	application of heat reflective paint as the final finish on waterproofing	IS 9862: 1981; IS 2395 (Part 1 & 2): 1994 ; IS 14787: 2000
3	Application of acrylic paint	Roof	Application of acrylic paint on the walls and parapet base (wherever required)	IS 2395: 1994; IS 5411, IS 15489
4	Repair works to RCC, RBC	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Cleaning and strengthening of RCC/RBC slabs	IS 9103: 1999 (Reaffirmed 2021); IS 2645: 2003; IS 13935: 2009; IS 456: 2000
5	Rust removal	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Cleaning of reinforcement bars and MS surfaces	IS 1477 (Part 1): 1971; IS 9954: 1981; IS 101 (Part 4/Sec 2): 1988

6	Anti-corrosive treatment	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Corrosion protection of unexposed old reinforcement	IS 8062: 1976; IS 2074: 1992; IS 1477 (Part 2): 1971
7	Strengthening & repair of beams	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Strengthening structural Beam by providing & fixing CARBON FILAMENT	IS 15988: 2013; IS 13935: 2009; ACI 440.2R-17
8	Bonding Agent	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Providing and applying epoxy bonding agent	IS 3085: 1965; IS 9103: 1999 (Reaffirmed 2021); IS 456: 2000; IS 2645: 2003
9	Mortar treatment for RCC/RBC	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	Providing Polymer modified cement Mortar treatment	IS 2250: 1981
10	Grouting	2nd, 1st, Ground, Lower Ground floor (from 2nd floor to lower ground floor)	High strength grout inject	IS 1905: 1987 ; IS 4326: 2013; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
11	Carbon wrapping	Ground, Lower Ground floor	Strengthening structural elements by providing & fixing CARBONFIBER	IS 15988: 2013; IS 13935: 2009; IS 456: 2000; ACI 440.2R-17
12	Brick consolidation	2nd, 1st, Ground, Lower Ground floor, Underground tunnel	In situ consolidation of masonry with bricks/brick bats in lime mortar	IS 2212: 1991; IS 1905: 1987; IS 13935: 2009
13	Stone masonry repair	Dome & Chhatri external, 2nd, 1st, Ground, Lower Ground floor, Underground tunnel	In situ consolidation of masonry with stone blocks/aggregates in lime mortar	IS 1597 (Part 1 & 2): 1992; IS 2394: 1984; IS 4326: 2013; IS 3067: 1988; IS 2645: 2003
14	Brick consolidation	2nd, 1st, Ground, Lower Ground floor, Underground tunnel	In situ consolidation of masonry with bricks/brick bats in lime mortar	IS 2212: 1991; IS 1905: 1987; IS 13935: 2009
15	Crack stitching	2nd, 1st, Ground, Lower Ground floor, Underground tunnel	Crack stitching with SS rods or stone lintels	IS 13935: 2009 ; IS 2212: 1991; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981 ; IS 4098: 1996; IS 13094: 1992
16	Grouting	2nd, 1st, Ground, Lower Ground floor, Underground tunnel	Grouting of cracks using lime-based slurries	IS 1905: 1987 ; IS 4326: 2013; IS 1597 (Part 1 & 2): 1992; IS 2250: 1981
17	Cornices & Mouldings	Dome & chhatri internal	Providing & fixing Ornamental Matching brick masonry in mouldings & cornices	IS 2212: 1991; IS 13935: 2009; IS 1905: 1987; IS 2250: 1981
18	Plastering	Dome & chhatri internal	Application of lime/cement plaster on walls/ceiling, parapet, etc.	IS 1200 (Part 12): 1976 ; IS 1661: 1972; IS 2394: 1984

19	Application of lime punning	Dome & chhatri internal	Application of thin layer of lime punning plaster on walls/ceiling, parapet, etc.	IS 2394: 1984; IS 1635: 1992; IS 1661: 1972
20	Repointing of Masonry Joints	Dome & chhatri internal	repointing of stone and brick masonry walls and ceilings in lime/cement mortar	IS 2250: 1981; IS 1200 (Part 12): 1976 ; IS 2394: 1984
21	Whitewash	Tower, Dome & chhatri internal	Application of whitewash on masonry surfaces	IS 6278: 1971
E. RESTORATION OF ARCHITECTURAL ELEMENTS IN STONE/BRICK & WOOD REPAIR WORK – ROOF & FLOORS				
1	Stonework in staircase	2nd, 1st, Ground, Lower Ground floor	Repair works to stone in staircases	IS 1597 (Part 1 & 2): 1992; IS 2394: 1984; IS 4326: 2013; IS 3067: 1988; IS 2645: 2003
2	Stonework in Arches and Domes	2nd, 1st, Ground, Lower Ground floor	Construction of stone masonry in arches and domes	IS 1597 (Part 1 & 2): 1992; IS 2394: 1984; IS 4326: 2013; IS 3067: 1988; IS 2645: 2003
3	Columns	2nd, 1st, Ground, Lower Ground floor	localised repairs to stone columns	IS 1597: 1992; IS 13935: 2009; IS 15477: 2019; IS 2645: 2003
4	Repair to decorative stone elements	2nd, 1st, Ground, Lower Ground floor	localised repairs and replacement of decorative stone brackets, mouldings, door frames, jali, cornices, copings railing, etc.	IS 2212: 1991; IS 13935: 2009; IS 1905: 1987; IS 2250: 1981; IS 1597 (Part 1 & 2): 1992; IS 15477: 2019
5	Stone Chajja repair	2nd, 1st, Ground, Lower Ground floor		IS 1597 (Part 1 & 2): 1992; IS 2212: 1991; IS 3620: 1979; IS 15477: 2019
6	Masonry/lime cornices & Mouldings	2nd, 1st, Ground, Lower Ground floor	Providing & fixing Ornamental Matching brick masonry in mouldings & cornices	IS 2212: 1991; IS 13935: 2009; IS 1905: 1987; IS 2250: 1981
7	Paint removal from wood	All floors	Paint removal from wooden surface using chemicals/solvents and tools	IS 2395: 1994; IS 2338: 1967; IS 1477: 1971; IS 524: 1983
8	Door/window/clerestory window/vents shutters & frames, railing, moulding, etc. repair	All floors	Repair to the damaged or deteriorated wooden section of the doors, windows	IS 4021: 1995 ; IS 1003: 1991; IS 2202: 1999; IS 848: 2006
9	Polish on wood	All floors	Application of polish on frames/ shutters	IS 2338: 1967; IS 348: 1968; IS 13745: 1993; IS 12406: 2021

10	Glass in openings	All floors	Providing & fixing glass in door/window shutters	IS 4021: 1995; IS 6315: 1992; IS 1081: 1960; IS 2190: 2010
11	Fixing latches/towerboltst	All floors	Fixing hardware on shutters	IS 204: 1992; IS 7196: 1974; IS 9973: 2008

F. FLOORING REPAIR

1	Dismantling of flooring	All floors	Careful dismantling of flooring	IS 13801: 2013 sandstone;
2	Laying and repair to sandstone flooring	All floors	Providing and laying sandstone flooring	IS 1443: 1972; IS 2114: 1984; IS 1237: 2012
3	Laying and repair to terrazzo flooring	All floors	Providing and laying terrazzo flooring	IS 5491: 1969; IS 2571: 1970; IS 2114: 1984; IS 1237: 2012
4	Laying and repair to marble flooring	All floors	Repair works to marble flooring	IS 1443: 1972; IS 2114: 1984; IS 1237: 2012
5	Pointing of Tile Joints	All floors	pointing of tiles in mortar	IS 1237: 2012

G. CLEANING & TREATMENT

1	Cleaning of sandstone surface	2nd, 1st, Ground, Lower Ground floor Internal and External	Cleaning the sand stone surface and removing dirt, dust, grime, biological growth	IS 2394: 1984; IS 13094: 1992; IS 3067: 1988
2	Surface treatment	2nd, 1st, Ground, Lower Ground floor Internal and External	Providing and applying antifungal wash treatment	IS 14787: 2000 ; IS 1661: 1972; IS 2395 (Part 1 & 2): 1994; IS 6278: 1971; IS 13416 (Part 2): 1992 ; IS 1200 (Part 12): 1976
3	Cleaning of steel/MS sections	2nd, 1st, Ground, Lower Ground floor Internal and External	Removal of dirt, rust, old paint, oil grease etc. from steel sections	IS 1477 (Part 1): 1971; IS 9954: 1981; IS 101 (Part 4/Sec 2): 1988

H. FINISHING WORKS				
S. No	Task/Activity	Location	Task Description	IS CODE Reference
1	Plastering	LGF, Ground, 1st & 2nd Floor, Parapet, intermediate walls, Tower, Dome & chhatra internal	Application of lime/cement plaster on walls/ceiling, parapet, etc.	IS 1200 (Part 12): 1976 ; IS 1661: 1972; IS 2394: 1984
2	Application of lime punning	LGF, Ground, 1st & 2nd Floor, Parapet, intermediate walls, Tower, Dome & chhatra internal	Application of thin layer of lime punning plaster on walls/ceiling, parapet, etc.	IS 2394: 1984; IS 1635: 1992; IS 1661: 1972
3	Repointing of Masonry Joints	Tunnell, LGF, Ground, 1st & 2nd Floor, Parapet, intermediate walls, Tower, Dome & chhatra internal	repointing of stone and brick masonry walls and ceilings in lime/cement mortar	IS 2250: 1981; IS 1200 (Part 12): 1976 ; IS 2394: 1984
4	Application of acrylic paint	LGF, Ground, 1st & 2nd Floor, Parapet, intermediate walls, Dome & chhatra internal	Application of acrylic paint on masonry surfaces	IS 2395: 1994; IS 5411, IS 15489
5	Whitewash	LGF, Ground, 1st & 2nd Floor, Parapet, intermediate walls, Tower, Dome & chhatra internal	Application of whitewash on masonry surfaces	IS 6278: 1971
6	Art restoration	Ground Floor	Cleaning and primary consolidation of painted ceiling/wall surface with artwork	IS 15727: 2007; IS 14724: 1999; IS 2395 (Part 1 & 2): 1994; IS 1661: 1972
7	Door/window shutter fixing	all floors	Refixing of repaired door shutters including frames,	IS 1081: 1960; IS 4021: 1995; IS 4351: 2003; IS 204: 1992; IS 7196: 1974; IS 9973: 2008; IS 7196: 1974
I. TOILET WORKS				
S. No	Task/Activity	Location	Task Description	IS CODE Reference
1	MEP Toilet Re-construction		Reconstruction of new toilet block with advanced services	
2	Cement Plaster	All floors	Application of cement plaster on wall, ceiling, etc.	
3	Laying new tile flooring	All floors	Providing and laying vitrified tiles	

4	Paint Application	All floors		IS 2395: 1994; IS 5411, IS 15489
5	Water supply	Building & Site level	Providing water supply for the toilets, wash areas, kitchen, etc.	
6	Sanitary installations	Building level	Providing and fixing sanitary fixtures/fittings	
7	Foundation repair works	LGF, tunnel	repair works to the foundation through consolidation and grouting	
8	Site drainage		Providing appropriate site level drainage	IS 1172: 1993; IS 5329: 1983; IS 1742: 1983

Material Testing Standards

S. No	Task/Activity	Task Description	IS CODE Reference
1	Selection of Limestone	General standards for selection	IS 712: 1984
		Class A — Eminently hydraulic lime used for structural purposes.	
		Class B — Semi-hydraulic lime used for masonry mortars, lime concrete and plaster undercoat.	
		Class C — Fatlime used for finishing coat in plastering, whitewashing, composite mortars, etc, and with addition of pozzolanic materials for masonry mortar.	
2	Testing of Limestone before procurement	Sampling for testing	IS 712: 1984 Appendix A
		Chemical composition test	IS 6932 Parts 1 - 1973
		Moisture content and lime content	IS: 1514 - 1959
		Physical properties tests	IS 6932 1973 & 1984
3	Entry of limestone to the site and handling	Check for packaging, labelling of type, IS code, and marking of date	IS 712: 1984 - 6, 7
4	Storage of limestone	Storage of sealed limestone in shaded and covered spaces	IS 712: 1984 - 8
5	Preparation of mortar	Storage of sealed lime in shaded and covered spaces	IS 2250:1981

6	Testing of mortar	Quality test as per requirements and standards	IS 2250:1981; IS 1624:1986; IS 2386 Part 1
7	Packing and storage	Storage of sealed lime in shaded and covered spaces	IS 712: 1984
8	Preparation of plaster	Storage of sealed lime in shaded and covered spaces	IS 2250:1981
9	Testing of plaster	Quality test as per requirements and standards	IS 2250:1981; IS 1624:1986; IS 2386 Part 1
10	Sampling of plaster for final finish	Sample patches to be made on a surface with/without pigments for approval	IS 2250:1981
11	Preparation of lime concrete		IS 2250:1981; IS 712: 1984
12	Testing of lime concrete	Quality test as per requirements and standards	IS 2250:1981; IS 2386 Part 1
13	Preparation of lime putty		IS 2250:1981
14	Testing of lime putty	Quality test as per requirements and standards	
15	Storage of lime putty	Storage of lime wash in closed drums in shaded and covered spaces	IS 712: 1984
16	Preparation of lime wash		IS 2250:1981
17	Testing of lime wash	Quality test as per requirements and standards	
18	Storage of lime wash	Storage of lime wash in closed drums in shaded and covered spaces	IS 712: 1984

SANDSTONE/GRANITE

S. No	Task/Activity	Task Description	IS CODE Reference
1	Selection of stone	sample testing	IS 3622: 1977
2	Testing of stone	Physical/chemical tests	IS 1124:1974, IS 2386:1963
3	Entry of stone to the site and handling	Check for packaging, labelling of type, IS code	
4	Storage of stone	Storage of stone in dry areas	

5	Polishing of stone	Polishing of stone	
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MARBLE			
S. No	Task/Activity	Task Description	IS CODE Reference
1	Selection of stone	sample testing	IS 1130: 1969
2	Testing of stone	Physical/chemical tests	IS 1124: 1974
3	Entry of stone to the site and handling	Check for packaging, labelling of type, IS code	
4	Storage of stone	Storage of stone in dry areas	
5	Polishing of stone	Polishing of stone	
CLAY TILES			
S. No	Task/Activity	Task Description	IS CODE Reference
1	Selection of tiles	selection as per size requirement	IS 654: 1992
2	Entry of material to the site and handling	Check for packaging, labelling of type, IS code	
3	Storage of tiles	Storage of tiles in dry areas	

1.3.5. Marble

Marble is a widely used natural stone in construction and interior design due to its elegance, durability, and versatility. To ensure high-quality installation, proper selection, testing, handling, storage, and polishing of marble are essential.

1. Selection of Marble

- **Appearance & Color:** Marble should be of matching color, veining pattern, and surface texture to the existing stone in the structure.
- **Strength & Density:** High-quality marble should be dense, compact, and free from internal cracks.
- **Water Absorption & Porosity:** Lower porosity ensures durability. Good-quality marble should have a water absorption of less than 0.5%.
- **Workability:** The stone should be easy to cut, shape, and polish without excessive breakage.

2. Testing of Marble

Marble should be tested as per IS 1130:1969 (Marble Blocks, Slabs, and Tiles) and other relevant IS codes to ensure its quality.

a) Compressive Strength Test (IS 1121:1974 Part 1)

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

- Determines the load-bearing capacity of marble.
- A cube-shaped sample is subjected to a gradual compressive load in a testing machine.
- Requirement: Should have a minimum strength of 35-60 MPa.

b) Water Absorption Test (IS 1124:1974)

- A sample is dried, weighed, immersed in water for 24 hours, and reweighed.
- Requirement: Water absorption should be below 0.5% to ensure durability.

c) Hardness Test (Mohs Scale)

- Marble is tested for hardness using a scratch test.
- Requirement: Good-quality marble should have a hardness between 3-4 on the Mohs scale.

d) Flexural Strength Test (IS 1130:1969)

- Measures the ability of marble slabs to resist bending under load.
- Requirement: The flexural strength should be greater than 10 MPa.

3. Entry of Marble to the Site and Handling

- **Inspection:** Upon arrival, marble slabs and tiles should be checked for cracks, uniformity in thickness, and consistency in color and veining.
- **Unloading:**
 - Large slabs should be lifted using cranes with nylon straps (avoid metal chains to prevent damage).
 - Smaller tiles should be handled manually with care to prevent chipping.
- **Stacking:** Slabs should be stored vertically with wooden spacers, while tiles should be stacked flat with soft padding between them.

4. Storage of Marble

- **Covered & Shaded Area:** Store marble in a dry, well-ventilated, covered area to protect it from moisture and dust.
- **Stacking Method:**
 - Large slabs should be stored vertically with wooden supports to prevent warping.
 - Tiles should be placed in wooden crates with cushioning to avoid edge chipping.
 - Avoid placing heavy loads on top of stacked marble, as it may lead to cracks.
- **Protection from Staining:** Marble is porous and can absorb stains. Cover stored marble with plastic sheets or fabric to prevent contamination.

Pressed Clay Tiles

Pressed clay tiles are to be used for roofing, due to their durability, thermal insulation, and aesthetic appeal. Ensuring proper selection, handling, storage, and testing is crucial for maintaining quality and performance.

1. Selection of Pressed Clay Tiles

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

The selection of pressed clay tiles is based on the following criteria:

a) Material Quality & Composition

- Tiles should be made from high-quality clay, free from excessive organic impurities.
- The clay should be well-processed and pressed under high pressure for uniform strength.

b) Size & Dimensional Accuracy (IS 1237:2012 for Floor Tiles, IS 654:1992 for Roofing Tiles)

- Tiles should be uniform in size, thickness, and shape.
- Dimensional tolerance should be within ± 2 mm for length and width and ± 0.5 mm for thickness.

c) Strength & Durability

- The tile should have high compressive strength and be resistant to wear.
- It should not break easily under impact or load.

d) Water Absorption (IS 13755:1993 for Clay Roof Tiles)

- Good-quality tiles should have low water absorption ($< 20\%$) to prevent moisture damage.

e) Surface Finish & Appearance

- The surface should be smooth, well-fired, and free from cracks or warping.
- Color should be uniform with no visible spots or discolored patches

2. Entry of Material to the Site and Handling

a) Inspection Upon Arrival

- Verify the packaging and labeling for compliance with the IS code.
- Check for damaged or broken tiles during transportation.
- Confirm that tiles are from an approved supplier and meet quality standards.

c) Handling Methods

- Tiles should be handled carefully to prevent edge breakage.
- Avoid dropping or rough handling to minimize cracks and chips.
- Use wooden pallets and cushioning materials when unloading.

3. Storage of Pressed Clay Tiles

a) Storage Area & Conditions

- Store tiles in a dry, shaded, and well-ventilated space to prevent moisture absorption.
- Keep the area clean and free from dust or chemical contaminants.

b) Stacking Method

- Tiles should be stacked vertically with wooden separators to prevent chipping.
- Maximum stack height should not exceed 1.5 meters to avoid excessive load pressure.

c) Protection from Weather

- Cover with plastic sheets or tarpaulins to protect from rain and sunlight.

- Ensure proper drainage in the storage area to prevent water accumulation.

4. Field & Laboratory Tests for Pressed Clay Tiles

Field Tests:

1. Visual Inspection:
 - Check for cracks, warping, and surface irregularities.
 - Tiles should be evenly colored and well-finished.
2. Soundness Test:
 - Strike two tiles together—a clear ringing sound indicates a well-fired, strong tile.
3. Water Absorption Test:
 - Submerge the tile in water for 24 hours and observe.
 - If it absorbs too much water, it may not be durable.
4. Drop Test:
 - Drop the tile from 1-meter height onto a hard surface.
 - A high-quality tile will not break easily.

Laboratory Tests:

1. Compressive Strength Test (IS 13630:2006)
 - Measures the ability of tiles to withstand pressure.
 - A tile sample is subjected to gradual compressive force until failure.
 - Requirement: Should have a minimum strength of 100 kg/cm².
2. Water Absorption Test (IS 13755:1993)
 - Weigh the tile before and after immersion in water for 24 hours.
 - Requirement: Water absorption should be <20% for roofing tiles and <10% for flooring tiles.
3. Flexural Strength Test (IS 1237:2012 for Floor Tiles)
 - Determines the bending resistance of the tile.
 - Requirement: Minimum 3 MPa for standard clay tiles.

LIST of Tender Drawings

Sr. No.	Drawing Name	Drawing No.	Remarks
A.	TENDER DRAWINGS UPLOADED		
1.	Elevation North and East	CVNB/DD/ELE/N-E/10	Elevations
2.	Elevation South and West	CVNB/DD/ELE/S-W/10	Elevations
3.	Material Mapping Section	CVNB/MM/SEC/AA-BB/27	Material Mapping Section
4.	Condition Mapping Section	CVNB/CM/SEC/AA-BB/32	Condition Mapping Section
5.	3D view North Block		
6.	Service Block		Service Block Plan
B.	TENDER DRAWINGS AVAILABLE CAN BE SEEN IN THE O/O EXECUTIVE ENGINEER, CVPD-6, CPWD		
1.	Lower Ground Floor Plan	CVNB/DD/LGF/01	Floor Plans
2.	Upper Ground Floor Plan	CVNB/DD/GF/02	Floor Plans
3.	First Floor Plan	CVNB/DD/FF/03	Floor Plans
4.	Second Floor Plan	CVNB/DD/SF/04	Floor Plans
5.	Terrace Floor Plan	CVNB/DD/TP/07	Floor Plans
6.	Roof Plan	CVNB/DD/RP/09	Floor Plans
7.	Material Mapping of Wall Lower Ground Floor Plan	CVNB/MM/LGF/01(A)	Material Mapping
8.	Material Mapping of Flooring Ground Floor Plan	CVNB/MM/GF/02(B)	Material Mapping
9.	Material Mapping of Wall Ground Floor Plan	CVNB/MM/GF/02(A)	Material Mapping
10.	Material Mapping of Ceiling Ground Floor Plan	CVNB/MM/GF/02(C)	Material Mapping
11.	Material Mapping of Flooring First Floor Plan	CVNB/MM/FF/03(B)	Material Mapping
12.	Material Mapping of Wall Second Floor Plan	CVNB/MM/SF/04(B)	Material Mapping
13.	Dismantling of Waterproofing layer on terrace	CVNB/TD/DM/29	Dismantling Drawing
14.	Door & Window Elevation and Plan_01	CVNB/WW/D&W/46-A	Door Window Schedule
15.	EW_GF Scientific Excavation	CVNB/EW/GF/SE/48-B	Excavation Drawings Ground Floor Plan
16.	WP_TERRACE SLAB_RBC and RCC	CVNB/WP/TR/SEC/50	Waterproofing on Terrace Slab RBC and RCC
17.	SR SF Carbon filament in SF Slab	CVNB/SR/SF/CF/51-C	Carbon filament in typical floor

Preferred Make List for Civil Work		
S. No.	Material / Item	Approved Make
	Excavation	
1.	Anti-Termite Pesticides	(Imidacloprid) Bayer, FMC India, Hindustan Insecticides
	PPC & RCC Work	
2.	Cement OPC/ PPC	UltraTech, ACC, Ambuja, JK cement, Wonder Cement, or any other manufacturer approved by the Competent Authority of CPWD
3.	Cement – White	J.K. White, Birla White
4.	Admixture for Concrete	BASF, Sika, Fosroc, Mapei,
5.	Reinforcement Steel: Main Producers only	TATA (TISCO), SAIL, RINL, JSPL, JSW
6.	Alccofine	Ambuja, Lafarge, Holcim
7.	Ready Mix Cement Concrete	Ultratech, ACC, NUVOCO, RMC India and/or by setting the batch mixing plant of minimum capacity 30 cum/hr by contractor away from the project site and/or any other manufacturer as approved by the competent Authority of CPWD
8.	Expanded polystyrene sheet (EPS)	Penguin, Kiwi, E-pack
9.	Core cutting	Hilti, Fischer, Wurth
10.	PVC water stop	Jyoti rubber, Maruti rubber, Kantaflex
	Road Work	
11.	Bitumen	Indian Oil, Hindustan Petroleum, Bharat Petroleum
	MASONRY WORK	
12.	Ready mix polymer cement mortar	UltraTech, Saint Gobain-weber, Sika, Fosroc,
	DOORS & WINDOWS WORK	
13.	Glass	Saint Gobain, ASAHI, Modiguard (Gujarat Guardian), Gold Plus, Schott, Pyro
14.	Silicone Sealant	Wacker, Dow Corning, GE momentive, Tremco, Mapei, MC Bauchemie(I), Pidilite, STP
15.	Compact Laminate sheet	Greenlam, Merino, Fundermax
16.	Aluminium hinges	Classic /Argent/Crown
	SS HARDWARE	
17.	Floor spring, door closer & door automation	Dormakaba, Yale, Geze, Hafele
18.	All type of Door lock including Mortice locks	Dormakaba, Geze, Hafele Kich, Godrej, Yale
19.	SS 304 Door Hardware (other than Floor spring, Closer, Locks)	Dormakaba, Geze, Hafele Kich, Godrej, Yale
20.	Concealed automatic drop down seal/ Acoustic Seal / or any other type of Door seal	Raven, Athmer, Dormakaba, Lorient, Kilargo, Hafele
21.	Modular Toilet Cubical	Greenlam, Merino, Fundermax,

22.	Urinal Partition made of laminated compact sheet	Greenlam, Merino, Fundermax
23.	Mirrors/ interior mirror (superior quality crystal clear)	Saint Gobain, Modi Guard (Gujarat Guardian), AIS, Sisecam, Pilkington, Gold Plus
24.	Wood Adhesive	Speedex Fevicol, Araldite, kerakol, Astral, 3 M
25.	Steel Nuts, Bolts and Screws	Kundan, Puja, Atul
PLASTER WORK		
26.	Gypsum light weight Plaster	Saint Gobain Gyproc (Elite-90), Ultra tech, USG Boral, Birla White
27.	Ready mix plaster	UltraTech, Saint Gobain Weber, Birla White, SIKA, Fosroc, Magnicrete (Mechanical applicable)
WATER PROOFING WORK		
28.	Crystalline Integral Waterproofing	Penetron, Kryton, Xypex, Fosroc, SIKA, Mapei, BASF, MC Bauchemie
29.	Water Proofing compound	Fosroc, Sika, Master Builder (BASF), Mapei, MC-bauchemie, Weber, Ardex Endura
30.	Water proofing membrane (PVC/ HDPE)/ Water proofing coating (PU/ Polyurea/ Acrylic/ Elastomeric cementitious) / SRI coating	Fosroc, Master Builder (BASF), SIKA, Grace, Mapei, Henkel Polybit, Huntsman, MC-bauchemie
31.	Water Stops - Hydrophilic Swellable rubber strip (Not bentonite type)	Fosroc, Master Builder (BASF), SIKA, Grace, Mapei, Penetron
32.	Polyurethane over deck insulation foam	Master Builder (BASF), Bayer, Lloyd Insulations, Henkel Polybit, Mapei
FLOORING WORK		
33.	Vitrified Tiles (All tiles shall be procured from fully owned factory of the manufacturer and not from JV /outsourced)	RAK, Restile, Kajaria, Somany,
34.	Tiles/ Stone fixing Adhesive (Only High performance, polymer modified, non-slip adhesive)	Ardex Endura, KeraKoll, Saint Gobain-Weber, Mapei
35.	Epoxy Grout/ Cementitious Grout for Flooring	Ardex Endura, KeraKoll, Saint Gobain-Weber, Mapei
36.	Epoxy terrazzo flooring	BASF, CIPY, Flowcrete
37.	PVC spacer, abrotape etc and grouting with epoxy grout	Sika, BASF, FOSROC, Saint Gobain -weber, Mapei, Ardex Endura.
38.	Clay Tile on Roof	KENZAI, JOHNSON
METAL WORK		
39.	Structural Steel & Hollow Section - Producers only	SAIL, TATA (TISCO), RINL, Jindal Steel & Power (JSPL), APL Apollo tube, JSW
40.	Aluminium sections and plate	Hindalco, Jindal, Bhoruka, Balco
41.	Anchor Fastener, Rebar, Chemical/ Mechanical fastener, Expandable fasteners	Hilti, Fischer, Wuerth, Mungo
42.	Non shrink cementitious precision (anchoring) grout	Fosroc, Sika, Mapei, Pidilite, BASF

43.	Metal False ceiling	Durlum, Armstrong , Dexune ,Credence, Knauf
44.	Stainless Steel Railing	Connect Arch. Pvt. Ltd., Jindal S.S. Ltd., Geze, ICICH Inds., ESSAL, DORMA, D Line, Kitch
45.	Stainless Steel hardware fittings	Dorma, Hafele, Godrej, Geze
CEILING & WALL PANELLING WORK		
46.	Gypsum ceiling system (plain/ perforated/ Mould resistance paperless), Trap door	Saint Gobain, USG Boral, Knauf Danoline
47.	Plywood (All plywood shall be procured from fully owned factory of the manufacturer and not from JV / outsourced)	Greenply, Century, Duroply, Archidply, Merino, Kitply
48.	GI suspended ceiling grid system & Close/ C stud framing system	Sain Gobain, USG Boral, Knauf Danoline
PAINTING WORK		
49.	White cement-based putty	Birla, JK, Asian, Berger
50.	Paint - Plastic Emulsion (Internal)	Asian, Akzo Noble, Berger Paints, Jotun, ICI Dulux, Nerolac
51.	Paint - Synthetic Enamel	Asian, Akzo Nobel (Dulux), Berger Paints, Nerolac
52.	Paint - Acrylic Emulsion (Exterior)	Asian Paints, Akzo Nobel (Dulux), Jotun, Berger, Nerolac
53.	Paint - PU & epoxy paint and primer	Asian, ICI, Berger Paints, Jotun, Nippon, MRF
54.	PU Polish for wood work	ICA, MRF, Asian, Berger Paints
Plumbing Works		
A	Sanitary wares & C.P fittings	
55.	Vitreous China Sanitary-Ware	Kohler, TOTO, Grohe, Jaquar, Roca
56.	C. P. Fittings / Mixtures	Kohler, TOTO, Grohe, Jaquar, Roca
57.	Urinal	Kohler, TOTO, Grohe, Jaquar, Roca
58.	Stainless Steel Sink	Jayna , Nirali , Franke , Prestige
59.	Liquid Soap Dispenser	Kohler, TOTO, Grohe, Jaquar, Roca
60.	Tissue Dispenser with waste receptacle	Kohler, TOTO, Grohe, Jaquar, Roca
61.	Nitrile Rubber Insulation	Armacell, K-flex, A-flex, Supreme
62.	Sensor Faucets	Jaquar/ Kohler/ Roca/ TOTO / Euronics / Dolphy / Hindware
63.	Special Needs Toilet Sets	Hindware / Cera
64.	Stainless Steel Toilet Paper Roll Holder	Kohler, TOTO, Grohe, Jaquar, Roca
65.	Sensor Operated Liquid Soap Dispenser	TOTO / Euronics / Dolphy / UTEC / Bobrick
66.	Hand Dryer	TOTO / Jaquar / Euronics / Dolphy / UTEC / Bobrick
67.	Stainless Steel Gratings	Chilly / NEER / Futura
68.	Indian/European WC, Wash Basin and other Sanitary Installation.	Jaquar, Roca, Kohler
B	PIPING & VALVES	

69.	Forged Brass Ball Valves	Zoloto/ Castle Valves/ Hawa/ Honeywell/ Lehry
70.	Forged Brass Globe/Gate Valve	SANT/ Zoloto/ Hawa/ CIM/ Lehry/Honey well
71.	Butterfly Valve	Audco/ Advance/ Zoloto/ Sant/ Lehry/ Honeywell
72.	Non-Return Valve / Check valve (All type)	Audco/ Advance/ Zoloto/ Sant/ Lehry/ Honeywell
73.	Pressure Reducing Valves	Zoloto/ sant/ Watts/ Castle Valves/ Honeywell, Lehry
74.	Air Release Valve	Zoloto/ sant/ Watts/ Studor
75.	Copper Pipes/fittings	Fastwell engineering, Mexflow, Flowflex - Rajco, Viega, Sk metals
76.	CPVC Pipes / Fittings	Astral / Ashirvad / Prince / Supreme
77.	Stainless Steel Pipe and fittings	EQ SS, J Press, Sanghavi, Jindal, Viega, alfa Press
78.	HDPE (SN8 pipes)	Astral/Finolex/ Supreme
79.	Hot/Cold Water Pipe Insulation	Armacell / K- Flex/ A-Flex/ ALP aeroflex/ Thermaflex
80.	Actuators	Rexroth, Avcon, Honeywell, Billimo, Lehry
81.	Pressure Gauge	Feibig/ H.Guru/ Emerald/ Warie/ Wika/Zoloto/Castle Valve
82.	Y – Strainer	Zoloto/ Honeywell/ Emerald/ Sant / VTM/Castle Valve
83.	C.I pipe Joint	Acqua Bond, Drip Seal, Mega Seal
84.	Water Meters	Kranti/Capstan/Deshmesh/ Aquamet Zenner, Rockwin
85.	Rainwater Outlet/ Scupper drain	ACO, Neer, GMGR, Kessel, MIFAB, Chilly
86.	C.I /D. I Manhole Frame & cover	Neco, Saint Gobain,BIW, RIF, Crescent Foundary
87.	Floor Clean out plug/ clean out plug/ Floor Trap/Floor drain/ Cockroach Trap	Kich, Ruhe, Chilly, ACO, Neer, GMGR, Kessel, MEA, Geberit, MIFAB
88.	Fire Sealant	Hilti, Birla 3 M, Promat
89.	Over Head Tanks	Sintex, ATUL, Fusion
90.	Ball Float Valves	Zoloto / Sant / Castle Valves / Leader
91.	Cast Iron Grating Covers	NECO / Saint Gobain / Thermodrain / Crescent Foundry
92.	Thermal Insulation for Hot Water Pip	Astral / Armacell / Thermaflex / Supreme
93.	UPVC FOAM CORE Pipes	Astral / Ashirvad / Supreme / Prince / Finolex
94.	Soil waste & Vent Pipes & fittings	NECO, RIF, SKF, HIF
95.	MS pipes	Kirloskar, Electro Steel.
	Surface Cleaning & Treatment of Walls & Floors	

96.	Liquid Ammonia chemical solution	<ul style="list-style-type: none"> • Surat Ammonia & Chemical Company, Surat, Gujarat • National Fertilizers Limited (NFL) Noida, Uttar Pradesh • Mangalore Chemicals & Fertilizers Limited (MCF), Mangalore, Karnataka
97.	Sodium Pentachlorophenate	<ul style="list-style-type: none"> • Advance Chemical Sales Corporation New Delhi, India • Kavya Pharma Surat, India • Acuro Organics Limited Delhi, India
98.	Ethyl Silicate chemical	<ul style="list-style-type: none"> • Trittech Catalyst & Intermediate Pvt. Ltd., Pune, Maharashtra • DKIC, India • NRS International Pvt. Ltd. Vapi, Gujarat
99.	Antifungal water repellent silane/siloxane chemical and Turpentine oil	<ul style="list-style-type: none"> • Sikagard®-72 W by Sika India • Mipro Brand Water Seal by Chemiprotect Engineers • Water Repellent Silane Siloxane by Supreme Silicones India Private Limited
100.	Mild cleaning solution	<ul style="list-style-type: none"> • Teepol, • Sika, • Ecochem
101.	pH-neutral, non-corrosive, and biodegradable cleaning agent.	<ul style="list-style-type: none"> • Prosoco Heavy Duty Paint Stripper • D/2 Biological Solution • Sika® Cleaner P
102.	Safe chemical (Mora pack) / non-ionic mild soap solution having ph value 7	<ul style="list-style-type: none"> • Liqui-Nox® Phosphate-Free Liquid Detergent • Aqua-Cleen® Non-Ionic Surfactant • EMPILAN® KCL 7
103.	Methylene chloride or similar paint removal chemical	<ul style="list-style-type: none"> • Parna Chemicals International Corporation • Purosolv Chemical Manufacturing • Prakash Chemicals International
Structural repair		
104.	Alkaline chemical rust remover	Penetron, Xypex, Pidilite, Fosroc, Sika, Mapei, BASF, MC Bauchemie
105.	Corrosion inhibiting	Sika, Fosroc, Pidilite, Mapei
106.	CARBON Laminate	Sika, BASF, FOSROC, Mapei
107.	CARBON FILAMENT	Sika, BASF, FOSROC, Mapei

108.	epoxy bonding agent	Sika, Fosroc, Pidilite, Mapei
109.	polymer modified cementitious	Sika, BASF, FOSROC, Mapei
110.	High strength, non- shrink free flowing grout material	Sika, BASF, FOSROC, Mapei
111.	Polymer modified cement mortar	Ultratech, Sika, Fosroc, Dalmia, Saint Gobain –weber
112.	Aluminium Free Expanding Grout Fluidifier admixture	Sika, BASF, FOSROC, Mapei
113.	High strength 451 GSM CARBONFIBER WRAP	Sika, BASF, FOSROC, Mapei
114.	Anti-corrosive paint	Sika, Fosroc, Pidilite, Mapei
115.	Pozzolanic additives (0.5% polymer fluidizer)	Sika, BASF, FOSROC, Mapei
116.	Injection Grouting	Pidilite (Dr. Fixit), SIKA, FOSROC CHOCKSEY/ DURA BUILD
	Woodwork	
117.	Polyester resin of low viscosity	Sika, Pidilite, MB Enterprises
118.	Glass	Saint Gobain, Asahi, Pyro, Gold Plus, Schott, Modigaurd (Gujarat Guardian)
119.	French spirit polishing	Prabhush French Polish, Waxpol, INDOPOWER
120.	Wax polish	Noble Engineering, Chemtex Speciality Ltd., Reckitt Pro Solutions, Surie Porex Industries Pvt. Ltd
121.	brass butt hinges	Magnum, EPPW, Palladium, Décor
122.	brass tower bolts	Magnum, EPPW, Palladium, Décor
123.	brass door latch	Magnum, EPPW, Palladium, Décor
124.	PU polish wood	ICA, MRF, Asian Paints, Berger paints
	Miscellaneous	
125.	GRC (Glass Reinforced Concrete) Jali Screen	Unistone, Swastik GRC, Everest, Ulteratech
126.	Spider Fittings	Dorma, Sevax
127.	SS Tactile Stud	Prosafe, Canon, Eminent Overseas, Prarthana technical services Pvt. Ltd. Jindal, JB Enterprise
128.	Safety and road marking paint & equipment	3M India Ltd, Protector, Ananta Inc, Asian

Schedule of Quantities (CIVIL)

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
1	Preparatory & Supporting work for execution				
	<p>Note:-</p> <p>(1) The Installed elevational area of the scaffolding shall be measured for payment purpose.</p> <p>(2) The measurement of the scaffolding shall be made only once for a given location for all type of the works wherever the scaffolding is required</p> <p>(3) Chajja, brackets and other decorative elements should not be used as support system for scaffolding.</p> <p>(4) Utmost care to be taken while erecting and removing the scaffolding. No damage should be done to chajja, brackets or any other architectural elements.</p> <p>(5) For Special Areas like dome, chattries etc will be made as per construction drawings shall be provided by at the time of execution.</p>				
1.1	<p>Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings,</p>	112000Sqm	338.99	Sqm	3,79,66,880

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	runners, connecting with the building etc, wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge.				
1.2	Extra for additional height in Scaffolding work over a height of 25 m, for every additional height of 1 metre or part thereof.	2600Sqm	13.79	Sqm	35,854
1.3	Centering, propping etc. for, arches, domes, vault - Using MS structural steel members and hydraulic jacks to rise, Support the structural framework ,made of wood or steel to ensure proper contact with the structural member or to support the rafters or beams during the working on other floors at different levels wherever required with essential safety features for the workmen, & building elements etc., including cost of materials, labour, transportation with all lead and lift as per the direction of Engineer-in-charge. This also include the central double height area for propping work by having a mid-floor platform setup during the execution of concrete works. (for measurement at least 1 prop shall be installed in 1 Sqm area plan area.)	13300Sqm	430.70	Sqm	57,28,310
1.4	Centering, propping etc. for Balconies Suspended floors, roofs, landings, etc- Using MS structural steel members and hydraulic jacks to rise, Support the structural framework ,made of wood or steel to ensure proper contact with the structural member or to support the rafters or beams during the working on other floors at different levels wherever required with	23800Sqm	240.65	Sqm	57,27,470

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	essential safety features for the workmen, & building elements etc., including cost of materials, labour, transportation with all lead and lift as per the direction of Engineer-in-charge. (for measurement at least 1 prop shall be installed in 1 Sqm Plan area.)				
1.5	<p>Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, for all lifts, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 500 m.</p> <p>Note: - 1.) Any damages to the structure shall be repaired by the Contractor as per procedure Approved by the Engineer-in-charge. Nothing extra shall be paid on account of this.</p> <p>2.) GPR Survey may be conducted by contractor before the execution of work to avoid any damage to the underground buried architectural features or services. Nothing extra shall be paid on account of GPR survey and/or making good any damage to underground buried architectural features or services.</p>				
1.5.1	All kinds of soil	6300Cum	260.87	Cum	16,43,481
1.6	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 500 m and for all lift.	3500Cum	196.43	Cum	6,87,505

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
1.7	<p>Excavation over ground (Manual means) along the perimeter of the building including courtyard revealing the underground features like sewer, storm water pipe and tunnels or any other architectural feature. This also allows examination of vertical face of foundation wall for any distress & discrepancies (exceeding 30 cm in depth, 1.50m in width as well as 10 sqm on plan) upto 2 m depth around heritage structure without damaging the buried architectural part of the building including screening collecting and depositing the usable objects/ articles at the specified place including getting out the excavated soil and back filling the same as per direction of the Engineer-in-charge.</p> <p>Note: - 1.) Any damages to the structure shall be repaired by the Contractor as per procedure Approved by the Engineer- in-charge. Nothing extra shall be paid on account of this.</p> <p>2.) GPR Survey may be conducted by contractor before the execution of work to avoid any damage to the underground buried architectural features or services. Nothing extra shall be paid on account of GPR survey and/or making good any damage to underground buried architectural features or services.</p>	3200Cum	1618.85	Cum	51,80,320
1.8	<p>Removal of vegetation/ficus/dead roots growth by removal of root system embedded in masonry, cutting stem and branches carefully and safe disposal of cut portion at designated dumping site including dismantling of necessary masonry whenever and wherever required and making good the same as directed by Engineer-in-charge etc.</p>	500Nos.	2115.65	Nos.	10,57,825

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>complete. Manual removal of vegetation (vegetation, dead roots, climbing plants, creepers) from walls, parapet, ducts, floor etc. in a skilled and careful manner, using appropriate tools and means and without causing any damage to the adjoining parts, including carrying and stacking the dismantled materials including lift/lower at all heights, levels and lead up to 500 mtrs as directed by the Engineer-in-charge. The exposed surfaces shall be coated with a paste made from ammonium sulfamate crystals or with "vegetation remover" available in market. In this condition the root system shall be left to absorb and die. no portion of dead plant shall be left within the core. As they decay, they will remove support and create voids and weaknesses in the wall. Pulling of a well-established mat of vegetation must be resisted. Tamping, grouting, pointing and resetting of brick / stones especially on wall top, must all be anticipated as remedial work. Herbicides like Glyphosates (Glycin 41%), Paraquat, 2-4D (Disodium salt), Atrazine (wetable powder etc.), shall be sprayed over the leaves of the plants to kill the plants by blocking the photosynthesis activity.</p> <p>Note:- All plants in an area upto 1 sqm shall be considered as 1 Nos. The rate includes all above activities, materials required and nothing extra shall be paid.</p>				
1.9	<p>Providing floor protection. Providing laying and removing floor protection sheet, 12 mm PP sheet cover over 8 mm Ply Board to avoid scratches or any damage to existing</p>	2000Sqm	433.95	Sqm	8,67,900

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	decorative flooring surface due to wear and tear as directed by Engineer in charge. Note: Measurement shall be made only one time at a given location to protect the floor for all types of the work.				
1.10	Earth work in excavation All kind of rock (blasting prohibited) by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out the rock for all lift and disposal of excavated rock to all lead, as directed by Engineer-in-charge. The excavated rock shall be the property of the contractor and contractor shall remove & dispose off the excavated rock away from the site as per the direction of the Engineer-in Charge. Note: The excavated rock shall be disposed of by the contractor to the approved crushing plant as approved by Engineer in charge and shall submit all the necessary registration certificate, e-Ravana etc to the Engineer-in-Charge before the disposal of the rock.	43500Cum	1341.98	Cum	5,83,76,130
1.11	Carriage of excavated/ stacked earth by mechanical transport including loading, if any, transporting, unloading to or from site for lead up to 10km beyond initial lead of 500 m and all lifts. Rate shall be inclusive of stacking and maintaining of earth as per GRIHA norms. Lead shall be measured from exit gate of site to entry gate of dumping site. (Note: The rate under this item is for transportation of earth from site to the designated storage yard or for transporting of earth from the storage yard to the site for filling	2800Cum	420.22	Cum	11,76,616

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	back as per direction of engineer in charge).				
2	Surface Cleaning & Treatment of Walls & Floors				
	<p>Note:-</p> <p>(1) The payment shall be made only for the surface area.</p> <p>(2) No extra charges shall be paid for decorative finishes, sandstone columns, brackets or any other architectural features.</p> <p>(3) Rates includes all operations and shall apply for all levels and heights including scaffolding unless specified in the Item.</p> <p>(4) Nothing extra over quoted rates shall be payable.</p> <p>(5) The payment shall be made as per the relevant item.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
2.1	Cleaning the sand stone surface and removing dirt, dust, bird dropping, grease, oil, algae, fungus, monkey beats, vegetation growth etc., including providing, applying and washing the surface with 5 % of liquid Ammonia chemical solution and other chemical cleaning agent as approved by Engineer-in charge, of approved brand and manufacturer, with the help of required scrubbers and cleaning of heavy soiled areas with machine operated air abrasion (Micro blasting / scrub blasting) mixed with desired quantity of fine silica as per the instruction of Engineer-in charge, without causing any scratching/ damage to the stone surface and finally washing the surface with clean water with the help of pressure jet machine, complete in all respect, including taking all precautions to safeguard ventilators, windows, doors etc. by suitable covering so as to avoid any damage to the building/ structure, all as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved excluding scaffolding which shall be paid as per the relevant agreement item. The payment shall be made only for the surface area. No extra charges shall be paid for decorative finishes, sandstone columns, brackets or any other architectural features).	87000Sqm	211.51	Sqm	1,84,01,370
2.2	Providing and applying antifungal wash treatment using 3% solution of sodium pentachlorophenate or any equivalent approved make with a Coverage of 100g per 10 sqm with appropriate dilution, of reputed brand and manufacturer, on cleaned sand stone surface at	87000Sqm	78.07	Sqm	67,92,090

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	desired locations as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding which shall be paid as per the relevant agreement item).				
2.3	Applying two or more coat of Ethyl Silicate chemical as approved by Engineer-in-Charge, of approved brand and manufacturer with a coverage of 1 lit in 5 sqm, with brush or spray on the existing stone masonry surface till there is no further absorption of chemical by stone surface, including protecting the applied surface from direct sunlight by suitable means during application, all complete as per direction of the Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding which shall be paid as per the relevant agreement item).	87000Sqm	329.77	Sqm	2,86,89,990
2.4	Applying breathable, non-reactive, antifungal water repellent silane/siloxane chemical as approved by Engineer-in-charge, of approved brand and manufacture, diluted with solvent mineral Turpentine oil in the ratio of 1:12 (One part of approved chemical : 12 part of Turpentine oil), on the existing sand stone masonry surface with two or more coats to give uniform application of chemical on the surface, all complete as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding which shall be paid as per the relevant agreement item).	149000Sqm	110.14	Sqm	1,64,10,860

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
2.5	Removal of dirt, rust, old paint, oil grease etc. from steel sections by mechanical scrapping, or by applying mild chemicals of approved make or by resorting to burning with blow lamps etc. Cleaned surface to be sand papered employing different grades of sand papers. (Rates includes all operations described above and shall apply for all levels and heights. Nothing extra over quoted rates shall be payable.) (The rate is inclusive of all materials & labours involved)	800Sqm	433.90	Sqm	3,47,120
2.6	Removing oil, grease, paint etc. in multiple layers from exposed stone wall or from rendered brick at all heights by scrubbing with nylon or phosphor bronze bristle brushes applying hot/warm water wherever necessitated. A gentle use of air abrasive tools shall be permitted as per direction of engineer- in charge. The surface shall finally be cleaned by hand rubbing and rinsing with clean water to obtain nearly original surface, colour and texture. (The rate is inclusive of all materials & labours involved.)	9000Sqm	566.00	Sqm	50,94,000
2.7	Cleaning of marble stone surfaces of stains, dirt, dust, soot, etc. by applying safe chemical (Mora pack) / non-ionic mild soap solution having pH value 7. The surface shall finally be rinsed with profuse clean water to obtain a nearly original surface.	2200Sqm	429.40	Sqm	9,44,680
2.8	Removing old paint in multiple application from wood without damage to the surface below (not by burning) by scrubbing after applying approved paint remover e.g. Methylene chloride or similar	18000Sqm	285.55	Sqm	51,39,900

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	paint removal chemical. Rate including fine scrubbing, and preparing the original wood surface to achieve smooth and void free, all complete as per the directions of the Engineer-in-charge.				
3	Structural Repair				
	Note:- (1) The rate includes all type of material, application, equipment & scaffolding unless specified in the Item.. (2) Rate is applicable for all height & level.				
3.1	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power-driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge				
3.1.1	75 mm average thickness	8000Sqm	378.83	Sqm	30,30,640
3.1.2	50 mm average thickness	8000Sqm	256.91	Sqm	20,55,280
3.2	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust-free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
3.2.1	Bars above 12 mm diameter	36000Meter	16.49	Meter	5,93,640
3.3	<p>Providing and apply two component low solvent, zinc rich epoxy resin based protective coating and anti-corrosive primer for steel.</p> <p>The product shall have properties as below:</p> <p>Density: ~2.15 Kg/L (Part A+B mixed, +27°C)</p> <p>Total Solid content: 76%</p> <p>Minimum Zinc Content in mix: 66 %</p> <p>Minimum Zinc Content in dry Film: 85%</p> <p>Tensile Adhesion: > 2Mpa as per ASTM D4541</p> <p>Tack Free in 20min at 30 Degree</p> <p>Consumption: 0.150–0.250 Kg./m2</p>				
3.3.1	Bars above 12 mm diameter	40000Meter	24.10	Meter	9,64,000
3.4	Corrosion protection of unexposed old reinforcement on non-spalled concrete by providing and applying Migratory corrosion inhibiting coating, the MCI coating shall be amino alcohol based transparent in colour. The material shall have Ph =11, Viscosity Should be less then 25 cps.	40000Sqm	614.95	Sqm	2,45,98,000

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
3.5	<p>Epoxy Based Chemical Anchoring Adhesive for shear connectors Providing & Apply an epoxy resin based, 2-part, thixotropic, high performance anchoring adhesive for anchoring reinforcing bars in both cracked and un-cracked concrete dry or damp concrete with wherever required in RCC members including power drilling, cleaning of holes, then rebars shall be inserted in holes that shall be filled with epoxy to ensure the bond complete as per site requirement and directions of Engineer-in-charge. the reinforcement bar shall be paid in the relevant agreement item.</p> <p>Product characteristics shall have Long open Time, Can be used in damp concrete, High load capacity, ETA for anchoring in cracked concrete, ETA for post installed rebar connections, Seismic tested (C1 & C2), Suitable for contact with drinking water, Fire resistant and Styrene-free.</p> <p>Product requirements: Compressive Strength more than 95 N/mm² as per ASTM D 695 or per EN 196-1, Tensile Strength in Flexure ~45 N/mm²(7 days, +20 °C) as per ASTM D 790/ 66 N/mm² or as per EN 196-1 , Tensile Strength ~23 N/mm² /(7 days, +20 °C) as per ASTM D 638, Modulus of Elasticity in Tension more than 5500 N/mm² (7 days, + 20 °C) as per ASTM D 638 or as per EN ISO 527-2.</p>				
3.5.1	For dia upto 16 mm and depth of hole upto 125 mm.	60000Nos.	205.85	Nos.	1,23,51,000

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
3.6	<p>Providing, fixing, and strengthening structural Beam by providing & fixing CARBON Laminate on the bottom and sides of Beam as recommended by the Engineer-in-charge. The carbon laminate Carboplate with fibre content of 68%; modulus of elasticity(ASTM D-3039): 165 GPa & tensile Strength(ASTM D-3039): ≥ 3100 MPa & Ultimate elongation of 1.8 % shall be ETA Approved under category of strengthening of Concrete elements ETA-21/0276, shall complied with Standard of FIB 14 and ACI-440-2R, The laminate shall be Pultruded CFRP plate of 50 mm wide and 1.4 mm thick for structural strengthening of RCC with having properties of E-modulus: 1.65×10^5 N/mm²; tensile strength ≥ 2800 N/mm² / 3100 N/mm² . The Laminate shall be applied with Compatible epoxy adhesive of same make as of Carbon Laminate. epoxy shall have Compressive Strength >90 N/mm² / 80N/mm²(7 days) according to ASTM C579; Shear Strength >10 N/mm² (7 days at 250C) according to FIP 5.15 / > 25 MPa (FIP 9/2) ; Bond Strength ≥ 2.5 N/mm² / 3N/mm² according to EN1542. The epoxy and Carbon laminate shall be from same manufacturer Surface preparation: Grinding concrete substrate, cleaning it with wire brush removing oil, laitance if present, rounding sharp edges to min 25 mm radius etc. complete. Profiling: Providing & Applying compatible corrosion-resistant paint on the exposed reinforcement if required. Applying bond coat on the prepared substrate, Filling the holes and uneven surfaces with high-strength epoxy mortar etc.</p>	36000RMT	4050.65	RMT	14,58,23,400

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	complete if required. Carbon Laminate: Providing & Applying the epoxy adhesive over concrete and laminate both, providing, cutting and applying the carbon fibre Laminate to size i.e. 50 mm wide and 1.4 mm thick. Sand pasting: Paste the Quartz sand on it to make the surface rough to take any further finishes. Mode of measurement: Per Rmt of sheet applied and not surface area of Concrete application . The rate includes all type of material, application, equipment & scaffolding etc complete. Rate is applicable for all height & level.				
3.7	Providing, fixing, and strengthening structural Beam by providing & fixing CARBON Laminate on the bottom and sides of Beam as recommended by the Engineer-in-charge. The carbon laminate Carboplate with fibre content of 68%; modulus of elasticity(ASTM D-3039): 165 GPa & tensile Strength(ASTM D-3039): ≥ 3100 MPa & Ultimate elongation of 1.8 % shall be ETA Approved under category of strengthening of Concrete elements ETA-21/0276, shall complied with Standard of FIB 14 and ACI-440-2R, The laminate shall be Pultruded CFRP plate of 100 mm wide and 1.4 mm thick for structural strengthening of RCC with having properties of E-modulus: 1.65×10^5 N/mm ² ; tensile strength ≥ 2800 N/ mm ² . The Laminate shall be applied with Compatible epoxy adhesive of same make as of Carbon Laminate. The epoxy shall have Compressive Strength >90 N/mm ² /	24000RMT	6196.85	RMT	14,87,24,400

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	80N/mm ² (7 days) according to ASTM C579; Shear Strength >10 N/mm ² (7 days at 250C) according to FIP 5.15; Bond Strength >= 2.5 N/mm ² / 3N/mm ² according to EN1542. The epoxy and Carbon laminate shall be from same manufacturer Surface preparation: Grinding concrete substrate, cleaning it with wire brush removing oil, laitance if present, rounding sharp edges to min 25 mm radius etc. complete. Profiling: Providing & applying compatible corrosion-resistant paint on the exposed reinforcement if required. Applying bond coat on the prepared substrate, Filling the holes and uneven surfaces with high-strength epoxy mortar etc. complete if required. Carbon Laminate: Providing & applying the epoxy adhesive over concrete and laminate both, providing, cutting and applying the carbon fibre Laminate to size i.e 100 mm wide and 1.4 mm thick. Sand pasting: Paste the Quartz sand on it to make the surface rough to take any further finishes. Mode of measurement: Per Rmt of sheet applied and not surface area of Concrete application . The rate includes all type of material, application, equipment & scaffolding etc complete. Rate is applicable for all height & level.				
3.8	Providing and applying epoxy bonding agent for bonding old to new concrete for structural members. Product requirements: Complies with ASTM C 881 Type II Grade 2 Class B+C or as per EN 1504-4 guideline	19200Sqm	629.45	Sqm	1,20,85,440

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
3.9	Providing and applying a factory made, pre-batched one component polymer modified cementitious, dual shrinkage compensated, high strength patch repair mortar. The product shall have compressive strength ≥ 45 N/mm ² (28 days) according to ASTM C 109. The rates shall include the surface preparation and application of mortar in 25mm thickness or as required with approval of Engineer-in-charge.	37000Sqm	1969.80	Sqm	7,28,82,600
3.10	Providing and placing in position Micro-concrete, which shall be cement based prepacked single component, chloride free, non-shrink, free flow, self-compacting, ready to use after mixing water in specified proportion obtained from approved manufacturer as per specification and directions of Engineer-in-charge (Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/ tapping with a blunt metal instrument). Compressive strength ≥ 45 N/mm ² .	1300Cum	61557.60	Cum	8,00,24,880
3.11	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of stone masonry/RCC as per specifications and direction of Engineer-In-charge complete in all respect.				
3.11.1	SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer	18000Sqm	141.20	Sqm	25,41,600

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
3.12	Filling voids/honey comb with high pressure injection grouting of cement grout slurry mixed with Aluminium Free Expanding Grout Fluidifier admixture (@ 5% by weight of cement with w/p ratio in the range of 0.28 to 0.36) including drilling and fixing Nipples for pressure injection grouting of polymer cement grout etc. complete.	22600Sqm	247.95	Sqm	56,03,670
3.13	Strengthening structural elements by providing & fixing one directional, high strength, Uni directional 400 GSM CARBONFIBER WRAP, The Carbon Wrap shall CFRP product used shall have minimum requirements: Tensile strength (nominal) = 4900N/mm ² ; Tensile E - modulus = 250000 N/mm ² / 240000N/mm ² ; elongation at break (nominal): 1.7 % ; fabric design thickness = 0.22 +_3 mm. The impregnating Epoxy and CFRP shall be from same manufacture. Surface preparation: Grinding concrete substrate, cleaning it with wire brush removing oil, laitance if present, rounding sharp edges to min 25 mm radius etc. complete. Profiling: providing & applying compatible primer on prepared substrate, Filling the holes and uneven surface with high strength epoxy putty etc. complete IF required. Wrapping: Providing & applying first coat of Saturant, cutting the carbon fiber sheet of 400 GSM of 0.250 mm thickness to size, wrapping the fiber sheet to structural element at desired orientation using tamping roller to avoid any air voids etc. Complete. Sandpasting: Providing & Applying second coat of Saturant after min.12 hrs, rectify air voids if any pastethe	12000Sqm	5777.95	Sqm	6,93,35,400

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	rives and on it to make surface rough to take any further finishes (Mode of measurement: per sq.mt of sheet applied and not surface area of Concrete application) The rate includes all type of material, application, equipment & scaffolding etc complete. Rate is applicable for all height & level.				
3.14	Structural steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.	1650000Kg	206.80	Kg	34,12,20,000
3.15	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	1177500Kg	117.61	Kg	13,84,85,775
3.16	Extra for providing SS anchor Fasteners (RCC / Brick) - M-10x150mm including all necessary adhesive, screw bolt, nut and all complete conforming is:304	30000Nos.	162.55	Nos.	48,76,500
3.17	Extra for providing SS anchor Fasteners (RCC / Brick) - M-10x200mm including all necessary adhesive, screw bolt, nut and all complete conforming is:304	20000Nos.	216.70	Nos.	43,34,000
4	Concrete work				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
4.1	<p>Providing and laying in position ready mixed or site batched design mix cement concrete for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of cantering, shuttering and finishing as per direction of the engineer-in-charge; for the following grades of concrete.</p> <p>Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the minimum specified cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.</p>				
4.1.1	All works upto plinth level :				
4.1.1.1	Concrete of M15 grade with minimum cement content of 240 kg /cum	700Cum	9005.83	Cum	63,04,081
4.2	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-	100Cum	9845.31	Cum	9,84,531

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	charge. (The panel shuttering work shall be paid for separately).				
5	Reinforcement cement concrete				
	Note:- (1) Excess/less cement used as per design mix is payable/recoverable separately.				
5.1	Self-compacting Concrete (SCC) of M 40 grade - for All floor, all level, all height/ depth Providing and laying in position, machine batched and machine mixed, machine vibrated (if required), design mix Ready mix Self Compacting Cement Concrete (SCC) produced in fully automatic batch mixed plant of M 40 grade as per IS - 10262, approved design mix using Ordinary Portland cement with adding cementitious material like fly ash, GGBFS/ Alccofine/ silica fume etc. Design mix shall be approved by Engineer-in-charge. Slump flow, viscosity, pass ability, shall be as per IS10262 for fair finished reinforced cement concrete work including transportation of concrete through transit mixer to site of laying, pumping by any means, finishing, curing, vibrating (if required) for all leads, all floor, all levels, all height/ depth, admixtures conforming to IS 9103 as per designed proportions to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>The Mix design shall comply with IS 4926, IS 456, IS - 10262 design parameters and IS 516 & BS EN 12350 testing parameters (for parameters mentioned) and shall be got approved by Engineer-in-charge before execution of the item. The rate shall include cost of all specified materials and operations at all levels and heights, but exclude the cost of cantering, shuttering and reinforcement which shall be paid under relevant agreement items.</p> <p>Note -</p> <p>1. This item shall also include cost of transportation of concrete from plant to site and within site.</p> <p>2. Item includes cost of cement as approved in design mix. Nothing extra shall be paid or recovered on account of quantity of cement.</p>	7920Cum	10154.30	Cum	8,04,22,056
5.2	<p>Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.</p> <p>Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
5.2.1	All Works up to plinth level				
5.2.1.1	Providing M-25 grade concrete BMC/RMC. (Note:- Cement content considered in M-25 is @ 330 kg/cum).	700Cum	9525.57	Cum	66,67,899
5.2.1.2	Providing M-30 grade concrete instead of M-25 grade BMC/RMC. (Note:- Cement content considered in M-30 is @ 350 kg/cum).	3000Cum	9676.85	Cum	2,90,30,550
5.2.1.3	Providing M-35 grade concrete instead of M-25 grade BMC/RMC. (Note : Cement content considered in M-35 is @ 370 kg/cum).	200Cum	9828.18	Cum	19,65,636
5.3	All works above plinth level up to floor V level				
5.3.1	Providing M-25 grade concrete BMC/RMC. (Note:- Cement content considered in M-25 is @ 330 kg/cum).	1500Cum	9881.99	Cum	1,48,22,985
5.3.2	Providing M-30 grade concrete instead of M-25 grade BMC/RMC. (Note:- Cement content considered in M-30 is @ 350 kg/cum).	600Cum	1013.56	Cum	6,08,136
5.3.3	Providing M-35 grade concrete instead of M-25 grade BMC/RMC. (Note : Cement content considered in M-35 is @ 370 kg/cum).	500Cum	10184.61	Cum	50,92,305
5.3.4	Add for using extra cement in the items of design mix over and above the cement content therein	1800MT	7351.06	MT	1,32,31,908
5.4	Centring and shuttering including strutting, propping etc. and removal of form for :				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
5.4.1	Foundations, footings, bases of columns, etc. for mass concrete.	2500Sqm	393.01	Sqm	9,82,525
5.4.2	Walls (any thickness) including attached pilasters, buttersesses, plinth and string courses etc.	7100Sqm	844.35	Sqm	59,94,885
5.4.3	Suspended floors, roofs, landings, balconies and access platform.	10000Sqm	929.28	Sqm	92,92,800
5.4.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	3900Sqm	738.01	Sqm	28,78,239
5.4.5	Columns, Pillars, Piers, Abutments, Posts and Struts.	3700Sqm	963.41	Sqm	35,64,617
5.4.6	Small lintel not exceeding 1.5m clear span, moulding as in cornicem window sills, string course, bands, coping, bed playes, anchor blocks and the like	500Sqm	393.01	Sqm	1,96,505
5.5	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).				
5.5.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	1000Sqm	385.14	Sqm	3,85,140
5.6	Reinforcement for R.C.C.work including straightening, cutting, bending, placing in position an binding (with GI wire) all complete for all leads and lifts, all level,all floors including the basement				
5.6.1	Mild steel and Medium Tensile steel bars	300000Kg	107.33	Kg	3,21,99,000
5.6.2	Thermo-Mechanically Treated bars (Fe 500 D)	1200000Kg	108.09	Kg	12,97,08,000

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
6	Masonry				
	Note:- (1) Rates includes all operations and shall apply for all levels and heights including scaffolding unless specified in the Item. (2) Nothing extra over quoted rates shall be payable.				
6.1	In situ consolidation of loose/damaged brick masonry including carefully dismantling of brick work, cleaning of mortar and reconsolidating using matching bricks with the original as per site condition with lime mortar 1:2 (1 lime : 2 coarse sand).	110Cum	10652.85	Cum	11,71,814
6.2	Stitching of cracks in brick masonry with stone of size 450x200x50 mm including chasing, grooving the brick masonry and inserting the stone lintel using lime mortar 1:1:1 (1 lime : 1 surkhi : 1 coarse sand) at all heights and levels including scaffolding work complete as per direction of engineer-in-charge.	300Nos.	947.55	Nos.	2,84,265
6.3	Stitching of cracks using 12mm dia. and 2' long SS 316 threaded rods. The rods Shall be applied with a layer of anti-corrosive paint, the ends of the rod to be bent at 6" each then to be inserted into the masonry after drilling a hole and making a 1/2" groove in the masonry, packing with 1:3 lime lime mortar at all heights and levels including scaffolding work complete as per the directions of Engineer in-charge.	500Nos.	1327.10	Nos.	6,63,550
6.4	Providing & fixing Ornamental Matching brick masonry in mouldings & cornices (not more than 20 cm in projection and 20 cm in depth as per conservation	6400RMT	1601.60	RMT	1,02,50,240

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	practice) in lime mortar similar to the existing traditional lime mortar (lime - sand - surkhi 1:1:1) after removing damaged & out of plumb masonry from vertical surfaces, including providing sufficient anchorage to new cornice band in the wall & adjacent cornice band area using 8mm SS pins or any other method as directed by the Engineer-in-charge. Cornice bands to be finished with 1 lime: 2 sand: 1 surkhi plaster of required thickness & necessary carvings to achieve details & design as per the original. Sample of the cornice band to be shown to Engineer-in-charge for necessary approvals before finishing. Cornice band to be finished using 1 lime: 2 sand plaster of thickness not more than 10mm & finishing with 5mm thick Lime putty coat taking utmost care that the original details are not lost. Item to include all necessary carvings, tools, at all heights and levels including scaffolding work complete				
6.5	Grouting of the masonry cracks by using lime-based slurries (slaked lime & fine sand (<1400 microns)) with pozzolanic additives (0.5% polymer fluidizer) including cost of low pressure grout pump & nipples (inserting nozzles and low pressure pumping to consolidate the walls) at all heights and levels including scaffolding work complete	12000Kg	104.85	Kg	12,58,200
6.6	Brick work with common burnt clay F.P.S. (non-modular) bricks of shape and size as per the (original/existing) matching bricks in the building class designation 7.5 in superstructure above plinth level				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	up to floor V level in all shapes and sizes in :				
6.6.1	In Lime mortar 1:2 (1 Lime: 2 Sand)	200Cum	12174.80	Cum	24,34,960
6.7	Providing and laying brick work with modular/ Non modular cement-based fly ash bricks of required size conforming to IS:16720, class designation 10 average compressive strength with ready mix polymer modified cement mortar in super structure up to floor V level. Note: Fly Ash cement brick should have minimum 40 percent fly ash content. at all heights and levels including scaffolding work complete	1600Cum	11425.30	Cum	1,82,80,480
6.8	Providing and laying factory made Precast concrete solid blocks of required thickness of grade M15 made of C&D waste from approved manufacturer and fixed with ready mix polymer modified cement mortar as per manufacturer's specification including, racking, finishing, curing, scaffolding for all floor, all height all level etc complete and as directed by Engineer in charge.	200Cum	10154.30	Cum	20,30,860
7	Stone Works				
	Note:- (1) Item to include all necessary tools, hardware, mortar and fixing glue etc complete & at all heights and levels including scaffolding work complete (2) Item to include filling joints with lime slurry, curing, grinding, polishing and cleaning.				
7.1	Staircase Repair				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
7.1.1	Dismantling/Removal of the solid stone blocks from staircase without causing any damage to the adjacent member and with proper support system.	50Cum	2707.85	Cum	1,35,393
7.1.2	Providing and fixing of the new stone block in lime mortar 1:2 (1Lime :2 Sand) at staircase at the site laying support propping & providing cantilevering joints well as old stone for proper bonding including finishing of edges in all respect with lime. all complete as per the direction of Engineer-in-charge. (In staircase flooring a single piece of stone shall be used in tread and riser)	50Cum	76419.20	Cum	38,20,960
7.2					
7.2.1	Removal/dismantling of chipped and deteriorated stone masonry with hard stone including cleaning of mortar, dust etc.	1200Cum	7187.45	Cum	86,24,940
7.2.2	Stone masonry with available hard stone including, cleaning of mortar and with lime mortar 1:2 (1 lime : 2 sand) as per the direction of engineer-in-charge.	600Cum	8935.14	Cum	53,61,084
7.2.3	Providing and fixing the solid stone block masonry work (Stone shall be of same texture as in existing masonry) in lime mortar 1:2 including dressing of stone etc. as per the direction of engineer-in-charge at all height and lift.	600Cum	68448.19	Cum	4,10,68,914
7.3	Stone work plain ashlar in arches in super structure upto floor V level in Lime mortar 1:3 (1 Lime : 3 sand) including centering, shuttering and pointing with white lime mortar 1:2 (1 lime: 2 stone dust) with an admixture of pigment matching the stone shade.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
7.3.1	One face dressed				
7.3.1.1	Red sand stone	50Cum	75427.83	Cum	37,71,392
7.4	Stone work plain ashlar in domes, in super structure upto floor V level in Lime mortar 1:3 (1 Lime : 3 sand) including centering, shuttering and porking with white lime mortar 1:2 (1 Lime : 2 stone dust) with an admixture of pigment matching the stone shade.				
7.4.1	One face dressed				
7.4.1.1	Red sand stone	50Cum	114527.27	Cum	57,26,364
7.4.1.1	White sand stone	50Cum	128781.42	Cum	64,39,071
7.5	Removing / dismantling the existing damage red sandstone door frames & architraves or its part & replacing the damaged portion with fixing of new decorative red sandstone door frames & architraves as per the existing door frame. Before fixing, sample of the terracotta frame/ architrave shall be got approved by Engineer-in-charge. It includes all necessary anchoring details, scaffolding, etc complete. Only the new stone work shall be measured.	100Cum	69763.80	Cum	69,76,380
7.6	Providing and fixing factory made Glass Fiber Reinforced plastics (F.R.P.) chajja 4 mm thick of required colour, size and design made by Resin Transfer Moulding (RTM) Machine Technology, resulting in void free compact laminate in single piece, having smooth gradual slope curvature for easy drainage of water and duly reinforced by 2 nos vertically and 1 nos horizontally 50x2 mm thick M.S. flat with 12 mm in built hole for grouting on the existing wall along with the 50 mm flanges duly	200Sqm	5067.05	Sqm	10,13,410

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	inserted and sealed in the wall complete in one single piece casted monolithically, including all necessary fittings. The FRP Chajja should be manufactured using unsaturated Polyester resin as per IS: 6746, duly reinforced with fibre glass chopped strand mat (CSM) as per IS: 11551 complete with protective Gel coat U/V coating on Top for complete resistance from the extreme of temperature, weather & sunlight (Only plan area of chajjas shall be measured for making payment).				
7.7	Providing & fixing 50 to 75 mm thick stone chajja in lime sand mortar 1:2 including making gola at junction with wall in lime concrete, 40% lime mortar & 20mm brick aggregate nominal size graded aggregates, drip course etc complete including 20mm thick plastering in Lime Surkhi Mortar 1:2 (1 Lime : 2 Surkhi) where ever required, racking of joints, curing etc complete.	150Sqm	4651.20	Sqm	6,97,680
7.8	Removal & refixing of stone chajja 50 to 75mm thick, stone used to be similar to the existing ones at the site, cutting in proper shape & providing interlocking keys/appropriate fixing mechanism in the new as well as old stone for proper bonding including finishing the edges in all respects in lime surkhi (1 lime :2 surkhi).	150Sqm	1760.35	Sqm	2,64,053
7.9	Stonework plain in copings, cornices, string courses and plinth courses upto 75mm thick in Lime mortar 1:2 (1 Lime : 2 sand), including pointing with lime 1:1(1 Lime: 1 Stonedust) with necessary				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	additives and pigment matching with the stone shade.				
7.9.1	Red Sandstone	1200Cum	131906.85	Cum	15,82,88,220
7.9.2	White Sandstone	20Cum	130098.95	Cum	26,01,979
7.10	Providing and fixing stone dowels 10x5x2.5cm cut to double wedge shape as per design in lime mortar 1:2(1Lime :2 Fine sand) with necessary additives including making necessary chases.	50Nos.	54.67	Nos.	2,734
7.11	Removing / dismantling the existing damage red sandstone brackets or its part & replacing the damaged portion with fixing of new decorative red sandstone brackets or its part as per the existing sandstone brackets. Before fixing, sample of the terracotta brackets shall be got approved by Engineer-in-charge. It includes all necessary anchoring details, scaffolding, etc complete. Only the new stone work shall be measured.	250Cum	98762.60	Cum	2,46,90,650
7.12	Extra for stone work ashlar sunk or moulded or sunk and moulded or carved in :				
7.12.1	Circular or polygonal pillars	25Cum	10729.45	Cum	2,68,236
7.13	Providing and fixing or restoration of existing red sandstone hand rail, balustrades and other railing items of the same design and size as per the original railing on site. Item to include fabricating the hand rail as per the original details & design on site, including preparing necessary base for fixing the railing, fixing the same using S.S. dowels on staircases or other places, as directed by the Engineer-in-charge. Item to include getting samples of railing approved	20Cum	108510.80	Cum	21,70,216

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	from the Engineer-in-charge before fixing the same on site. It includes all necessary tools, hardware, mortar and fixing glue etc complete.				
7.14	Fixing or restoration of existing red sandstone hand rail available on site. Item to include preparing necessary base for fixing the railing, fixing the same using S.S. dowels on staircases or other places, as directed by the Engineer-In-charge. Item to include all necessary tools, hardware, mortar and fixing glue etc complete.	100RMT	1979.70	RMT	1,97,970
7.15	Providing dry trap/ rubble stone soling including hand packing and compacting etc. Complete	25Cum	1468.10	Cum	36,703
7.16	Providing and laying red Providing and fixing surface drain covers with red sand stone of approved quality and type to match the existing surface drain covers found on site as directed by the Engineer-in-charge. It include cutting the red sand stone as per the sizes of the existing covers including providing the necessary finishing etc complete. stone dado upto required height as per the original details found on site or as directed by the Engineer-in charge. The dado to be fixed on Lime Sand Surkhi mortar base in proportions (1:1:1). Item to include filling joints with lime slurry, curing, grinding, polishing and cleaning.				
7.16.1	using 30 to 50 mm thick red sand stone	400Sqm	7805.80	Sqm	31,22,320
7.17	Sand Stone Column				

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
7.17.1	Removing / dismantling the existing damage red sandstone columns or its part & replacing the damaged portion with fixing of new red sandstone columns or its part as per the existing red sandstone column. Before fixing, sample of the terracotta column be got approved by Engineer-in-charge. It includes all necessary anchoring details, scaffolding, etc complete. Only the new stone work shall be measured.	20Cum	189618.55	Cum	37,92,371
7.17.2	Removing / dismantling the existing damage white sandstone columns or its part & replacing the damaged portion with fixing of new white sandstone columns or its part as per the existing white sandstone column. Before fixing, sample of the terracotta column be got approved by Engineer-in-charge. It includes all necessary anchoring details, scaffolding, etc complete. Only the new stone work shall be measured.	20Cum	192470.15	Cum	38,49,403
7.18	Providing & fixing fine finished matching Stone Jali as per design/pattern matching with the existing and 75 mm to 100 mm thick.				
7.18.1	Using Dholpur Red sand stone	1800Sqm	23323.80	Sqm	4,19,82,840
7.19	Providing & Fixing stone moulding in the matching stone and design.				
7.19.1	Width from 15 cm to 20 cm	500RMT	3269.60	RMT	16,34,800
7.20	Fixing or restoration of existing stone jali available on site. Item to include preparing necessary base for fixing the same using s.s. dowels, as directed by the Engineer-In-charge. Item to include all necessary tools, hardware, mortar and fixing glue etc complete. (mode of	600Sqm	2414.75	Sqm	14,48,850

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	measurement elevational area of jali to be measured).				
7.21	Plastic removal of decayed stone surfaces by careful removal of decayed stone using hard brushes, light hammer and chisel or mild abrasive tools. Marking out the smallest cubical or cuboidal shape or a regular geometric shape, as instructed by Engineer-in-charge. Drilling in both stones on inner side for inserting SS316 dowels of 2 to 4 mm dia and 50 to 60mm long upto 4 numbers, joining both stones having rough surfaces for holding the glue. Providing and supplying the best fitting stone for filling the void and joining with glue compatible stone by applying it on both surfaces. The pointing upto 2 mm with is to done by using epoxy mortar made of glue and stone powder matching with the surrounding stone. This include curing, supporting, packing for ensuring proper contact and other measures as per the instructions of Engineer-in-charge. Stone repair 1Cudm will be considered as 1 nos.	500Nos	2231.10	Nos	11,15,550
7.22	Plastic repair of small broken and damaged stone at various locations up 1sq dm by removal of decayed stone surfaces by careful removal of decayed stone to reach hard surface by using hard brushes, light hammer and chisel or mild abrasive tools. Making straight lines of the irregular void to a regular geometric shape, as instructed by Engineer-in-charge. Drilling in the stones for inserting SS316 dowels of 2 to 4 mm dia and 30 to 50mm long upto 2 numbers for holding the	500sqdm	1742.90	sqdm	8,71,450

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	glue. Providing and applying a paste made of glue and stone dust of matching colour, matching the missing shape by filling the void. This include curing, supporting, packing for ensuring proper contact and other measures as per the instructions of Engineer-in-charge. This is for stone repair upto 1 sqdm of required thickness.				
8	Woodwork				
8.1	Taking out existing door, windows and clerestory window shutters including chowkhats, holdfast etc. complete and stacking within 500 metres lead:				
8.1.1	Of area 3 sq. metres and below	754Nos.	143.81	Nos.	1,08,433
8.1.2	Of area beyond 3 sq. metres	786Nos.	189.31	Nos.	1,48,798
8.2	Refixing of repaired door shutters including frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge	3400Nos.	430.04	Nos.	14,62,136
8.3	Providing wood work in frames and wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length. Second class Indian teak wood	50 Cum	143262.76	Cum	71,63,138
8.4	Providing and replacing of the damage or deteriorated wooden section of the doors, windows, or furniture by providing same quality of wooden sections of door, windows, or furniture (Note: Payment shall be made only for the replaced quantity of the wood).	1200Sqm	4120.96	Sqm	49,45,152
8.5	Consolidation of woodwork with sawdust and polyester resin of low viscosity, wherein the work needs	11100Sqm	925.05	Sqm	1,02,68,055

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	to completed in similar application and then smoothen and finished as per the Engineer-in-charge.				
8.6	Renewing glass panes and refixing existing wooden fillets: Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)				
8.6.1	Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	2000Sqm	1093.04	Sqm	21,86,080
8.7	French spirit polishing :				
8.7.1	Two or more coats on new works including a coat of wood filler	8000Sqm	447.23	Sqm	35,77,840
8.8	Polishing on old wood work with ready mixed wax polish of approved brand and manufacture				
8.8.1	Old Work	18000Sqm	100.02	Sqm	18,00,360
8.9	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete :				
8.9.1	100x85x5.5 mm (heavy type)	5000Nos.	206.85	Nos.	10,34,250
8.10	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete:				
8.10.1	200x10 mm	3300Nos.	359.18	Nos.	11,85,294
8.11	Providing and fixing bright finished brass door latch with necessary screws etc. complete :				
8.11.1	300x16x5 mm	400Nos.	322.91	Nos.	1,29,164
8.12	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, fixing with butt hinges of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. (Note: - Butt				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	hinges and necessary screws shall be paid separately)				
8.12.1	Second class teak wood				
8.12.1.1	35 mm thick shutters	500Sqm	4120.96	Sqm	20,60,480
8.13	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick:				
8.13.1	Second class teak wood	200Sqm	3330.48	Sqm	6,66,096
8.13.2	Float glass panes				
8.13.2.1	4 mm thick glass pane (weight not less than 10kg/sqm).	300Sqm	2246.71	Sqm	6,74,013
8.14	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete:				
8.14.1	2nd class teak wood				
8.14.1.1	50 x 20 mm	3000Metre	272.35	Metre	8,17,050
8.15	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	300Nos.	227.05	Nos.	68,115
8.16	Providing and fixing bright finished brass hanging type floor door	70Nos.	121.92	Nos.	8,534

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	stopper with necessary screws, etc. complete.				
8.17	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS: 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	100Nos.	985.30	Nos.	98,530
8.18	<p>PU polish</p> <p>Providing and applying exterior grade water base Poly urethane (PU) clear matt finish/ glossy finish/ semi-gloss finish polish of approved make and shade for external/ internal wooden & veneered surfaces with open grain type. Polish work shall be carried out as following:</p> <p>1) Surface preparation with sand papering with different grade of sand paper up to satisfaction of Engineer-in-Charge.</p> <p>2) Base coat application with compatible wooden primer</p> <p>3) Stainer coat application of approved shade (for polish with shade)</p> <p>4) Three sub sequent coat of PU polish followed by sand papering with fine sand paper. Polish application shall be for all floor all level all height as per manufacturer's specification and as per drawing and as directed by Engineer in charge. Sample shall be approved by Engineer-in-Charge.</p>	10000Sqm	2591.50	Sqm	2,59,15,000
9	Flooring				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>Note:-</p> <p>(1) All stone samples to must be approved by the / Engineer- in-Charge</p> <p>(2) The Flooring Patter must be approved by the Engineer-in-Charge</p> <p>(3) Payment shall be made only for the area flooring is done. All the work at all heights and levels including scaffolding work complete</p>				
9.1	40 - 50 mm thick sand stone flooring over 20 mm (average) thick base of lime mortar 1:2 (1 Lime : 2 sand) with joints 3 mm thick, side buttered with Lime mortar 1:2 (1 Lime : 2 stone dust) admixed with pigment to match the shade of stone and pointing with same mortar and matching finish as per the site condition as approved by Engineer-in-charge.				
9.1.1	Red sand stone	26000Sqm	1650.61	Sqm	4,29,15,860
9.1.2	White sand stone	2800Sqm	1713.34	Sqm	47,97,352
9.2	<p>Epoxy terrazzo flooring</p> <p>Providing and laying 8 to10mm thick Resinous Epoxy terrazzo flooring and skirting of approved shade, approved type, and of approved pattern and of approved make using natural stone aggregate of any shade and size. System includes preparation of subsurface by using vacuum assisted floor scabbling / grinding/ scarify equipment, repairs of cracks etc, primer application, aluminium trims installation at joint and as per design, laying of toping, grinding, grouting, polishing, sealing, trims to be sticked with acrylic sealant all complete as per drawings, specification and direction of the</p>	6400Sqm	10742.00	Sqm	6,87,48,800

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	Engineer in Charge. Contractor shall prepare shop drawing, sample on site as suggested by Engineer in charge and as per approved shop drawing. Actual laid area of flooring and skirting shall be measured for payment.				
9.3	Repairing of existing terrazo flooring by chipping away the lose material and then filling the holes and uneven surfaces with high-strength epoxy plaster & matching stone chips of having same colour, texture etc as per the direction of Engineer in charge.	3200Sqm	3474.55	Sqm	1,11,18,560
9.4	Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of Lime mortar 1:2 (1 Lime : 2 sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :				
9.4.1	Ambaji white marble of superior quality	100Sqm	28067.05	Sqm	28,06,705
9.4.2	Black Zebra of superior quality	150Sqm	3007.77	Sqm	4,51,166
9.4.3	Udaipur green marble of superior quality	150Sqm	2433.92	Sqm	3,65,088
9.4.4	Pink plain marble of superior quality	150Sqm	2515.90	Sqm	3,77,385

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
9.5	Providing and laying full body, homogenous, Vitrified floor tiles of size 600 mm x 600 mm x 9 mm (min) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours, shades, texture/ finish (matt/ anti-skid/ satin/ polished/ glossy etc), fixed with cement based high polymer modified quick-set tile adhesive (water based) conforming to IS: 15477, in minimum 6 mm thickness including provision of groove up to 5 mm wide with PVC spacer, abrotap etc and grouting with Epoxy grout of approved make and shade. Tiles shall be laid over existing cement mortar bed or screed concrete, Rate shall be inclusive of vitrified tile (as per approved sample), adhesive for fixing, spacer, Epoxy grout etc complete. Screed concrete/ cement mortar bed shall be payable under relevant agreement item.	2200Sqm	1481.95	Sqm	32,60,290
9.6	Providing and laying full body, homogeneous, vitrified tile of size 600 x 1200 mm x 9 to 10mm thickness for wall, with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours, shade and texture/ finish (matt/ anti-skid/ satin/ polished/ glossy etc), in wall tile/ dado, skirting, riser of steps, laid on masonry/ plaster/ RCC/ gypsum board in any pattern with suitable cement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, including provision of groove up to 5 mm wide with PVC spacer, abrotap etc and grouting with	19000Sqm	1878.70	Sqm	3,56,95,300

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>epoxy grout of approved make and shade.</p> <p>Skirting shall be flushed with plaster or adjoining surface, with provision of 6 to 10mm wide groove between skirting and plaster or adjoining surface.</p> <p>Joints/ groove of flooring and skirting/ dado shall be matched. Shade of skirting must be match with flooring stone.</p> <p>Rate shall be inclusive of vitrified tile (as per approved sample), adhesive for fixing, Epoxy grout and plaster etc complete.</p>				
9.7	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :				
9.7.1	25 mm thick	150Sqm	1952.52	Sqm	2,92,878
9.8	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	100Sqm	2359.86	Sqm	2,35,986
10	Finishing				
	Note: All the work shall be for all heights and levels including scaffolding work complete				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
10.1	15 mm thick plastering in lime mortar 1:2 (1 Slaked lime : 2 Graded sand) in Single coat, including preparation of Lime mortar mix for application of plastering, lime mortar to be mix with lime water which is to be applied with natural additives like jaggery, soapnut, bhel fruit, etc Including Preparation of surface removing of dust and loose particles from the wall surface carefully and wetting the surface with the help of water properly, i/c scaffolding and curing etc complete.	95000Sqm	749.05	Sqm	7,11,59,750
10.2	12 mm thick plastering in lime mortar 1:2 (1 Slaked lime : 2 Graded sand) in Single coats, including preparation of Lime mortar mix for application of plastering, lime mortar to be mix with lime water which is to be applied with natural additives like jaggery, soapnut, bhel fruit, etc Including Preparation of surface removing of dust and loose particles from the wall surface carefully and wetting the surface with the help of water properly, i/c scaffolding and curing etc complete.	95000Sqm	714.50	Sqm	6,78,77,500
10.3	Providing and laying lime punning with a mixture of lime putty (screened and pressed through) and marble dust mixed with Gur, Bilgri, Urd, compatible fibres of approved make (wherever required) and other ingredients followed by grinding to fine consistency for smooth finishing of mix 1:1 (1 lime : 1 marble powder). with approved shade by Engineer-in-charge with lime compatible pigment. Reworking every alternate day for the next ten days and regular curing for keeping the surface wet.	190000Sqm	280.65	Sqm	5,33,23,500

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
10.4	Raking out joints of stone masonry surface to the required width and depth, with due care and precaution, by mechanical / manual means, including preparing and cleaning the surface for re-pointing/ refilling of joints, including disposal of rubbish as per Engineer-in-charge.	91000Sqm	72.61	Sqm	66,07,510
10.5	Raking out joints in lime or cement mortar or any other fillings from brick surface and preparing the surface for re-pointing or replastering, including scaffolding & disposal of rubbish to the dumping ground & all complete as per direction of Engineer-in-charge.	24000Sqm	72.61	Sqm	17,42,640
10.6	Recessed Pointing with lime surkhi mortar 1:1:1 (1 Slaked lime:1 surkhi:1 fine sand)				
10.6.1	In Stone Work	91000Sqm	334.40	Sqm	3,04,30,400
10.6.2	In Brick Work	24000Sqm	426.95	Sqm	1,02,46,800
10.7	CEMENT PLASTER IN TWO COATS				
10.7.1	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand) including scaffolding work complete.	5617Sqm	519.69	Sqm	29,19,099
10.7.2	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	2422Sqm	87.29	Sqm	2,11,416
10.8	White washing with lime to give an even shade :				
10.8.1	New work (three or more coats)	11000Sqm	39.14	Sqm	4,30,540

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
10.9	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
10.9.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	1000Sqm	171.47	Sqm	1,71,470
10.11	12 mm cement plaster finished with a floating coat of neat cement of mix :				
10.11.1	1:4 (1 cement: 4 fine sand)	5000Sqm	426.48	Sqm	21,32,400
10.12	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
10.12.1	Two coats	5000Sqm	143.11	Sqm	7,15,550
10.13	12 mm cement plaster of mix :				
10.13.1	1:4 (1 cement: 4 coarse sand)	19000sqm	358.13	Sqm	68,04,470
11	Dismantling of Civil Items				
	<p>Note:-</p> <p>(1) All the dismantled material shall be removed from the site by contractor at his own cost and nothing extra shall be paid.</p> <p>(2) The non-serviceable dismantled materials shall be disposed off by the contractor to the designated C&D Waste Recycling units within Delhi NCR region, and as approved by the Engineer-in-Charge. Processing charges paid to the C&D waste plant shall be reimbursed to the contractor on submission of the original invoices/ voucher and after verification by the Department.</p>				

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	(3) All the dismantling work includes for all heights and levels including scaffolding work complete				
11.1	Demolishing cement concrete manually/ by mechanical means including disposal of material as per direction of Engineer-in-charge.				
11.2.1	Nominal concrete 1:3:6 or richer mix (including equivalent design mix)	200Cum	2439.58	Cum	4,87,916
11.2	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material as per direction of Engineer-in-charge.	250Cum	3559.03	Cum	8,89,758
11.3	Demolishing R.B. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material as per direction of Engineer-in-charge.	250Cum	3184.21	Cum	7,96,053
11.4	Demolishing brick work manually/ by mechanical means including scaffolding, stacking of serviceable material and disposal of unserviceable material as per direction of Engineer-in-charge.				
11.4.1	In lime mortar	150Cum	853.36	Cum	1,28,004
11.4.2	In cement mortar	1200Cum	2064.71	Cum	24,77,652
11.5	Dismantling dressed stone work ashlar face stone work, marble work or precast concrete work manually/ by mechanical means including scaffolding, stacking of serviceable and disposal of unserviceable material as per direction of Engineer-in-charge. The non-serviceable dismantled				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	materials shall be disposed off by the contractor to the designated C&D Waste Recycling units within Delhi NCR region, and as approved by the Engineer-in-Charge. Processing charges paid to the C&D waste plant shall be reimbursed to the contractor on submission of the original invoices/ voucher and after verification by the Department.				
11.5.1	In lime mortar	250Cum	1467.46	Cum	3,66,865
11.6	Dismantling of the doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking:				
11.6.1	Of area 3 sq. metres and below	150Nos.	368.00	Nos.	55,200
11.6.2	Of area beyond 3 sq. metres	150Nos.	503.85	Nos.	75,578
11.7	Dismantling tile work in floors and roofs laid in cement mortar including stacking material.				
11.7.1	For thickness of tiles 10 mm to 25 mm	46000Sqm	73.56	Sqm	33,83,760
11.8	Dismantling stone slab flooring laid in Any mortar including stacking of serviceable material and disposal of unserviceable material .	23000Sqm	267.03	Sqm	61,41,690
11.9	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking :				
11.9.1	Thickness above 25 mm up to 40 mm	3000Sqm	90.55	Sqm	2,71,650
11.10	Dismantling cement asbestos or other hard board ceiling or partition walls including stacking of serviceable materials and disposal of unserviceable materials.	3000Sqm	56.47	Sqm	1,69,410

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
11.11	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including Scaffolding & disposal of rubbish to the dumping ground.	98000Sqm	54.77	Sqm	53,67,460
11.12	Dismantling of aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material within 500 meters lead as directed by Engineer-in-charge.	9000Sqm	56.47	Sqm	5,08,230
11.13	Dismantling of water proofing including china mosaic, bituminous layer, epoxy, mud phuska, brick tiles, plaster, etc everything from the terrace upto original roof layer along with dismantling ridges, hips, valleys and gutters, etc. and stacking the material all complete as per the direction of the Engineer-in-charge. Rates include the shifting of dismantled material from the terrace level to Ground level .	4000Cum	1000.35	Cum	40,01,400
11.14	Dismantling/Removal of MS steel jali/mash, grill, RS joist, channels, angles, tees, flats single, and built-up section or any other steel sections by carefully cutting/unfastening rivets/bolts, using necessary mechanical tools without causing any damage to the structure. Stacking of serviceable/unserviceable material within 500 meters lead as directed by Engineer-in-charge.	948000Kg	5.65	Kg	53,56,200
11.15	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material :				
11.15.1	75 to 80 mm dia Pipe	2000Meter	75.87	Meter	1,51,740
11.15.2	100mm dia Pipe	1000Meter	78.17	Meter	78,170

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
11.15.3	150 mm dia Pipe	1200Meter	80.43	Meter	96,516
11.16	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes as per direction of Engineer-in-charge:				
11.16.1	15 mm to 40 mm nominal bore	600Meter	150.13	Meter	90,078
11.16.2	Above 40 mm nominal bore	1000Meter	161.75	Meter	1,61,750
11.17	Dismantling of road gully chamber of various sizes including C.I. grating with frame including stacking of useful materials near the site and disposal of unserviceable materials including refilling the excavated gap.	300Nos.	960.85	Nos.	2,88,255
11.18	Dismantling of toilet and wash area traps of various sizes including C.I. grating with frame including stacking of useful materials near the site and disposal of unserviceable materials including refilling the excavated gap. Note: Removal of work must ensure extra care using advance tools to protect the existing structure and materials from damage. Dismantled materials must not be dragged on the floors to secure the structural finishes. Any damages to the structure will be required to be repaired by the agency confirming to the procedure laid down by the consultant from time to time.	300Nos.	138.20	Nos.	41,460
11.19	Dismantling of flushing cistern of all types (C.I./PVC/Vitreous China) including stacking of useful materials near the site and disposal of unserviceable materials .	500Nos.	112.30	Nos.	56,150
11.20	Dismantling of C.I. sluice valve including stacking of useful				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	materials within a lead of 500 metres				
11.20.1	Up to 150 mm diameter	600Nos.	320.20	Nos.	1,92,120
11.20.2	Above 150 mm diameter	1000Nos.	1186.74	Nos.	11,86,740
11.21	Dismantling of spindle fire hydrant including stacking of useful materials.	2000Nos.	727.94	Nos.	14,55,880
11.22	Dismantling of old M.S. pipes including removing the joints and all the Joinery stacking of useful materials near the site within 500 m lead and disposal of unserviceable materials into municipal dumps:				
11.22.1	150 mm diameter	3000Metre	98.67	Metre	2,96,010
11.22.2	200 mm diameter	600Metre	104.93	Metre	62,958
11.22.3	250 mm diameter	1000Metre	111.24	Metre	1,11,240
11.22.4	300 mm diameter	500Metre	117.51	Metre	58,755
11.22.5	350 mm diameter	1000Metre	135.35	Metre	1,35,350
11.22.6	400 mm diameter	700Metre	147.97	Metre	1,03,579
11.22.7	450 mm diameter	1000Metre	154.24	Metre	1,54,240
11.23	Dismantling of manhole including R.C.C. top slab, C.I. cover with frame, including stacking of useful materials near the site and disposal of unserviceable materials within 500 m lead as per direction of Engineer-in-charge: The non-serviceable dismantled materials shall be disposed off by the contractor to the designated C&D Waste Recycling units within Delhi NCR region, and as approved by the Engineer-in-Charge. Processing charges paid to the C&D waste plant shall be reimbursed to the contractor on submission of the original invoices/ voucher and after verification by the Department.				

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
11.23.1	Rectangular manhole 90x80 cm and 45 cm deep	300Nos.	2546.41	Nos.	7,63,923
11.23.2	Rectangular manhole 120x90 cm and 90 cm deep.	250Nos.	4485.30	Nos.	11,21,325
11.23.3	Rectangular arch type manhole 140x90cm and 2.45m deep.	300Nos.	8484.89	Nos.	25,45,467
11.23.4	Circular manhole 122 cm diameter and 1.68 m deep	200Nos.	6486.57	Nos.	12,97,314
11.24	Dismantling steel cylinder R.C. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site as per direction of Engineer-in-charge:				
11.24.1	Up to 600 mm diameter	3000Metre	696.77	Metre	20,90,310
11.24.2	Above 600 mm diameter	600Metre	1756.29	Metre	10,53,774
11.25	Dismantling asbestos cement pressure pipes including excavation and refilling trenches after taking out the pipes manually/ by mechanical means and stacking the pipes as per direction of Engineer-in-charge:				
11.25.1	Up to 150 mm diameter	3000Metre	332.88	Metre	9,98,640
11.25.2	Above 150 mm diameter	1200Metre	403.93	Metre	4,84,716
11.26	Dismantling of all types faucets/taps/ valves etc. including all attached accessories and including inserted support materials (steel etc.) manually/ by mechanical means and stacking the pipes within 500 metres and 10 metres height as per direction of Engineer-in-charge. Note: Removal of work must ensure extra care using advance tools to protect the existing structure and	600Nos.	251.20	Nos.	1,50,720

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	materials from damage. Dismantled materials must not be dragged on the floors to secure the structural finishes. Any damages to the structure will be required to be repaired by the agency confirming to the procedure laid down by the consultant from time to time.				
11.27	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-in-charge.	150Cum	420.92	Cum	63,138
11.28	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	200Sqm	267.03	Sqm	53,406
12	Road Work				
12.1	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in- Charge.				
12.1.1	With material conforming to Grade-II (size range 53 mm to 0.075 mm) having CBR Value-25	400Cum	2931.26	Cum	11,72,504

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
12.2	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well-prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	400Cum	2920.68	Cum	11,68,272
12.3	Providing and applying tack coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom.				
12.3.1	With medium setting bitumen emulsion				
12.3.1.1	On W.B.M / W.M.M. @ 0.4kg/sqm	1800Sqm	21.25	Sqm	38,250
12.3.1.2	On bituminous surface (DBM) @ 0.25kg/sqm	1800Sqm	14.08	Sqm	25,344
12.4	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
12.4.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	110Cum	11056.36	Cum	12,16,200
12.5	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.				
12.5.1	40/50 mm compacted thickness with bitumen of grade VG- 30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.	80Cum	12053.14	Cum	9,64,251
12.6	Providing and applying 2.5 mm thick road marking strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi-automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc.	100Sqm	749.44	Sqm	74,944

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	complete as per direction of Engineer-in-charge and accordance with applicable specifications.				
13	Sanitary installations				
	Note:- 1) Procurement of items with aesthetic value and visibility shall be on prior approval of Engineer-in-charge for specific area of application."				
13.1	Providing, fixing, testing and commissioning of White Vitreous China Wall Mounted Water Closet with soft closing of approved shape with C.P. bolts, nuts, C.I. chair or other hanging arrangements, C.P. brass screw, washer with all accessories. including brass / SS screws and washer complete. PVC WC connector (straight or bend type) with rubber lip ring. Including 110 mm dia PVC pipe / bend of required length and proper connection complete as required. Including cutting & making good the walls, floors, slab wherever required including all necessary accessories and consumables, including seat cover and cistern fittings, nuts bolts and gasket etc. complete as per specification/drawings and as directed by Engineer-in-charge. (JAQUAR/ARTIZE -ANS-WHT-53953-BI UFSM, KOHLER-27902IN-SS-0 ,ROCA RS34647L460 + RE801472464), or equivalent make and specification.	250Nos	32182.95	Nos	80,45,738
13.2	Providing, fixing, testing and commissioning of Pneumatic Single Piece Slim Concealed Cistern with Floor Mounting Frame, Installation Kit and Drain Pipe Connection Set for Wall Hung WC having Flushing	250Nos	14781.82	Nos	36,95,455

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	capacity 2 Liter/4.5 Liter and Pneumatic control plate in CP finish of approved make and quality and stop cock for isolation as approved by Engineer - In - Charge, including cutting and making good the walls wherever required complete with necessary accessories as per directions of the Engineer-in-charge. (JAQUAR/ARTIZE - APC-WHT-5012500FS / ACP-CHR-5012501, KOHLER - K-26353IN-P-NA / K-20189IN-P-CP, ROCA-RE890010020 / RE890010020), or equivalent make and specification.				
13.3	<p>Providing, fixing, testing & Commissioning of approved make Under counter Wash basin including making water and drain connections, brass wall and sleeve flanges, etc., complete with all respect. The wash basin shall consist of the following and shall be with or without hot water supply thermostatic mixing valve for premixing hot and cold water wherever is required.</p> <p>Heavy type concealed M.S.wall brackets with 3 hole fixity and SS screws to support the basin or hitech supports, 32 mm dia. CP finished waste Coupling, 32 mm dia. CP finished bottle trap with extension pipe and 2 nos. of 15mm nominal bore CP finished Angle valve and 450 mm long Braided Hose. The rate includes all necessary connection charges as per product detail to the satisfaction and as directed by the Engineer-in-charge.</p> <p>((JAQUAR/ARTIZE - ALA-CHR-509573 / KUP-35041, KOHLER - K-12927IN-CP / K-20075IN-4-CP, ROCARF9060A1 / RT5A9309CA1),</p>	150Set	14917.06	Set	22,37,559

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	or equivalent make and specification.				
13.4	Providing and fixing CP finish Toilet paper holder with flap and shelf along with all necessary accessories complete as per directions of the Engineer-in-charge. (JAQUAR/ARTIZE - AKP-CHR-35753PS , KOHLER - K-5633IN-CP, ROCA - RA816662001), or equivalent make and specification.	250Nos	2028.71	Nos	5,07,178
13.5	Providing, fixing, testing and commissioning of S.S. 304 floor drain finished in CP finish with provision for tile insert & should consist of cockroach trap of suitable size with all necessary fittings and accessories complete in all respect as per specification/drawings and as directed by Engineer-in-charge. (KICH- FD225 , CHILLY - CCTL-SMHC-152 , RUHE -16-0204-01), or equivalent make and specification.	150Nos	303.58	Nos	45,537
13.6	Providing, fixing, testing and commissioning of CP finished Brass Hand Shower (Health Faucet) of approved make and quality and as approved by Engineer - In - Charge, including 8 mm dia, 1 to 1.5 Meter long Flexible tube , Two way brass bib cock finished in Chrome & wall hook including cutting and making good the walls wherever required complete with necessary accessories as per directions of the Engineer-in-charge. (JAQUAR/ARTIZE - ALA-CHR-509573/KUP-35041, KOHLER - K-12927IN-CP/ K-20075IN-4-CP, ROCA -RF9060A1/RT5A9309CA1), or equivalent make and specification.	250Nos	6191.20	Nos	15,47,800

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
13.7	Providing, fixing, testing and commissioning of Automatic Liquid Soap Dispenser of 0.5 ltrs capacity of approved make and quality, and as approved by the Engineer-in-charge, including all necessary materials required for fixing. All complete as per directions of the Engineer-in-charge. (EURONICS-ES80A , DOLPHY- DSDR0117 , UTEC - UT- 325), or equivalent make and specification.	100Nos	4714.18	Nos	4,71,418
13.8	Providing, fixing, testing and commissioning of Sensor based C.P Brass faucet (Flowrate as 5.0 Lit per min AT 3.0 bar) for Wash Basin of approved make and quality, and as approved and directed by the Engineer-in-charge, including CP wall flanges and all necessary materials required for fixing and making good as required. (JAQUAR - SNR-51011N , KOHLER- K-24270IN-ND-CP , CERA- F6010102), or equivalent make and specification	150Nos	11372.42	Nos	17,05,863
13.9	Providing and fixing white vitreous china Battery Based Infrared Sensor Operated Urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge. (JAQUAR - URS-WHT-13253N/SNR-STL-51083, HINDWARE/KOHLER- K-20713-ET-7 / K-24199IN-C01-CP, CERA CAT. NO.: 2806300000), or equivalent make and specification.	100Nos	18476.30	Nos	18,47,630

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
13.10	<p>Providing, fixing, testing and commissioning of Divyang toilet set with Providing, fixing, testing and commissioning of White Vitreous China Wall Mounted Water Closet with soft closure of approved shape with C.P. bolts, nuts, C.I. full chair or other hanging arrangements, C.P. brass screw, washer complete with PVC W.C connector, seat & lead (heavy duty) including C.I. Brackets, brass hinges, M.S. / C.I. painted brackets, 32mm brass waste Coupling, 32mm size brass bottle trap, 3 nos of 450 mm braided hose, Pillar type sensor Brass faucet with basin mixer (Hot and cold inlets) (Flowrate as 5.0 Lit per min AT 3.0 bar), Health faucet & Two way bib cock. Thermostatic mixing valve for premixing hot and cold water, 2 nos of angle valve etc. all Internal fittings complete with one no Hinged rail, 1 numbers of straight S.S grab rails, 1 Nos L shaped grab rail, 1 No. of Swing Grab rail and 2 numbers of U shaped grab rail with floor support, with back support for Water closet etc. rubber buffers, C.P nuts, bolts etc making holes in walls & floors, & finishing for ready to use. 1 Nos. of folding disabled shower seat. The rate includes all necessary accessories and connection charges as per product detail to the satisfaction and as directed by the Engineer-in-charge. Note: All materials specified above shall form part of the Divyang toilet set and shall be as per from Divyang range of approved make. (JAQUAR - DIS-WHT-93951UF, FLV-1085N, ALD-577, KUP-35053PM, DIS-WHT-93801, SNR-15019PMPK, ALD-705L130, ALD-769L250x190, FLR-CHR-5267N); (KOHLER - K-1381T-S-0, K-16407IN-CP, K-20746IN-CP</p>	50Set	79700.38	Set	39,85,019

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>,K-24199IN-C01-CP , K-12925IN-CP ,K-16093IN-4-CP, K-24270IN-ND-CP , K-80154IN-4AV-CP ,K-30520IN-0 ,K-98754IN-4-CP)</p> <p>(CERA -Cat. No. S1013200+Cat. No. B1520118,Cat. No. S2040159 ,Cat. No. F9030453,Cat. No. B2210106 ,Cat. No. B2210108 ,Cat.No.F1005424); (EURONICS -STRAIGHT GRAB BAR- EGR01,L SHAPED GRAB BAR- EGR04 ,SWING GRAB BAR- EGR S02 ,U SHAPED GRAB BAR- EGR 03); (JAQUAR -STRAIGHT GRAB BAR -WAC-SAP-BR0600CS ,SWING GRAB BAR -WAC-SAP-BG0800CS ,L SHAPED GRAB BAR- FFAS9405-000040BC0, SWING GRAB BAR- FFAS9401-000040BC0); (KOHLER STRAIGHT GRAB BAR - K-24551-CP , EURONICS- EDS01 ,KOHLER- K-20526IN ,AMERICAN STANDARD/GROHE-FFAS9407-000040BC0,DOLPHY- DHGB0006, CERA - B2210110), or equivalent make and specification.</p>				
13.11	Size 150mm Floor drain Matt finish with Cockroach trap consisting of 100mm perforated top cover, 77mm Ø x 67mm high Cockroach Trap ideal for 100mm drain pipe with floor trap cover as specified in approved make and quality. (KICH-FD225 ,CHILLY - CCTL-SMHC-150, RUHE), or equivalent make and specification	50Nos	1064.46	Nos	53,223
13.12	Providing, fixing, testing and commissioning of Shaving Mirror, including chasing in the wall, fixing the shaving mirror and finishing in the wall and at levels as directed by the Engineer-in-charge.	150Nos	5288.26	Nos	7,93,239

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	(JAQUAR ACN-CHR-1193N, ROCA RA815486001), or equivalent make and specification.				
13.13	<p>Providing and fixing factory made toilet cubicles comprising compact high pressure laminate (HPL) sheet panel of 12 mm thickness, anti-bacterial, scratch, water and moisture resistance. Panel to be fixed with SS-304 accessories including toop rail, U-channel hinge, door locks, coat hooks, door stopper and adjustable legs as per approved drawings.</p> <p>Panel height 1950 mm, Ground clearance 150 mm</p> <p>Accessories: SS Series</p> <p>a) Leg SS Series 304</p> <p>b) Gravity Hinges (Right/Left) SS 304</p> <p>c) Coat hook SS Series 304</p> <p>d) Door Handle/Pull Handle SS Series 304</p> <p>e) Lockset with indicator SS 304</p> <p>f) U channel/ Wall bracket (Alum. Anodized) SS 304</p> <p>g) Toprail (Alum. Anodized) SS 304</p> <p>h) H Channel (Alum. Anodized) SS 304</p> <p>i) F Channel (Alum. Anodized) SS 304</p>	250Nos	62984.55	Nos	1,57,46,138

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
13.14	<p>Urinal Partition</p> <p>Providing and fixing 18mm thick Urinal Partitions of approved make, shade, texture (same on both side), made of solid compact laminated sheet. Compact Laminate sheet shall be anti-bacterial made with core of phenol resin treat papers with black colour top layer treated with special melamine resin under high pressure and temperature, which shall be resistant to heat, bacteria, water, chemical, scratch and impact. Finished product shall be as per approved texture, shade and developed according to IS-2046 and BS-476/97 standards. The partition shall include necessary hardware fittings, made out of SS-316, as per manufacturer's specifications and approved by Engineer in charge. Hardware used for fixing shall consist of -</p> <p>1) SS 316 right angle brackets or in full length at both side</p> <p>2) SS Screws 316 & P.V.C Wall Plugs</p> <p>Actual area of compact sheet shall be measured for payment. Rate shall be inclusive of all material, labour, fixing with all hardware.</p>	100Sqm	19967.20	Sqm	19,96,720
13.15	<p>Providing, fixing, jointing, testing and commissioning Hubless C.I. pipe for soil, waste pipes installation conforming to IS:15905, stainless steel coupling with EPDM rubber as per DIN 19543, cut to required lengths including all necessary fittings and specials such as Bends, junctions, offsets, access pieces (plain or door), shield coupling, H-ventilation, Y-ventilation, multi-inlet pipe, end plug & vent cowl. Fixing at wall/ceiling level supported by galvanized steel clamps & hangers (away from the</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	wall/column/slab) etc. duly epoxy coated. Cutting, chases/holes in floors / walls / slab with all necessary accessories as per specification/ drawings and directed by Engineer-in-charge. (Application: Suspended & Riser-Soil, Waste, vent and RWP or as directed by Engineer-in-charge)				
	Including providing and fixing MS pipe sleeves of suitable higher size wherever pipes crossing a fire rated wall / floor slab and ceiling of space around pipe and pipe sleeve with glass wool in between and fire proof sealant at either end to the satisfaction of the Engineer-in-charge and making good the same after pipes have been duly laid and testing complete				
	Cost shall also be inclusive of all material and labour including painting the pipes & fittings with two or more coats of synthetic enamel paint of approved shade over a coat of primer.				
13.15.1	100 mm dia	400Meter	3076.63	Meter	12,30,652
13.16	Providing and fixing in position Hubless CI full bore P trap confirming to IS 15905 including SS coupling with EPDM rubber as per DIN 19543 of the following sizes for under slab location including providing necessary galvanized steel support and as per Specification and duly epoxy coated. Cutting chase / hole in floors / slabs and bringing the same in proper condition and shape after placing the trap in right position complete by supporting by GI clamps / hangers as required with all necessary accessories as per specification/				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	drawings and directed by Engineer-in-charge. (Application: for Suspended Drainage or as directed by Engineer-In-Charge)				
13.16.1	100 mm inlet and 100 mm outlet	200Each	2917.05	Each	5,83,410
14	Water supply				
14.1	Providing and fixing Stainless Steel pipe and fitting of grade 316L as per IS : 6911:2017 and conforming to EN-10312 standards complete with press type fitting (fitting shall be paid for separately) including fixing of the pipe with clamps at 1.00 m spacing including cutting and making good the walls including testing of joints complete as per direction of Engineer-in-charge. (The pipe length inserted in the fitting shall not be measured for payment)				
14.1.1	Internal work - Exposed on wall				
14.1.1.1	15 mm outer dia pipe	400RMT	705.59	RMT	2,82,236
14.1.1.2	22 mm outer dia Pipe	800RMT	1027.50	RMT	8,22,000
14.1.1.3	28 mm outer dia Pipe	800RMT	1274.94	RMT	10,19,952
14.1.1.4	35 mm outer dia Pipe	200RMT	1768.97	RMT	3,53,794
14.1.1.5	42 mm outer dia Pipe	100RMT	2128.65	RMT	2,12,865
14.2	Providing, fixing, jointing, testing and commissioning of Bronze Globe valve, PN16 , confirming to IS 778 screwed in bonnet, Bronze body, disc & stem union flanges, washer nuts & bolts, rising stem, connectors, adapters etc. complete, high quality PTFE gland packing with necessary unions, complete with all necessary accessories as per specification/drawings and as directed by Engineer In Charge				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
14.2.1	Location: In tanks, inside shafts, in Basement ceiling for isolation of Risers, and isolation of wet areas.				
14.2.1.1	50 mm dia	150Nos	2104.30	Nos	3,15,645
14.2.1.2	65 mm dia	100Nos	3889.95	Nos	3,88,995
14.2.1.3	80 mm dia	100Nos	3889.95	Nos	3,88,995
14.3	Providing, fixing, jointing, testing and commissioning of C.I. Butterfly valve (Body: Grey Cast Iron, shaft: SS, Disc: SG Iron (nickel plated), Liner: HT - EPDM/Nylon) of approved make with flange, washer, nuts & bolts and PN 16 pressure rating including rubber gasket & painting complete with all necessary accessories as per specification/drawings and as directed by Engineer In Charge.				
14.3.1	65 mm dia	75Nos	2345.45	Nos	1,75,909
14.3.2	80 mm dia	50Nos	2517.50	Nos	1,25,875
14.4	Providing, laying & fixing, jointing 110 mm SN 8 Nu- Drain Upvc pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per I.S.15328 with fittings such a bends, tees, coupler, etc, jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated material etc. complete. Spec: As directed by Engineer-In-Charge HDPE Pipes - Class SN8 110 mm dia.(OD)	2000RMT	604.35	RMT	12,08,700
14.5	Providing and fixing Structured Wall UPVC SWR non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098 with rubber inserts of 3mm thickness complete including fixing the pipes with clamps and supports at 1.20m				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	spacing centre to centre, as directed by the Engineer-in-Charge.				
14.5.1	Concealed Pipes				
14.5.1.1	40 mm dia	800RMT	728.95	RMT	5,83,160
14.6	Providing and fixing Structured Wall UPVC SWR non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, Multi Floor Trap Height Riser with 50mm x 50mm x 75mm inlet x 110mm dia outlet, as per specifications & at all levels & at all heights, as approved and directed by Engineer-in-charge.				
14.6.1	100 x 40mm diameter	400Nos	375.95	Nos	1,50,380
14.6.2	100 x 50mm diameter	300Nos	382.90	Nos	1,14,870
14.7	Providing and fixing trap of self-cleansing P Trap, in Structured Wall UPVC SWR non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, of size 110mm x110mm with rubber inserts of 3mm thickness complete, including cost of cutting and making good the walls and floors:	500Nos	1105.45	Nos	5,52,725
14.8	Providing and fixing Structured Wall UPVC SWR non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098 with rubber inserts of 3mm thickness complete including fixing the pipes with clamps and supports at 1.20m spacing centre to centre, as directed by the Engineer-in-Charge.				
14.8.1	Internal Works - Exposed on Walls / Ceiling Slabs				
14.8.1.1	50 mm dia	750RMT	645.90	RMT	4,84,425

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
14.8.1.2	75 mm dia	500RMT	902.00	RMT	4,51,000
14.8.1.3	110 mm dia	1000RMT	1324.20	RMT	13,24,200
14.8.1.4	160 mm dia	100RMT	1988.65	RMT	1,98,865
14.9	Providing and fixing Structured Wall P.P. non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, bend of required degree (45°) with insertion rubber washer 3 mm thick complete.				
14.9.1	75 mm dia.	20Nos	233.40	Nos	4,668
14.9.2	110 mm dia	25Nos	387.05	Nos	9,676
14.10	Providing and fixing Structured Wall P.P. non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, single Y with rubber insert of 3mm thickness complete.				
14.10.1	75 mm dia.	50Nos	417.50	Nos	20,875
14.10.2	110 mm dia	75Nos	741.40	Nos	55,605
14.10.3	160 mm dia	25Nos	1165.00	Nos	29,125
14.11	Providing and fixing Structured Wall P.P. non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, reducer Single Y with rubber insert of 3mm thickness complete.				
14.11.1	110 x 75	20Nos	611.30	Nos	12,226
14.11.2	160 X 110	20Nos	724.80	Nos	14,496
14.12	Providing and fixing Structured Wall P.P. non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, Double Y with rubber insert of 3mm thickness complete.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
14.12.1	110 x 110 x 110	50Nos	728.95	Nos	36,448
14.13	Providing and fixing Structured Wall P.P. non pressurized waste water piping as laid down in DIN EN 12056 and DIN 1986-100 and as per IS: 16098, end plug with accessories as per approval of the Engineer-in-charge.				
14.13.1	110mm diameter	100Nos	306.75	Nos	30,675
14.13.2	160mm diameter	50Nos	382.90	Nos	19,145
14.14	Providing and fixing M.S. Holder-bat clamps of approved design to Sand Cast / cast iron (spun) pipe embedded in and including concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size), including cost of cutting holes and making good the walls etc.:				
14.14.1	For 100 mm dia pipe	150Nos	334.45	Nos	50,168
14.14.2	For 75 mm dia pipe	100Nos	327.50	Nos	32,750
15	Drainage				
15.1	Providing, Supplying, lowering, laying and jointing of Class SN8 Structured Wall Polyethylene piping systems (Pipe with online/offline coupler and elastomeric sealing ring) with non-smooth External Annular Corrugated and Smooth Internal Surfaces (Double Wall) for non-pressure underground sewerage and Drainage application as per IS 16098 (P2), transportation, loading, unloading all complete as per directions of Engineer-in-charge.				
15.1.1	150 mm inner dia	500meter	267.58	meter	1,33,790

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
15.1.2	300 mm inner dia	1500meter	903.92	meter	13,55,880
15.2	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
15.2.1	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) :				
15.2.1.1	With Sewer bricks conforming to IS : 4885	30Nos.	32791.16	Nos.	9,83,735
15.3	Extra for depth for manholes :				
15.3.1	Size 120x90 cm				
15.3.1.1	With Sewer bricks conforming to IS : 4885	30RMT	10404.19	RMT	3,12,126
16	Aluminium				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
16.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) :				
16.1.1	For fixed portion				
16.1.1.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	3200Kg	532.06	Kg	17,02,592
16.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
16.1.2.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	2200Kg	635.84	Kg	13,98,848
16.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge				
16.2.1	With toughened glass panes of 8 mm thickness (weight not less than 20 kg/sqm)	1500Sqm	2192.57	Sqm	32,88,855
16.3	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
16.3.1	Upto 5mm depth and 5 mm width	500RMT	96.96	RMT	48,480
16.4	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/ structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540-F & ISO 11600				
16.4.1	Upto 20 mm depth and 20 mm width	300RMT	364.00	RMT	1,09,200
16.5	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
16.5.1	Pre-laminated particle board with decorative lamination on both sides	30Sqm	1117.84	Sqm	33,535
17	Waterproofing				
	Note:- (1) Before commencing waterproofing all the civil works need to be completed. (2) No civil work to be done after waterproofing. (3) All waterproofing should be done laid with proper slope. (4) Rates are inclusive for at all heights and levels including scaffolding if required .				
17.1	Providing and laying Double layer of pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement: 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) and finished neat complete.	20000Sqm	978.75	Sqm	1,95,75,000
17.2	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. Complete as per directions of Engineer-in-Charge				
17.2.1	Stirrer mixed Acrylic Polymer of approved make @ 2% of weight of cement used) modified Cement slurry made with non-shrink compound in concrete/RCC work	191000Kg	119.56	Kg	2,28,35,960

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.3	Perforated pipe with geotextile Providing and fixing uPVC slotted pipe of 100 mm dia as per IS: 12818 and wrapped with geotextile membrane of 120 GSM in proper gradient and slope in sand filling between raft and grade slab to drain out water as per drawing and as directed by Engineer in charge.	300RMT	880.75	RMT	2,64,225
17.4	Grading roof for water proofing treatment with				
17.4.1	Cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) cost include all lift and levels.	1200Cum	8059.91	Cum	96,71,892
17.5	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	400Nos.	298.89	Nos.	1,19,556
17.6	Providing and injecting 3 part, very low viscous elastic polyacrylic injection resin Injection 306 with a versatile and adjustable reaction time having mixed viscosity: 3-11 M pa s at + 20 degree C, reaction time: adjustable according to ambient temperature and execution requirement between 8-50 Mins PH - 9-10. Tested as per wissbau No 2002- 094- (1A) function test with re- injectible hose system. The holes should be drilled until a depth of approx 5 cm (for a 6cm thick wall) before the end of the wall is reached. Pump injection- 306@ at > 20 bar into a behind fissures or into	700RMT	665.00	RMT	4,65,500

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	masonry joint which are allowing water to infiltrate into unwanted area if voids is masonry being injected contain insufficient moisture to activate the grout inject a small amount of water prior to injecting the grout when movement stop or injection - 306 appears at the next packer move to the next packer and inject. If the dampness is heavy inject similarly at next joint line.				
17.7	Providing and applying UV resistant, a spray/roller applied solar reflective cum waterproof coating (having minimum 1.2 mm DFT) for terrace area with elastomeric property and having a SRI value not less than 100-105 (as per ASTM E 1980), with crack bridging ability up to 1mm (as per ASTM C 836: 1995) and elongation at break of 200% (as per ASTM D 412: 2002), having tensile strength ≥ 1.0 Mpa with a coverage of 1.5 kg/sqm (2 liter per sqm) in 3 coats sandwiched with a fabric between 1st and 2nd coat, entire coating system applied over a primer. The termination of the SRI coating shall be terminated at the drip moulds of the plaster of the parapet wall (up to 450mm), above the haunch. After completion of SRI coating, additional anti dust/protective coating shall be applied to achieve a zero-dust adherence on the coating so as to maintain the SRI value. Applied area of coating as per approved methodology (horizontal and vertical) shall be measured for payment without any overlaps.	20000Sqm	290.65	Sqm	58,13,000

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.8	<p>Providing & laying under the RCC Raft Foundation, a HDPE based waterproofing white composite sheet membrane, at minimum 1.2mm thickness (bare sheet thickness), when tested as per ASTM D 3767, consisting of high-density polyethylene film/sand blasted surface, a pressure sensitive adhesive and a trafficable weather resistant coating. The membrane shall form an integral, adhesive and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete and shall include with overlaps to be treated with hot air welding technology to complete the side laps and secure adjacent sheets. HDPE Membrane shall be applied with following steps and as per manufacturer recommendation:</p> <p>1) Cleaning of PCC surface to remove dust, loose particles, etc with compressed air or any other suitable technique depending on site conditions, grinding any sharp edges, etc</p> <p>2) HDPE membrane laid over PCC and continued over the side of raft, vertical portion of retaining wall and over the kicker joint, and terminated over the kicker joint, into a saw cut groove provided at an angle of 45 degrees to the vertical, to tuck in the HDPE membrane and sealed off with a PU sealant.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>The membrane shall have the following physical properties:</p> <p>1) Lateral Water Migration Resistance of at least 70 m as per ASTM D 5385, of hydrostatic head pressure</p> <p>2) An elongation of minimum 450% as per ASTM D 412.</p> <p>3) Tensile Strength > 25 MPa as per ASTM D 412,</p> <p>4) Peel Strength to Poured-in-Place Concrete after 7 days of water immersion: >800N/m² – ASTM D 903</p> <p>5) Lap peel adhesion minimum 14000 N/m²; ASTM D1876 or AS per ASTM D 1817 should be 900 N/m</p> <p>6) The membrane shall have a puncture resistance not less than 890 N as per ASTM E 154,</p> <p>7) Water presence less than 0.1% as per ASTM E 96 Method B</p> <p>8) Water absorption not exceeding 0.5% as per ASTM D 570.</p> <p>Contractor shall submit methodology statement with all detail in illustrative sketch form and get approved from Engineer-in-charge before start of work. Application shall be carried out by approved applicator of manufacture and as per recommended by manufacturer. Actual laid area of HDPE membrane (horizontal & vertical) shall be measured for payment without considering overlaps.</p>	3300Sqm	1041.30	Sqm	34,36,290

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.9	Providing and mixing integral crystalline admixture for water proofing treatment to RCC structures like basement raft, retaining walls, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc. at the time of transporting of concrete into the drum of the ready-mix truck , using integral crystalline admixture @0.80% (minimum) to the weight of cement content per cubic meter of concrete) or higher as recommended by the manufacturer's specification in reinforced cement concrete at site of work. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.	5000Sqm	388.85	Sqm	19,44,250

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.10	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.				
17.10.1	For vertical surface two coats @ 0.70 kg per sqm per coat	4000Sqm	473.94	Sqm	18,95,760
17.10.2	For horizontal surface one coat @1.10 kg per sqm.	4000Sqm	363.59	Sqm	14,54,360

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.11	<p>Water proofing & 80mm thick Insulation for terrace Providing and applying elastomeric PU (Poly urethane) coating water proofing and insulation system to be uniformly spread in entire area. System shall be executed as follows:</p> <p>1) Surface preparation shall be done as per manufacturer specifications followed by PU water proofing coating</p> <p>2) Repairing cracks on mother roof slab by cutting & making V grooves in 25x25 mm, and filling with a polymer modified sand cementitious mortar, of 1:3 proportion and filling the groove with CM (1:3) as recommended by manufacturer specification.</p> <p>3) Making fillet and haunches with polymer modified mortar or as per manufacturer of minimum size 50mm x 50mm</p> <p>4) Supplying and applying a base coat of dual component polyurethane based waterproofing coating, having elongation > 600%, crack bridging > 3mm, tensile strength of > 6.0 Mpa, solid content min 98 %, minimum DFT 1.5mm (as per ASTM D 412), over the entire mother slab of roof and over the concrete haunches provided in the periphery of the slab at the junctions of the parapet wall or 450mm</p>				
	<p>5) Spray applying an average 80 mm thick (cured thickness) polyurethane foam (GRIHA certified, CFC and HCFC free), with a core density of 45-50 kg /m³, thermal conductivity of 0.023 W/m.k at 25°C mean temperature (as per ASTM C518/91), tensile strength of > 300kPa (as per ASTM</p>	24000Sqm	5058.81	Sqm	12,14,11,440

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>D 1623), compressive strength with rise of > 300kPa (as per ASTM D-1621), closed cell content having apparent vol of > 90% (as per ASTM D 6226/ 2856) and fire resistance property conforming to Class B2 as per DIN 4102.</p> <p>6) Application of PU form shall be followed by, supplying and applying a base coat of one component polyurethane based waterproofing coating, having elongation of > 400% and tensile strength of > 2 MPa, with minimum DFT 1.5mm (as per ASTM D 412), over a PU foam and vertical above up to 450mm.</p> <p>7) Supplying & laying 200 gsm Geotextile (non-woven polyester) over the entire membrane maintaining proper overlaps of 100 mm and above vertical as per manufacturer's specification.</p> <p>8) Applying average 100 mm thick 1:2:4 grade concrete screed including providing control joints in maximum 3M x 4M grids size, and providing the angular haunch of 50mm x 50mm using 1:2:4 grade concrete at the corners of the slab-parapet wall junctions all around the periphery. Screed concrete shall be cut by mechanical means and filling the groove with a one component Polyurethane Sealant that is moisture triggered and cast immediately on saw cutting joints on green concrete. The width of sealant fill shall not exceed 10mm. (Screed as per above description shall be paid separately).</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.12	<p>Podium water proofing</p> <p>Providing and applying 2 component Root-Resistant hybrid Polyurea water proofing system over a thoroughly prepared surface of basement podium slab, top slab of tunnel/underground structure etc, cleaned mechanically, to remove all laitance by mechanical grinding, treatment of cracks and honey combing by suitable method etc. The suitable compatible primer for the polyurea system shall be applied earlier to reach a tack-free state.</p> <p>Then application of 2 component Polyurea in two or more layers that is quick / fast Setting, that is elastomeric waterproof, spray applied to achieve DFT recommended by manufacturer (minimum 1.5 mm) by spray application with a high-pressure, heated two component, spray proportioning equipment. The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis. The Polyurea coating system must deliver the following properties: Solids by Volume shall be 100%, Tensile strength ASTM D412 >10 MPa, Tear Resistance ASTM D624C shall be minimum 50 N/mm, Elongation ASTM D412 > 400%.</p> <p>The polyurea coating shall be applied over podium slab with vertical wall minimum 300 mm in height, after surface preparation.</p> <p>Supplying and applying protective geo textile fabric of 200 gsm over the entire membrane with proper overlaps of 100 mm.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>Over the geotextile fabric, concrete screed with saw cut and groove shall be provided in desired slope, which shall be paid under relevant tender item.</p> <p>Providing & placing polypropylene HDPE dimpled drain board (with inbuilt geo textile membrane of 100 gsm at top), with minimum overlap of 100 mm, based on soil characteristics and height of soil overburden.</p> <p>Rates shall include all materials, labour, T&P, wastage etc. as mentioned in the item including cost of protective concrete screed.</p> <p>Applied area of Polyurea coating as per approved methodology (horizontal and vertical) shall be measured for payment without any overlaps.</p>	4000Sqm	2007.10	Sqm	80,28,400
17.13	<p>Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meters. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.</p>	800metre	574.71	metre	4,59,768

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.14	Providing and applying of controlled swellable type water stop bar, of approximate size 20mm x 10mm, non-bentonite type (expansive nature) of approved make for construction joints treatment of RCC structure, such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc. For provision of swellable bar, contractor shall provide shear key in wall and raft. After cleaning the shear key, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint as per manufacturer specification. Over the primed surface swellable type water stop bar shall be placed. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guaranteed for 10 years against any leakage. Size of swellable bar shall be as per manufacturer's recommendation and as per approved system by Engineer-in-charge.	500Rmt	580.56	Rmt	2,90,280
17.15	Providing and placing in position suitable Serrated with central bulb (225 mm wide, 8-11 mm thick) PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete:	800RMT	334.70	RMT	2,67,760

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
17.16	<p>Retaining wall Treatment</p> <p>Providing and applying spray applied, 2-component Pure Polyurea over retaining wall on thoroughly prepared and cleaned surface mechanically to remove all chipping and loose material and laitance by mechanical grinding, treatment of cracks and honey combing by suitable repairing method as approved by Engineer-in-charge as per site condition. Then application of 2-component Polyurea that shall be quick/ fast Setting, elastomeric waterproof, spray applied in two coat to achieve minimum 1.5 mm DFT by high-pressure spray application, heated two components, spray proportioning equipment. The proportioning equipment must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis. The Polyurea coating system must deliver the following properties: Solids by Volume shall be 100%, Tensile strength ASTM D412 or ISO 37 >20 MPa , Tear Resistance ASTM D624C or ISO 34-1 shall be minimum 70 N/mm, Shore A Hardness (ASTM D2240) or DIN 53505 not less than 80, Elongation ASTM D412 > 300%, crack bridging ability of minimum 2 mm as per ASTM C1305 or EN 1062-7 , and resistance to fire to std (EN 13501-1) Class E.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	Protection Board in Verticals: Providing and installing of minimum 20 mm thick XPS protection board of approved quality over the layer of Polyurea using appropriate compatible adhesive to prevent any damage to membrane during backfilling. The protection board is to be spot-bonded on the applied waterproofing. Contractor shall submit methodology statement with all details in illustrative sketch form and get approved from Engineer-in-charge. Application shall be carried out by registered applicator of the manufacture and approved by the Engineer-in-charge. Cost shall include all materials, labour, T&P, wastage etc. as mentioned above in the item. Applied area of Polyurea coating as per approved methodology (horizontal and vertical) shall be measured for payment without any overlaps.	3900Sqm	2237.88	Sqm	87,27,732
18	Miscellaneous				
18.1	Supplying chemical emulsion in sealed containers including delivery as specified.				
18.1.1	Imidacloprid 30.5% SC (CIB approved, BIS & CBRI certified) and proportion of dilution with water shall be as per manufacturer's specification.	3500Ltr	235.26	Ltr	8,23,410
18.2	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :				
18.2.1	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	including drilling 12 mm diameter holes and plugging with cement mortar 1:2 (1 cement: 2 Coarse sand) to match the existing floor:				
18.2.1.1	Imidacloprid 30.5% SC (CIB approved, BIS & CBRI certified) and proportion of dilution with water shall be as per manufacturer's specification.	7300Sqm	310.73	Sqm	22,68,329
18.2.2	Treatment of existing masonry using chemical emulsion @ one litre per hole at 300 mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2 (1 cement: 2 coarse sand) to the full depth of the hole :				
18.2.2.1	Imidacloprid 30.5% SC (CIB approved, BIS & CBRI certified) and proportion of dilution with water shall be as per manufacturer's specification.	3100Meter	43.09	Meter	1,33,579
18.2.3	Treatment at points of contact of wood work by Imidacloprid 30.5% SC (CIB approved, BIS & CBRI certified) and proportion of dilution with water shall be as per manufacturer's specification. @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	12000Meter	280.31	Meter	33,63,720

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
18.2.4	<p>Providing and injecting Chemical emulsion for PRE - CONSTRUCTIONAL anti-termite treatment and creating a chemical barrier on the top surface of plinth filling, inside junction of wall and floor, on top of damp proof course or on masonry at level of plinth filling as per IS 6313 (Part-2)-2013 using chemical like Imidacloprid 30.5% SC (CIB approved, BIS & CBRI certified) and proportion of dilution with water shall be as per manufacturer's specification. The emulsion shall be applied as mentioned below, all as per specification and directions of Engineer-in-charge. A guarantee bond of 10 years shall be furnished in prescribed proforma. Rate shall be inclusive of material required for Anti Termite Treatment and labour and equipment's required for applying in any condition all etc. complete as directed by engineer in charge. (Stage of treatment may vary as per site condition and approved by Engineer in charge before execution.)</p> <p>a) Treatment to soil below grade slab - before laying the PCC, the compact and levelled soil shall be treated with diluted chemical at 5 liters per sqm OR In case of soils/sand filled above the raft, the treatment with diluted chemical at 5 liters per sqm shall be carried out on the top surface of filled soil/sand.</p> <p>b) Treatment to soil along the retaining wall - The soil retained by the walls (soil coming in contact with retaining wall) shall be treated with diluted chemical at the rate of 7.5 liter per sqm of the vertical surface in full depth.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	<p>c) Treatment of soil along external perimeter of building - After the building is complete, the earth along the external perimeter of the building shall be rodded at intervals of 150 mm and to a depth of 300 mm. The rods should be moved backward and forward, parallel to the wall to break up the earth and diluted emulsion poured along the wall at the rate of 7.5 liter per square meter of vertical surfaces.</p> <p>d) Top surface of the plinth filling including damp proof courses shall be treated with diluted emulsion at the rate of 5 liter/sqm of internal plinth area (if required) (As per IS:6313 Part II-2013). For any area without basement, treatment shall be done as per IS:6313 Part-II-2013.</p> <p>e) Treatment of soil surrounding pipes, wastes and conduits - When pipes, wastes and conduits enter the soil inside the area of the foundation, soil surrounding the point of entry shall be loosened around each of such pipe, waste or conduits for a distance of 150mm and up to a depth of 75 mm before the treatment is commenced. When they enter the soil external to the foundation, they shall be similarly treatment for a distance of 300 mm, unless they stand clear of the walls of the building are about 75 mm.</p> <p>f) 1 liter / linear meter along the junction of wall and floor at all stages</p> <p>g) 2 litre per linear meter for expansion joints in touch with soil/sand.</p> <p>Plinth area of Ground Floor of the building, measured as per CPWD PAR 2021 shall be measured for payment in sqm.</p>	3300Sqm	89.95	Sqm	2,96,835

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
18.3	<p>Providing and fixing tiled false ceiling of approved materials of size 595x595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 gsm/sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet, spaced at 1200mm centre to centre and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm centre to centre to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 x mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200mm centre to centre along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-charge.</p>				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
18.3.1	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5mm thick with 8mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	1200Sqm	1907.12	Sqm	22,88,544
18.4	Providing and fixing GRC (Glass Reinforced Concrete) Jali Screen of approved design, pattern, and manufacturer, including necessary joinery, fittings, and support system as per architectural drawings and specifications.	1000Sqm	4190.55	Sqm	41,90,550
18.5	Supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). With all of Fittings of SS-304 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear Laminated glass held together with SS - 304 Grade Stainless steel fixtures & bolt assembly .The Glass fins and glass panel assembly shall be connected to Slab/ beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non-staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion & seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter & in U channel of the assembly to be filled with non-	200Sqm	18707.10	Sqm	37,41,420

Correction –Nil

Insertion –Nil

Deletion –Nil

Overwriting -Nil

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	staining weather sealant, so as to make the entire system fully water proof & dust proof. The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, T&P, other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured and approved by Engineer-in-charge.				
18.6	Providing and fixing 12 mm thick Frameless Toughened Glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double action hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge.	100Sqm	14150.05	Sqm	14,15,005
18.7	Cleaning and primary consolidation of painted ceiling/wall surface with artwork in direct supervision of qualified art conservator with tools, equipment and methods specified on spot on identified surfaces. Area to be photographed before and after the treatment. The work includes preliminary assessment and documentation, with photographic records before, during, and after treatment. Surface cleaning shall be done using soft brushes, vacuum suction, distilled water, or pH-neutral solutions to remove dust, soot, biological growth, and	400Sqm	27685.50	Sqm	1,10,74,200

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
	previous coatings without damaging original pigments. Fragile areas shall be consolidated using lime-based or acrylic resin-based adhesives, with cracks and voids filled using compatible lime mortars mixed with stone dust or natural pigments colour and golden leaf. Essential reintegration of missing portions shall follow trateggio or dotting techniques, ensuring no overpainting or falsification. A reversible protective coating of natural resin or microcrystalline wax or any appropriate material as per the site condition shall be applied to prevent future deterioration, with optional UV-resistant treatment. Scaffolding shall be erected and dismantled safely, ensuring minimal impact on the artwork and shall be restored with the help of natral colour and gold leaf. The rate shall include the cost of materials, skilled labor, tools, safety provisions, and proper documentation to maintain authenticity and integrity while preserving the wall paintings for future generations. (The rate shall include all the above operations, cost of material, tools and tackles for all lift and levels etc. including erecting the scaffolding and dismantling the scaffolding after the work is completed.)				
19	Credit of Civil Items				
	Note: All the credit material shall be disposed by the contractor and rates of all the credit items are inclusive of disposal of the material from the site at all leads and lifts.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
19.1	Credit for all the dismantled Steel work Including steel jali/mash, grill, RS joist, channels, angles, tees, flats single, and built up section or any other steel sections Complete as per the direction of Engineer-in-charge	948000Kg	-26.00	Kg	-2,46,48,000
19.2	Credit for dismantled Aluminium partition, section or any other aluminium sections Complete as per the direction of Engineer-in-charge	10000Kg	-130.00	Kg	-13,00,000
19.3	Credit for dismantled wooden doors and windows of any size and shape Complete as per the direction of Engineer-in-charge without causing any nuisance .	300Nos.	-250.00	Nos.	-75,000
19.4	Credit for all the dismantled old GI pipes of various sizes or any other GI elements etc Complete as per the direction of Engineer-in-charge	5000Kg	-24.00	Kg	-1,20,000
19.5	Credit for all the dismantled old CI (Cast Iron) pipes of various sizes, grating, Man hole cover, sluice valve or any other CI elements etc Complete as per the direction of Engineer-in-charge	5000Kg	-25.00	Kg	-1,25,000
19.6	Credit for all the dismantled old CP brass fittings complete as per the direction of Engineer-in-charge	50000Kg	-320.00	Kg	-1,60,00,000
19.7	Credit for all dismantled Brass fittings / material complete as per the direction of Engineer-in-charge	5000Kg	-300.00	Kg	-15,00,000
19.8	Credit for all the dismantled old Stainless-steel fittings / material complete as per the direction of Engineer-in-charge	2000Kg	-160.00	Kg	-3,20,000
19.9	Credit for all the office furniture (Serviceable / Unserviceable) as per instruction of engineer in charge.				

S. No.	Description	Qty	Unit Rate	Unit	Amount (in Rs.)
19.9.1	Revolving Chair (Visitor chair chairs)	4500Nos.	-500.00	Nos.	-22,50,000
19.9.2	Cushion midback office chairs (Executive/Boss chairs)	750Nos.	-1000.00	Nos.	-7,50,000
19.9.3	Plastice/ steel etc. Chairs	4500Nos.	-150.00	Nos.	-6,75,000
19.9.4	Running workstation	3000Nos.	-400.00	Nos.	-12,00,000
19.9.5	Wooden/pre laminated /steel office tables Upto 1.2 Sqm of plan area	600Nos.	-600.00	Nos.	-3,60,000
19.9.6	Wooden/pre laminated /steel office tables Above 1.2 Sqm of plan area	1000Nos.	-300.00	Nos.	-3,00,000
19.9.7	Wooden/ Steel/Prelaminated Conference Table Upto 10 SQM of plan area	15Nos.	-5000.00	Nos.	-75,000
19.9.8	Wooden/ Steel/Prelaminated Conference Table 10-20 SQM of plan area	20Nos.	-10000.00	Nos.	-2,00,000
19.9.9	Wooden/ Steel/Prelaminated Conference Table Above 20 SQM of plan area	15Nos.	-20000.00	Nos.	-3,00,000
19.9.10	Other side table, coffee tables, podium,pediestrail	1000Nos.	-800.00	Nos.	-8,00,000
19.9.11	Wooden Cum cushioned sitter (the mesurment shall be per sitting of a sofa)	500Nos.	-350.00	Nos.	-1,75,000
19.9.12	Cushioned sofa sitter (the mesurment shall be per sitting of a sofa)	3300Nos.	-350.00	Nos.	-11,55,000
19.9.13	Cub board Almira Wood, steel or any other other upto height 1200 mm	5300Nos.	-600.00	Nos.	-31,80,000
19.9.14	Cub board Almira Wood, steel or any other other height 1200 mm - 2400mm	2000Nos.	-500.00	Nos.	-10,00,000
19.9.15	Steel/wooden/pre laminated hanging storage	8200Nos.	-800.00	Nos.	-65,60,000
	Total				2,75,76,32,707