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NAME OF WORK: - Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).

N.I.T. No.: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

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Time Allowed: - (12) Twelve months.

This N.I.T. contains (258) pages. Pages marked from 1 to 258 pages.

Assistant Engineer (C) (P)
O/o Superintending Engineer (Agra)
CPWD, Agra

Assistant Engineer (E) (P)
O/o Superintending Engineer (Agra)
CPWD, Agra

Executive Engineer (Agra),
CPWD, Agra

Executive Engineer (Elect.) (Agra),
CPWD, Agra

The Composite N.I.T. amounting to **Composite Rs. 5,59,44,611/- {(Civil Work: - Rs. 4,45,73,921/-}(+) Electrical Work: - Rs. 1,13,70,690/-)}** is here by approved.

Superintending Engineer (Agra)
CPWD, Agra

NOTICE INVITING e-TENDERS**Tender Notice**

The Executive Engineer, **Agra Division, CPWD, Agra** on behalf of President of India invites online percentage rate bids from approved and eligible contractors of B&R category in CPWD for the following work(s): -

NIT No.: **05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27**

.Name of Work: **Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).**

Estimated Cost: **Composite Rs. 5,59,44,611/- {(Civil Work: - Rs. 4,45,73,921/-(+)
Electrical Work: - Rs. 1,13,70,690/-)}**

Earnest Money: **Rs. 11,18,892/-**

Period of Completion: **12 (Twelve Months)**

Last time and date of submission of bid: - up to 3.00 p.m. on 01.09.2026

The bid forms and other details can be obtained from the website <https://etender.cpwd.gov.in>.

Part-A

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING FORMING

PART OF BID DOCUMENT (Applicable for inviting open bids)

The Executive Engineer, CPWD, **Agra** on behalf of President of India invites online percentage rate bids from approved and eligible contractors of CPWD dealing with building and roads, for the work of **“Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).”**

S. No.	NIT No.	Name of work & Location	Estimated cost put to bid (Rs.)	Earnest Money	Period of Completion (In Months)	Last date of online submission of bid, copy of receipt of deposition of original EMD, and other Documents as specified in bid	Date & time of opening of bid
1	2	3	4	5	6	7	8
1	05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27	Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).	Composite Rs. 5,59,44,611/- {(Civil Work: - Rs. 4,45,73,921/- (+) Electrical Work: - Rs. 1,13,70,690/-)}	Rs. 11,18,892/-	12 (Twelve) Months	Upto 3:00 P.M. on 01.09.2026	At 3:30 P.M. on 01.09.2026

- 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.
- Information and Instructions for bidders posted on website shall form part of bid document.
- The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
- But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or 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 favor of Executive Engineer as mentioned in NIT, receipt for

deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/ AE), CPWD and other documents as specified. (EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted).

5. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered / update their profile beforehand. The necessary training materials including the videos with step-to-step process are available on download section of <https://etender.cpwd.gov.in>
6. The intending bidder must have valid Class-III digital signature certificate with encryption key (combo type) to perform any operations / transactions on the e-tendering portal / website and the bidder should download and install the e signer on their system as per instructions available on download section of <https://etender.cpwd.gov.in>.
7. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
8. Contractor can upload documents in the form of JPG format and PDF format.
9. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in 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.
10. GST on all materials as well as GST on Work Contract etc., or any other taxes applicable in respect of this contract shall be payable by the Contractor. Percentage rate quoted by him shall be inclusive of such taxes, levies etc and Government will not entertain any claim for reimbursement whatsoever in respect of the same. The percentage rates of the contract shall be inclusive of all taxes and levies and nothing extra shall be paid. Further the percentage rate quoted by the contractor shall be inclusive of labour welfare cess and the same shall be recovered from the contractors' bills and will be remitted by the department.
11. Applicants are advised to keep visiting the <https://etender.cpwd.gov.in> web-site from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the Bid complete in all respects including updates thereof, if any. An incomplete bid may be liable for rejection.
12. The Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank drawn in favour of Executive Engineer, Agra Central Division, CPWD, Agra shall be scanned and uploaded to the e-tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or Division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE) shall issue a receipt of deposition of Earnest Money deposit to the bidder in a prescribed format. (EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted).

13. Any dispute arising out of this tender and/resultant agreement including dispute related to encashment of any Bank Guarantee/ FDR etc., whatsoever, shall be subject to the jurisdiction of courts at Agra only.

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

- I. Insurance Surety Bond, Demand Draft/ Account Payee Banker's Cheque / FDR/ Bank Guarantee of any commercial Bank against EMD.
- II. Copy of receipt for deposition of original EMD issued from division office of any Executive Engineer, (including NIT issuing EE), CPWD.
- III. Enlistment Order of the Contractor.
- IV. ~~Certificates of Work Experience (if required from non CPWD and CPWD class II contractors).~~
- V. ~~Affidavit as per clause 1.2.3 of CPWD-6 (if required from non CPWD and CPWD class II contractors).~~
- VI. ~~Two letters from CPWD class I contractors as specified under clause 1.2.3 of CPWD-6 (if applicable).~~
- VII. GST Registration Certificate if already obtained by the bidder.
If the bidder has not obtained GST registration as applicable, then he shall scan and upload following under taking along with bid documents.
"If work is awarded to me, I/we shall obtain GST registration certificate, as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard".
- VIII. ~~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.~~
- IX. Undertaking on structural stability and soundness as per prescribed format Form 'F'.
- X. ERP training certificate issued by the Competent Authority /or submit an undertaking that
"If work is awarded to me, I/We shall undergo ERP training, within 45 days from the date of receipt of award letter or the date on which ERP training shall be conducted by department anywhere in PAN India failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by CPWD in this regard".

BRIEF PARTICULARS OF THE WORK

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

S.No.	Name of Work	Estimate Cost	Period of Completion
1.	Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).	Composite Rs. 5,59,44,611/- {{Civil Work: - Rs. 4,45,73,921/- (+) Electrical Work: - Rs. 1,13,70,690/-}}	12 (Twelve) Months

2. Work shall be executed according to General Conditions of Contract 2023 for Construction works available separately at printer's outlets and online including amendments issued there in upto last date of submission of bid. The General Conditions of Contract for Central Public Works Department is also available on website www.cpwd.gov.in.

3. The scope of work includes

Civil:

- The approximate built-up Area of the Building: - 1007.00 Sqm.
- No of Proposed Floors in the building: - Stilt Floor + 3 Floors
- Complete Internal and External Civil works and development work in the buildings such as Road work, Sanitary installations, Water supply, Drainage and RWH etc.
- Boundary wall with retaining wall.

Electrical Works:

- Complete Internal and External Electrical and Mechanical works in the buildings such as Internal Electrical installation; Fan & Fittings; Feeder Pillars for essential, non-essential panels, Street light & Cable Laying Work, Fire Fighting & Fire alarm system, Fire extinguisher, Earthing, Lightning Conductor, Lift, DG Set, UPS, EPABX, LAN & CCTV System, Solar PV system.
4. Any other work as detailed in SCHEDULE OF WORK, specified elsewhere in tender documents and even incidental works not defined in this document but essential for completion of work.
 5. The work shall be executed according to SCHEDULE OF WORK items, specifications and conditions specified in tender document, approved architectural, structural and service drawings and directions of Engineer-in-charge or his authorized representative.
 6. The above-mentioned scope of work of the contractor which is **only indicative and not exhaustive**. The contractor shall be responsible for executing all items required for completing the buildings and allied works in all respects to make it habitable and ready for occupation, as per direction of Engineer-in-charge.

7. The scope of work includes cost of all materials, manpower, equipment's, T&P, fixtures, accessories, royalties, taxes, watch & ward and all other essential elements for completion and maintenance of works whatsoever, under the scope of this contract. Any changes, modifications, revisions etc. required to be done by CPWD, client, local bodies, design consultants etc. in accordance with applicable standards will have to be executed by the contractor as per provisions of the contract specified elsewhere in this bid document.
8. **Drawings:** The drawings related to this work can be seen in the office of **Executive Engineer (Agra), CPWD, Agra**. These drawings are indicative and may change as per actual requirement of work.

RECEIPT OF DEPOSITION OF ORIGINAL EMD

(Receipt No.#..... / date #)

Name of work: **Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).**

1. NIT No.: **05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27**
 2. Estimated Cost: **Composite Rs. 5,59,44,611/- {(Civil Work: - Rs. 4,45,73,921/-(+)
Electrical Work: - Rs. 1,13,70,690/-)}**
 3. Amount of Earnest Money Deposit: **Rs. 11,18,892/-**
 4. Last date of submission of bid: **Up to 3.00 PM on 01.09.2026**
-

Name of Contractor: -----#-----

1. Form of EMD: -----#-----
2. Amount of earnest money deposit: -----#-----
3. Date of submission of EMD: -----#-----

Signature, Name and designation of EMD

receiving officer (EE/AE(P)/AE/AAO) along with officer Stamp

--#-- To be filled by EMD receiving EE.

CPWD-6 FOR E- TENDERING

1. ~~Item rate~~ / Percentage rate bids are invited on behalf of President of India from approved and eligible contractors of CPWD dealing with building and roads for the Work of **Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work)**. The enlistment of the contractors should be valid on the last date of submission of bids.
In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.
- 1.1 The work is estimated to cost **Rs. 5,59,44,611/-**. This estimate, however, is given merely as a rough guide.
- 1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids. For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.
2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7**(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 **(12) Twelve months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. (i) The site for the work is available.
(ii) The architectural and structural drawing for the work will be made available as per requirement and stage of work.
5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times or withdraw it before last date and time of submission of bid as notified. No post-tender modification is allowed by the tenderers except through negotiations, if required. In case, any tenderer does so, the tender will be rejected and the tenderer will be debarred for future tendering in CPWD for two years by the concerned enlisting authority (in case of CPWD enlisted contractor) and by the concerned CE/SE (in case of non-enlisted contractor).

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
9. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee including e- Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks (drawn in favour of Executive Engineer, Agra Central Division, CPWD, Agra) shall be scanned and uploaded on the e-Tendering web site within the period of bid submission. The original **EMD** should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT. (EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted).

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lacs, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee including e- Bank Guarantee of any Commercial bank having validity for a period of 90days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

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

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. **However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority.**

Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited EMD with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at **03:30 PM on 01.09.2026**

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 / subhead 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 an irrevocable performance Guarantee as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F', from the date of issue of letter of acceptance. Performance guarantee at specified percentage of tendered amount as mentioned in scheduled E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule „F“ including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident fund code no. if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within the period specified in Schedule F.
12. **The description of the work is as follows:**
- Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).**
- Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a 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.
13. The competent authority on behalf of the President of India does not bind itself to accept the lowest

or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

14. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
15. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
16. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Housing and Urban Affairs. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
18. The bids for the work shall remain open for acceptance for a period of 30 (thirty) days from the date of opening of bids in case of single bid system and 75 (seventy-five) days from the date of opening of technical bids in case bids are invited in 2 or 3 bid system.

Further

- (i) If any tenderer withdraws his tender within 7 days after last date and time (24 hours basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (ii) If any tenderer withdraws his tender after expiry of 7 days after last date and time (24 hours basis) of **submission of bids**, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (iii) **Withdrawal of the tender, by the tenderer, shall only be made through e-tender portal. Any other method i.e. through letter / e-mail etc. shall not be considered.**
- (iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.

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

associated shall be approved by Engineer-in-Charge of relevant component(s).

- 20.1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in Charge of relevant specialized component(s).

The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-Charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.

- 20.1.10 The main contractor has to enter into MoU with agency(s) associated by him. Copy of such MoU shall be submitted to EE in charge of each relevant component as well as to EE-in-charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU/agreement with the new contractor associated by him.

- 20.1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor. The CMB shall be maintained independently by Engineer-in Charge of major and minor components.

- 20.1.12 A. The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-Charge of major component after record of completion certificate of all other components.

- 20.1.12 B. Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.

21. 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 0562-2850556, e-mail Id. agreeaced.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.

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

Percentage Rate Tender/Item Rate Tender & Contract for Works

- (A) Tender for the work of **“Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).”**
- (i) To be uploaded by **15:00 hours on 18.08.2026** on website: <https://etender.cpwd.gov.in/> or [www. cpwd.gov.in](http://www.cpwd.gov.in)
- (ii) To be opened in presence of tenderers who may be present at **15:30 hours on 01.09.2026** in the office of Executive Engineer, CPWD, Agra.

TENDER

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

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

I/We agree to keep the tender open for **Thirty (30) days** from the due date of its opening in case of single bid system and not to make any modification in its terms and conditions.

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

A copy of earnest money deposit **Rs. 11,18,892/-** receipt of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank, is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available

in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

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

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

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

Dated

Signature of Contractor

Witness:

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

On non-judicial stamp paper of minimum Rs. 100

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

Form of Bank Guarantee for Earnest Money Deposit /Performance

Guarantee/Security Deposit/Mobilization Advance

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

OR**

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

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

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

Date

Witnesses:

1. Signature.....

Name and address

Authorized signatory

Name

Designation

Staff code no.

Bank seal

2. Signature

Name and address

*Date to be worked out on the basis of validity period of 30 days where only financial bids are invited and 75 days for two/three bid system from the date of submission of tender.

****In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be. (Added vide OM No. DG/CON/ 311 dated 20.10.2020)**

UNDERTAKING FOR ELECTRICAL ASSOCIATE(S)

Name of Work: “Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).”

NIT No.: 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

I, undertake that in case we become lowest tenderer and are offered to execute the work, we will obtain valid electrical license or associates the agency having valid electrical license, so as to participate in the tender and shall keep the license till the end of the work.

Signed by

(TENDERER)

Name: -

Address:

With seal

PROFORMA OF SCHEDULES A to F (for Civil and Electrical component)

(Separate Performa for Civil & Elect. works in case of Composite Tenders)

SCHEDULE 'A'	
Schedule of quantities (as per PWD-3)	(Civil Work: - Attached at page no. 139 to 179) (Electrical Work: - Attached at page no. 207 to 257)
SCHEDULE 'D'	
Extra schedule for specific requirements / document for the work, if any.	Nil
SCHEDULE 'E'	
Reference to General Conditions of contract	GCC 2023 for Construction work with amendments issued up to last date of upload /Submission of bid including extension to bid submission date, if any.
Name of Work	Tender for the work of “ Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work). ”
Estimated cost of work	Composite Rs. 5,59,44,611/- {{(Civil Work: - Rs. 4,45,73,921/-(+) Electrical Work: - Rs. 1,13,70,690/-}}
(i) Earnest money	Rs. 11,18,892/- EMD shall be made / issued only from the account of the bidder / tenderer submitting the bid/tender. EMD made/ issued from the account other than that of the bidder/ tenderer submitting the bid, shall not be accepted
(ii) Performance Guarantee	(a) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.
(iii) Security Deposit	2.5% of tendered value.

SCHEDULE 'F'**GENERAL RULES & DIRECTIONS**

Officer inviting tender		Executive Engineer, CPWD, Agra
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3.		See below
Definitions		
2(vi)	Engineer-in-Charge	
	For Civil Component	Executive Engineer, CPWD, Agra or his successor thereof
	For Electrical Component	Executive Engineer(E), CPWD, Agra or his successor thereof
2(viii)	Accepting Authority	Superintending Engineer (Agra), CPWD, Agra
2(x)	Percentage on cost of materials and Labour to cover all over heads and profits.	15% (Fifteen Percent)
2(x)(a)	Standard Schedule of Rates	
	Civil Items of Work	DSR 2023 with correction slips upto last date of upload /Submission of bid including extension to bid submission date, if any
	Electrical Items of Work	DSR 2025 (E&M) with amendments up to last date of upload /Submission of bid including extension to bid submission date, if any
2(xi)	Department	Central Public Works Department
9(ii)	Standard CPWD contract Form GCC 2023, CPWD Form 7/8 as modified & corrected upto date.	GCC 2023 for Construction work, CPWD form 7 as modified & corrected up to last date of upload /Submission of bid including extension to bid submission date, if any
Clause1	(i) Time allowed for submission of Performance Guarantee, programme chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance	7 (Seven) days
	(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) Above	3 (Three) days with late fee @ 0.1% per day of the PG amount (nonrefundable)
Clause2	Authority for fixing compensation under clause 2	Superintending Engineer, Agra, CPWD, Agra or successor thereof
	Applicable Clause 2	Yes
Clause5	Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given below:	10 days

Mile stone(s) for the Work (Civil) as per table given below

Sl. No.	Description of Milestone (Physical)	Period of completion from date of start	Amount to be with-held in case of non-achievement of mile stone	
1.	i. Completion of all RCC work upto and including plinth beam (excluding grade slab, if any) for the whole Building ii. Completion of Retaining wall portion of boundary wall upto the height of Earth filling.	3.5 Months	0.50 % 0.50%	Of tendered value of Civil component
2.	i. Completion of all RCC work of roof slab for stilt and first storey. ii. Earth filling minimum 1500mm average above NGL.	5.5 Months	0.5% 0.25%	Of tendered value of Civil component
3.	i. Completion of all RCC work including Mumty, Lift machine room if any as per approved structural/ architectural drawing of the building ii. Completion of all Infill Masonry / Block work up to Lintel Level in first storey of the building.	7.5 Months	0.5% 0.25%	Of tendered value of Civil component
4.	i. Completion of all Infill Masonry /Block work in the building ii. Completion of all Concealed Internal Water Supply and Sanitary Works in the Building.	9 Months	0.125% 0.125%	Of tendered value of Civil component
5.	i. Completion of All Internal Plastering Work in the whole Building ii. Fixing of Door frames in the whole building. iii. Completion of external plastering works of the building.	10 Months	0.25% 0.125% 0.25%	Of tendered value of Civil component
6.	i. Completion of all types of Flooring Work / Dado Work in building ii. Fixing of all doors and Windows in the whole Building. iii. Completion of boundary wall in all respect	11 Months	0.25% 0.125% 0.25%	Of tendered value of Civil component
7.	Completion of whole work as per scope and site cleaning, C&D waste removal, Levelling /Dressing; and submission of as built drawings, services (Civil) drawings; Commissioning and handing over of the inventory of civil work.	12 Months	0.5%	Of tendered value of Civil component

Mile stone(s) for the Work (Electrical) as per table given below

Sl. No.	Description of Milestone (Physical)	Period of completion from date of start	Amount to be with-held in case of non-achievement of mile stone	
1.	Supply of material at site for Laying and fixing of all conduits, Switch boxes, DBs for building.	4.5 months	0.5 %	Of tendered value of electrical component
2.	i. Supply and fixing of electrical panels, ELV conduiting work etc. ii. Supply and installation of complete Firefighting MS pipe.	6 months	i. 0.25 % ii. 0.25%	Of tendered value of electrical component
3.	Supply of all materials at site for: - i. Fire Alarm, Fire Fighting System ii. LAN and EPABX, CCTV system. iii. Electrical fitting and fixtures such as LED lights, FANs and accessories iv. Electrical wire and power/ELV Cables.	8 months	i. 0.125 % ii. 0.125 % iii. 0.25 % iv. 0.25 %	Of tendered value of electrical component
4.	Supply of all materials at site for: - i. Air conditioner ii. DG set iii. Street Lighting system iv. Lift v. UPS vi. Solar PV system	10 months	i. 0.25 % ii. 0.5 % iii. 0.5 % iv. 0.5 % v. 0.25% vi. 0.25%	Of tendered value of electrical component
5.	Installation of all E&M System and services.	11 months	0.5 %	Of tendered value of electrical component
6.	Testing and commissioning of all E&M installations, Street lighting installations and handing over of Inventory of all installation.	12 months	0.5 %	Of tendered value of electrical component

Time allowed for execution of work.

(12) Twelve Months

Authority to:		
1	Convey the decision of shifting of milestone and extension of time	Engineer-in-Charge of Major Component or his successor thereof.
2	Decide rescheduling of milestone and extension of time	Superintending Engineer, Agra, CPWD, Agra or his successor thereof
3	Shifting of date of start in case of delay in handing over of site	Superintending Engineer, Agra, CPWD, Agra or his successor thereof

Clause 5: Schedule of handing over of site

Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
PartA	Portion without any hindrance	Full site	10 days
PartB	Portions with encumbrances	N.A.	--
PartC	Portions dependent on work of other agencies	N.A.	--

Clause 5.1(iv)	Recovery for non-submission of monthly progress report to Engineer -in-charge (Major)	Rs. 1000/- per week or part
Clause 5.4	Recovery for delay in submission of revised programme to Engineer -in-charge (Major)	Rs. 250/- per day

Clause6	Computerized Measure Book (CMB) / (Electronic Measurement Book (EMB) (i) Mode of measurement	EMB
Clause7	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. 34.14 Lakh for Civil Component Rs. 9.48 Lakh for Electrical Component
Clause7A	Whether clause7A shall be applicable	Yes (No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-charge).
Clause 8	Competent authorities to inspect and issue final completion certificate	1. Engineer-in-charge major component. 2. Engineer-in-charge minor component.

Clause 8A	Authority to decide compensation on account if contractor fails to submit completion plans	Superintending Engineer Agra
Clause 10A	List of testing equipment to be provided by the contractor at site lab	As attached in tender Page No. 32 Civil As attached in tender Page No. 33 Electrical
Clause 10B(ii)	Whether Clause 10B (ii) shall be applicable	Yes
Clause 10C	Applicable/Not Applicable	Not Applicable
Clause 10CC	Applicable/Not Applicable	Applicable

A. For All except Electrical Component:

S. No.	Relevant component of Materials / Labour for price escalation	Percentage of Total value of work (All except Electrical Component)
1.	Component of Cement (C_p)	15%
2.	Component of Labour (L_p)	25%
3.	Civil Component of other Construction Materials (CM_p)	40%
4.	Electrical and Mechanical (E&M) Component of construction Materials (EM_p)	Nil
5.	Component of POL (Diesel) (F_p)	Nil
6.	Component of Reinforcement Steel Bars / TMT Bars / Structural Steels (including Strands and Cables) (S_p)	20%
7.	Component of Bitumen (B_p)	Nil
Total		100%

B. For Electrical Component:

S. No.	Relevant component of Materials / Labour for price escalation	Percentage of Total value of work (Electrical Component only)
1.	Component of Labour (L_p)	25%
2.	Electrical and Mechanical (E&M) Component of construction Materials (Emp)	75%
Total		100%

Clause 11	Specifications to be followed for execution of work	
	Civil works	CPWD Specifications 2019 Vol. 1 and Vol. 2 with correction slips up to day previous to last date of submission of tender.

	E & M works	CPWD General specification for Electrical Works, Part-I (Internal)-2023; Part-II (External)-2023, Part-V (wet riser and sprinkler system)-2020, Part-VI (Fire Detection & Alarm System), HVAC-2024, Lift-2003, DG Set-2013, with correction slips up to day previous to last date of submission of tender.
Clause 12	Type of work:	Original Construction Work.
12.2(c)	Deviation Limit beyond which clauses 12.2 (c) shall apply for building work	100 %
12.4	(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (Except items mentioned in earth work subhead in DSR and related items) (ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	100% 100%

Clause 16	Competent Authority for deciding reduced rates	Superintending Engineer, Agra, CPWD, Agra or successor thereof
Clause 18	List of mandatory machinery, tools & plants to be deployed by the contractor at site	As attached in tender Page No. 34 for Civil & 35 for Electrical
Clause 19C	Respective Engineer-in-charge or successor thereof authority to decide penalty for each Default	
Clause 19D	Respective Engineer-in-charge or successor thereof authority to decide penalty for each Default	
Clause 19G	Respective Engineer-in-charge or successor thereof authority to decide penalty for each Default	
Clause 19K	Respective Engineer-in-charge or successor thereof authority to decide penalty for each Default	
Clause 25	(i) Conciliator: ADG(RL), CPWD, Lucknow	
	(ii) Arbitrator Appointing Authority: Superintending Engineer, CPWD, Agra	
	(iii) Place of Arbitration: Agra	

Clause32		Requirement of Technical Representative(s) and recovery Rate			
Sl. No.	Requirement of Technical Discipline		Minimum Experience (Years)	Designation Technical Staff	Rate at Which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32
	Qualification	Number of Major + Minor Component			
1	Graduate Engineer	1	5	Project Manager	Rs. 25,000/- per month
	Graduate Engineer Or Diploma Engineer	1+1	2 or 5 respectively	Project planning/ Quality/ billing Engineer	Rs. 15,000/- per month per person

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

Diploma holder with minimum 10 year relevant experience with are putted construction co. can be treated at par with Graduate Engineers for the purpose of such deployment.

Clause38

- (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 Printed by C.P.W.D. DSR 2023 with correction slips upto the previous day of submission of tender. DSR 2025 (E&M) with amendments up to date of submission of bid.
- (ii) **Variations permissible on theoretical quantities:**
- (a) Cement
For works with estimated cost put to tender not more than Rs. 25 lakh. 3% plus/minus.
For works with estimated cost put to tender more than Rs.25lakh. 2% plus/minus.
- (b) Bitumen All Works 2.5% plus & only & Nil on minus side.
- (c) Steel Reinforcement and structural steel sections for each diameter, section and category 2% plus/minus
- (d) All other materials Nil

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

To,

The Executive Engineer
CPWD, Agra- 282002

I/we hereby give an undertaking for the given work as follows:

NIT No.: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

**Name of work: - Construction of Office Building and Residential Quarters for SIB
Etawah (U.P.) (SH: Civil and Electrical Work).**

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

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

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

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

Signature of notary with seal

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

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

List of Testing equipment for Civil Work to be provided by the contractor at site lab

S.N.	Equipment	Numbers (Minimum)	Remarks
1	Automatic compression testing machine of 100 tonne capacity, electrical cum manually operated.	1	
2	Concrete cube moulds 15x15x15cm.	30	
3	Pruning Rods 2Kg weight, length 40cm and ramming face 25mm	2	
4	Extra Bottom plates for 15cm cube mould	6	
5	Slump testing equipment- slump cone, steel plate, taping rod, steel scale, scoop	1	
6	Set of Sieves for coarse aggregate	1	
7	Set of sieves for fine aggregate	1	
8	Electronic Balance 10 kgs, 50 kgs	1 No. each	
9	Physical balance 5 kgs	1	
10	Measuring jars 100ml, 200 ml, 500 ml	2 Nos. each	
11	Measuring cylinder 3,5,10 litre	2 Nos. each	
12	Gauging trowels 100 mm & 200 mm with wooden handle	2 Nos. each	
13	Spatula 100 mm & 200 mm with long blade wooden handle	2 Nos. each	
14	Vernier callipers 12" & 6" size	2 Nos. each	
15	Screw gauge 0.1mm-10mm, least count 0.05	2	
16	Digital paint thickness meter for steel 500-micron range	1	
17	Thickness gauge for measuring flakiness index	1	
18	Elongation gauge	1	
19	Motorised sieve shaker	1	
20	Digital thermometer upto 150 degree C	2	
21	Iron weight of 5kg, 2kg, 1kg, 500 gms, 200 gms, 100 gms	1	
22	Hammer 1lb & 2 lbs	2	
23	Digital PH meter least count 0.01 mm	1	
24	Digital micrometre least counts 0.01 mm	1	
25	Oven- Electrically operated, thermostatically controlled upto 110 degree C and sensitivity 10-degree C.	1	
26	Any other equipment for site tests as outlined in BIS and as per Direction of Engineer-in-charge.	As per Requirement	

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

List of Testing equipment for Electrical Work to be provided by the contractor at site lab

Sl. No.	Description of Item	Requirement
1.	L.T. Meggar 500/1000 volts.	2 No.
2.	Tong Tester.	2 No.
3.	Multimeter.	2 No.
4.	Earth tester.	2 No.
5.	Vernier calliper	2 No.
6.	Screw gauge	2 No.

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

Sl. No.	Name of Equipment		Numbers
1	Excavators (various sizes)		As per requirement of work and direction of Engineer-in-Charge.
	Equipment for hoisting & lifting		
1	Tower Crane		
	Equipment for Concrete work		
1	Semi-Automatic batching plant of capacity more than 10 cum / hr or as per direction of Engineer-in-Charge		
2	Concrete pump (Desirable)		
3	Concrete Transit Mixer		
4	Concrete mixer (diesel)		
6	Needle vibrator (electrical)		
7	Needle vibrator (petrol)		
8	Surface vibrator		
	Equipment for Building work		
1	Bar bending Machine		
2	Bar cutting machine		
3	Drilling machine		
4	Wall grooving machine for chase cutting		
5	Welding machine i/c transformer		
6	Rig machine		
7	Cube testing machines		
8	M.S. pipes	} As per requirement or as directed by Engineer-in- Charge	
9	Steel shuttering		
10	Steel scaffolding		
11	Grinding/polishing machines		
	Equipment for transportation		
1	Tippers		
2	Trucks		
	Pneumatic equipment		
1	Air compressors (diesel)		
	Dewatering equipment		
1	Pump (diesel)		
2	Pump (electric) (Desirable)		
	Power equipment		
1	Diesel Generator		

List of mandatory T&P to be deployed by the contractor at site for Electrical work

Sl. No.	Description of Item	Requirement
1.	Steel/Aluminium Ladder 1.5 m to 8 m.	2 Nos.
2.	Chase cutting machines.	4 Nos.
3.	Electrical wire drawing equipment.	3 Set.
4.	Torque wrench for nut/bolt/screws.	5 Nos.
5.	Conduit die set.	3 Set.
6.	Pipe vice.	2 No.
7.	Bench vice.	2 No.
8.	Hydraulically operated & hand operated crimping machine.	1+1 No.
9.	Portable Ordinary drilling machine.	4 Nos.
10.	Portable Hammer drilling machine.	2 Nos.
11.	Overhead conduit puller.	1 No.

Special Terms and Conditions

Specifications & Order of Preference

- 1.0 Except for the items, for which Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the latest versions of CPWD Specifications 2019 Vol. 1 and Vol. 2 with correction slips; CPWD General specification for Electrical Works, Part-I (Internal)-2023; Part-II (External)-2023, Part-V (wet riser and sprinkler system)-2020, Part-VI (Fire Detection & Alarm System)-2018, HVAC-2024, Lift-2003, DG Set-2013, Substation-2013 with correction slips up to day previous to last date of submission of tender. (**Hereinafter to be referred to as CPWD specifications**), Additional/ Particular Specifications, Architectural/ Structural drawings and as per instructions of Engineer-in-charge. Any additional item of the work, if taken up subsequently, shall also conform to the relevant CPWD specifications as mentioned above. All Architectural drawings given in the tender, if any, 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.
- 2.0 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scaled dimensions.
- 3.0 If there is any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed
 - (i) Description of items as given in Schedule of Quantities.
 - (ii) Particular Specifications, Special Conditions and Additional conditions, if any.
 - (iii) Drawings.
 - (iv) CPWD Specifications.
 - (v) General conditions of contract for CPWD works.
 - (vi) Indian Standard Specifications of B.I.S.
 - (vi) Manufacturers "specifications & as decided by Engineer-in charge."
 - (vii) Sound Engineering practices.
 - (viii) Decision of Engineering in Charge.
- 4.0 In the event of any variation/ discrepancy in the drawings, specifications and tender documents etc. the decision of the Engineer-in-charge shall be final binding and conclusive on the contractor and in the case the contractor have any doubt and the same should be got clarified immediately from the Engineer-in-charge and no claim of the contractor shall be entertained thereafter. Moreover, the agency is not allowed to take benefit out of any clerical/ grammatical mistake in the standard clauses/Schedule of Quantities/Specifications etc. being used in the agreement.

Scope

- 5.0 The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.
- 6.0 The works to be undertaken by the contractor shall inter alia include the following:
- i. Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
 - ii. Obtaining of Statutory permissions wherever applicable and required.
 - iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
 - iv. Warranty obligation for the equipment and/or fittings/fixtures supplied by the contractor.
- 7.0 All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, barricading, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts.
- 8.0 The work shall be carried out, all in accordance with true intent and meaning of the specifications, the drawings, and other terms & conditions in the bid documents all taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the bid document but will be necessary to complete the work in all respects. All these incidental works / costs which are not mentioned in bid document but are necessary to complete the work in all respects shall be deemed to have been included in the rate quoted by the contractor. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the work and are necessary to complete the work in all respects) on account of the directions of Engineer-in-charge. Nothing extra shall be payable on this account.
- 9.0 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their measurements recorded, duly test checked by JE / AE in charge of the work in electronic measurement and submitted with Engineer in charge or his authorized representative, prior to hiding these items.

Site Conditions / Soil and subsoil conditions / Space Availability at Site / Drawings available

- 10.0 The Tenderer(s) shall, before tendering, inspect the site of work and get acquainted himself with the site conditions, nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction and no claim on this account shall be entertained by the department.

- 11.0 The Tenderer(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters of site. However, no claim on the alleged inadequacy or incorrectness of the soil data shall be entertained.
- 12.0 The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of the **Executive Engineer, Agra Division, CPWD**. The department shall not bear any responsibility for the lack of knowledge and the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the bid documents have been furnished, in good faith, for general information and guidance only. The Engineer in-Charge, in no case, shall be held responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in bid document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the bid document. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.
- 13.0 The tenderer(s) shall see the approaches to the site. In case any approach from main road is required by the contractor, the same shall be made good, improved, and maintained by the contractor at his own cost. No payment shall be made on this account.
- 14.0 There may be space limitation in the campus in which work is to be carried out and in case CPWD / Owner or User department authorities decides for any reasons whatsoever that no space can be provided in the campus for erection of labour hutment, setting up of office, storage of materials, erection of temporary workshops etc. then Contractor must at his own expense and risk arrange land / space for such at any other place in proximity of the campus. Nothing extra shall be paid on this account.
- 15.0 The site shall be handed over on as is where is basis and it shall be deemed that the contractor has satisfied himself as to the nature and location of the work, transport facilities, availability of land for setting up of camp, etc. The department will bear no responsibility for lack of such knowledge & the consequences thereof.

Site / construction yard layout Display Boards / Site Office / Facility for Department

- 16.0 Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.
- 17.0 The contractor shall make arrangement for **Helmets and leather shoes** (meant of construction work at sites) for all field staff of the department during the entire period of construction for safety reasons. One helmet and two pairs of shoes per staff member (maximum 5 members) of the departments per year shall be arranged by the contractor.
- 18.0 Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, and indicate 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, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Associate contractors and specialized agencies. Nothing extra shall be payable on this account.

Temporary Water / Electricity / Telephone Connections

- 19.0 Arrangement of temporary telephone connection, water and electricity required by contractor, shall be made by him at his own cost. All necessary permissions shall be obtained by him directly from concerned authorities, under intimation to the Engineer-in-charge. All initial cost and running charges, and security deposit, if any, in this regard shall be borne by the contractor. The contractor shall abide by all the rules/ bye laws applicable in this regard and he shall be solely responsible for any penalty on account of violation of any of the rules / byelaws in this regard. In case concerned authorities 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. Nothing extra shall be payable on this account.
- 20.0 The contractor shall be responsible for maintenance and watch and ward of the complete installation and water / electricity meter and shall also be responsible for any pilferage, theft, damage, penalty etc in this regard. The contractor shall indemnify the Department against any claim arising out of pilferage, theft, damage, penalty etc. whatsoever on this account.
- 21.0 Security deposit for the work shall be released only after **No Dues Certificates** are obtained from the local Authorities from whom temporary electric/ water / telephone connection have been obtained by the contractor. Nothing extra shall be payable on this account.
- 22.0 The Department shall in no way be responsible for either any delay in getting electric and/or water and/or telephone connections for carrying out the work or not getting connections at all. No claim of delay or any other kind, whatsoever, on this account shall be entertained from the contractor. Also, contingency arrangement of stand-by water & electric supply shall be made by the contractor for commencement and smooth progress of the work so that work does not suffer on account of power failure or disconnection or not getting connection at all. No claim of any kind whatsoever shall be entertained on this account from the contractor. Nothing extra shall be payable on this account.
- 23.0 For water supply, contractor shall make his own arrangements including boring of tube well, if necessary and nothing extra shall be paid by the Department for arrangement of water or on its treatment as per IS:456/ 2000, para 5.4 of CPWD specifications 2019 volume-I & II with upto date correction slips. Necessary approval shall be taken by the contractor from the concerned Ground Water Department for boring of tube wells.
- 24.0 The contractor shall get the water tested with regard to its suitability for use in the works and get written approval from the Engineer- in-Charge before he proceeds with the use of same for execution of works. If the tube well water is not suitable, the contractor shall arrange Municipal water at his own cost and nothing extra shall be paid to the contractor on this account. Water charges shall not be recovered in case arrangement of water is made at his own by the contractor.

Applicable Permits / Local Bye Laws / Security and Safety restrictions

- 25.0 The contractor (s) shall give to the Municipality, Police, and other authorities all necessary notices etc. that may be required by law and obtain all requisite Licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract. He shall ensure that applicable permits mandated by the local

bodies and in case warranted for this work are obtained as required under the Applicable Laws. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain light and other illumination on for cautioning the public at night. 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.

- 26.0 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. The work shall be always carried out by the contractor in the manner complying in all respects with the requirements of the relevant bylaws and regulations of the local body and any other statutory bodies under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-charge and nothing extra shall be paid on this account.
- 27.0 The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department (**CPWD**) and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.
- 28.0 The building work shall be carried out in the manner complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed and/or as directed by the Engineer in-Charge and nothing extra shall be paid on this account.
- 29.0 In the event of any restrictions being imposed by the local police, Security agency, CPWD, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.
- 30.0 No Entry/exit/roads other than specified by the Engineer-in-charge for purpose of construction activities will be allowed to be used for construction activity purposes or movement of trucks/lorries/load-carriers and nothing extra/ delay whatsoever will be accounted for on this part.
- 31.0 All the vehicles carrying the material to the work site shall be subject to check and entries to be made at the gates by security post. No material shall be taken out without proper gate pass issued by the Engineer-in-Charge or his authorized representative.

Precautionary Measures / Safety Measures

- 32.0 Proper temporary barricading by fencing with painted M.S. sheets with lettering, shall be carried out by the Contractor at the start of work to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent to the sites. It shall be done by providing, erecting, maintaining temporary protective barricading, 3.0 metres high or required as per drawing approved by Engineer-in-charge. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 1.8 metres spacing, for the entire duration till completion of the work. Contractor shall also provide and erect temporary protective barricades within the plot, if required,

to prevent any accident. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in- Charge. Nothing extra shall be payable on this account. The barricading panels shall be painted and “CPWD” mark should be made in suitable size, shapes and number as directed by Engineer-in-charge without any extra cost.

- 33.0 Contractor shall within two weeks of award of work, submit to the Engineer-in-charge of respective discipline for his approval, list of measures for maintaining safety of manpower deployed for construction and avoidance of accidents.
- 34.0 The contractor shall take all precautions to avoid accidents by providing and exhibiting day and night all temporary warning / caution boards / glow signage display such as “Construction Work in Progress”, “Keep Away”, “No Parking”, Diversions & protective Barricades etc., speed limit boards, red flags, red lights and providing necessary barriers and other measures required from time to time. These glow signage and red lights shall be suitably illuminated during night also. He shall be responsible for all damages and incidents caused to existing / new work due to negligence on his part. Care shall be taken by the Contractor to have no hindrances caused to traffic flow due to the execution of the work. In case any hindrance to traffic flow is expected due to or during the execution of work, the same shall be kept least as possible as possible and required permission in this regard from authorities concerned must be obtained at the relevant time by the contractor prior to execution. These signages shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.
- 35.0 No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer-in-Charge in this regard. Also, all precautions and safety measures shall be taken by the contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.
- 36.0 The contractor shall comply with the safety procedures, norms and guidelines (as applicable) as outlined in the “Constructional practices and safety- 2005”, National Building code of India, Bureau of Indian Standards. A copy of all pertinent regulations and notices concerning accidents, injury and first-aid shall be prominently exhibited at the work site. Depending upon the scope & nature of work, a person qualified in first-aid shall be available at work site to render and direct first-aid to casualties. A telephone may be provided to first-aid assistant with telephone numbers of the hospitals displayed. Complete reports of all accidents and action taken thereon shall be forwarded to the competent authorities.
- 37.0 The contractor shall ensure the following activities for construction workers safety, among other measures:
 - a. Guarding all parts of dangerous machinery.
 - b. Precautionary signs for working on machinery
 - c. Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.
 - d. Durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.
 - e. Ensuring that walking surfaces or boards at height are of sound construction and are provided with safety rails or belts.
 - f. Provide protective equipment; helmets etc.

- g. Provide measures to prevent fires. Fire extinguishers and buckets of sand to be provided in the fire-prone area and elsewhere.
 - h. Provide sufficient and suitable light for working during night time.
- 38.0 Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost. The contractor shall take all precautions to prevent his workmen and employees from removing and damaging any Flora (plant/vegetation) from the campus/site.
- 39.0 The contractor, his authorized representative, workmen etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.
- 40.0 The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in Charge.
- 41.0 The Contractor shall use such methodology and equipment for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor.

Deployment of Technical Staff & Skilled Labour / Supervision

- 42.0 The quality of work is of paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work to provide the desired quality. The Contractor shall depute Site Engineer & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision-making powers shall be available to the representatives of the contractor at site itself to avoid any likely delays on this account. The contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit. The Project Manager, Site Engineer along with all technical staff of the contractor should have experience in similar nature of work as mentioned in the clause 32 of the GCC, and they shall always be available at the site during execution of work.
- 43.0 No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall also not be allowed to erect any temporary set up for his staff in the campus. However, labour camps shall be constructed at site as per General conditions of contract.
- 44.0 No claim of the labourers/Supervisor shall be entertained including that of providing employment, regularization of services etc.
- 45.0 Site Engineer/Supervisor shall carry mobile telephone (s) to enable the Engineer-in-Charge / occupants to have easy and quick communication. Nothing extra shall be paid to the contractor on this account and his quoted rates for various items under this contract will be inclusive of this obligation.

- 46.0 The staff employed by the contractor should be well behaved and any complaint of mis behaviour shall be taken very seriously and such staff will have to be removed by the contractor immediately from the site.
- 47.0 Contractor shall be fully responsible for any damages caused to government property or allottee's property by him or his labour in carrying out the work and shall be rectified by the contractor at his own cost.
- 48.0 Any labour engaged by the contractor shall be in possession of photo ID card failing which they are liable to be disengaged from the work and shall not be allowed to enter into the campus. The movement of the labour shall be restricted to the barricaded work site area only.
- 49.0 Necessary protective and safety equipment shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and used at site.
- 50.0 In case of any nuisance caused by activities attributed to contractors' staff, workmen and movement of vehicle, and reported to CPWD by Owner / User department (an officer of the rank not lower than EE) commensurate penalty not exceeding Rs. 5000/- for each nuisance shall be imposed on the contractor by CPWD in consultation with client.

Labour and Security

- 51.0 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.
- 52.0 No payment shall be made for construction of labour housing. Contractor should provide his plan for labour huts as per his requirement and get it approved from Engineer-in-Charge. The contractors are required to provide such accommodation as it is acceptable to local bodies and nothing extra shall be paid on this account.
- 53.0 Normally contractor shall be allowed to carry out work between 7 AM to 6 PM. However, he may also be allowed to carry out the work beyond 6 PM & upto 7 AM, if the site conditions / circumstances so demand with prior written permission from the Engineer-in-charge. However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.
- 54.0 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the department.
- 55.0 Any trenching and digging for laying sewer lines/water lines/cables etc. shall be commenced by the contractor only when all men, machineries and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time.

General Cleanliness of the Site

- 56.0 The site of work shall be always kept clean in general strictly adhering to approved job layout and green building parameters. The work shall be carried out in such a way that the area is kept clean and tidy. The Contractor shall take all care to prevent any water- logging at site. The waste water shall not be allowed to be collected at site. It may be directly pumped into the public drainage system with prior approval of the concerned authorities. For discharge into public drainage system,

necessary permission shall be obtained from concerned authorities after paying the necessary charges, if any, directly to the authorities.

- 57.0 The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc. are to be constructed. He shall not stack building material/ malba on the road or on the land owned by any other authority, as the case may be. In case, the Contractor is found stacking the building material/ malba as stated above, he shall be liable to pay the stacking charges as may be levied by local body or authority and also to face penal action as per the rules, regulations and byelaws of the said body or authority. The Engineer-in-Charge shall be at liberty to recover the sums due but not paid to the concerned authorities on the above counts from any sums due to the contractor including amount of the Security Deposit or Retention Money in respect of this contract or any other contract.
- 58.0 The muck, rubbish etc. generated during execution of the work shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local bye laws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account.
- 59.0 The contractor shall comply with the provisions of Construction and Demolition Waste Management Rules, 2016 as per Ministry of Environment and Forest notification dated 29/03/2016 issued in exercise of powers conferred by Environment (Protection) Act 1986 (Available on web address www.moef.gov.in). The contractor shall also follow all rules and regulations regarding disposal of C&D waste as per approval of local bodies. The contractor shall not store/dump construction material or debris on metalled road. 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.

Prevention of Nuisance and Pollution Control and Conditions of National Green Tribunal

- 60.0 The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants, or occupiers of adjacent properties and to the public in general and to prevent any damage to such properties from pollutants like smoke, dust, noise. The contractor shall use such methodology and equipment so as to cause minimum environmental pollution of any kind and minimum hindrance to road users and to occupants of the adjacent properties or other services running adjacent/near vicinity. The contractor shall make good at his cost and to the satisfaction of the Engineer in-Charge, any damage to roads, paths, cross drainage works or public or private property whatsoever caused due to the execution of the work or by traffic brought thereon by the contractor.
- 61.0 The Contractor shall take all precautions to abide by the environmental related restrictions imposed by any statutory body having jurisdiction in the area as well as shall take all precautions to prevent any pollution of streams, ravines, river bed and waterways. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. All waste or superfluous materials shall be transported by the Contractor, entirely to the satisfaction of the Engineer- in-Charge and disposed at designated places only. No claim what so ever on account of site constraints such as lack of public transport,

inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

- 62.0 The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (tree/plant/vegetation) from the project area.
- 63.0 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.
- 64.0 The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precaution that the vehicle is 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.
- 65.0 The Contractor shall provide mask to every working on the construction site and involving in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles. 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.
- 66.0 The Contractor shall compulsorily use of wet jet in grinding and stone cutting.
- 67.0 The Contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
- 68.0 The Contractor shall carry out on- Road-Inspection for black smoke generating machinery.
- 69.0 The Contractor shall use cleaner fuel. The Contractor shall ensure that all DG set comply emission norms notified by MoEF.
- 70.0 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 case where speed reduction cannot effectively reduce fugitive dust, the Contractor shall divert traffic to nearby paved areas.
- 71.0 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.
- 72.0 Any violation of orders of MoEF including guidelines of State Government, SPCB or any officer of any department shall lead to stoppage of work for which Contractor shall be responsible and no hindrance shall be accounted in this regard.
- 73.0 The contractor shall ensure that no construction leachate (e.g. cement slurry etc.), is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including, reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line)

Protection of Existing Services & Buildings and Materials

- 74.0 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor, at his own expense, for which nothing is payable. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.
- 75.0 In case the existing services are to be shifted permanently, then before dismantling the existing services, alternate/diversion of service lines has to be laid by the contractor so that there is no interruption in use of existing services. The contractor has to plan the alternate suitable route for diversion/shifting of service lines and get the same approved from the Engineer-in-Charge before starting shifting of services. Nothing extra shall be paid except the payment of dismantling and laying of new service lines as per conditions of contract.

Preservation and conservation Measures

- 76.0 All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on project location during excavation/construction shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precaution to prevent his workmen or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal acquaint the Engineer-in-charge of such discovery and carry out the official instructions of Engineer-in-charge for dealing with the same, till then all work shall be carried out in a way so as not to disturb/ damage such article or thing.
- 77.0 Excavated earth shall be property of client and shall not be disposed off without approval of Engineer in charge. Any legal or financial implications resulting out of disposal of earth shall be sole responsibility of the contractor.
- 78.0 Certain existing trees, recently planted trees including tree guards and irrigation water supply piping system can be located nearby work site, hence, while taking up excavation activities, trees as well as their root zones be protected and the stacking of excavated earth shall be made in such a way that neither plants are buried nor damaged. The initial survey, demarcation of roads and various buildings have been made in the campus and pickets etc are fixed at locations which shall not be disturbed or damaged by vehicular movement or manual tampering, else the same shall be made good by the contractor at his own. In case of failure to comply with the above requirements the damage caused shall be made good at cost of contractor and the cost so incurred and assessed by Engineer-in-Charge shall be recovered from running account bill of contractor.
- 79.0 Deleted

Responsibility during Extreme Weather / Site Conditions

- 80.0 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 the further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account. Also, no claims for hindrance shall be entertained on this account.
- 81.0 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 not withstanding 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.
- 82.0 No payment shall be made for any damages caused by rain, snowfall, flood, earthquake, or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

Procurement of Materials, Stacking and Storage of Materials

- 83.0 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for. The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and approval of the same before use in the work.
- 84.0 All material required for the execution of the work shall be got approved, procured and deposited with the Departmental supervisory staff. The materials shall be kept in joint custody of the contractor and the Department. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained.
- 85.0 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost. The contractor shall be fully responsible for the safe custody of materials brought by him or issued to him even though the materials are under double lock key system. The contractor shall bear all incidental charges for cartage, storage, and safe custody of materials, if any issued by department.
- 86.0 The contractor shall take instructions from the Engineer-in-charge for stacking of materials. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services, and compound walls are to be constructed. 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.

Product delivery, storage and handling of chemicals

- 87.0 The contractor shall construct storage space for Chemical materials to ensure that the storage conditions are as recommended by the manufactures. All the materials shall be procured by the contractor directly from the manufacturer or the authorized dealers of the manufacturers and delivered in sealed containers with labels legible and intact. The original copies of challan/cash memos towards the quantity of various chemicals procured shall be made available by the contractor at the request from the Engineer-in- Charge and a copy of the same shall be kept in record. The contractor shall submit for the chemicals procured, manufacturer's and / or authorized dealer's certificate regarding supplying and verifying conformance to the material specifications, as specified.
- 88.0 The Name of manufacturers, manufacturer's product identification, manufacturer's mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container.
- 89.0 All the chemicals {polymers, epoxy, water proofing compound, plasticizer, Polysulphide, SBR based elastomeric, APP (Atactic Polypropylene Polymer), all exterior and interior paints, polish etc.) shall be procured in convenient packs say 20 liters/Kgs.} capacity packing only or as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200liter (Kgs.) drums unless otherwise specifically permitted by the Engineer-in-Charge. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the Engineer-in-charge.
- 90.0 Different containers of each chemical shall be serially numbered on packing and also consumed in that order. Day-to-Day account of receipt, issue and balance shall be regulated by the Department and proper account shall be maintained at site of work in the prescribed form as per the standard practice.
- 91.0 All filled containers shall be handled in safe manner and in a way to avoid breaking container seals. Empty containers of the chemicals should not be removed from site till the completion of work and shall be removed only with the approval of the Engineer-in-Charge.
- 92.0 All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor. Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipment's in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.
- 93.0 All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.

Setting Out and other Preliminaries

- 94.0 The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of buildings/ roads/ services in consultation with the Engineer -in-Charge & proceed further. Any discrepancy between architectural drawings and actual layout at site shall be brought to the notice of the Engineer -in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and centre lines, etc., Nothing extra shall be payable on this account.

- 95.0 The Contractor shall establish, maintain, and assume responsibility for grades, lines, levels, and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc. to the Engineer -in-Charge before commencing work. Commencement of work shall be regarded as the Contractor's acceptance of such grades, lines, levels, and dimensions and no claim shall be entertained later for any errors found.
- 96.0 If at any time, any error appears due to grades, lines, levels, and benchmarks during the progress of the work, the Contractor shall, at his own expense rectify such error, if so required, to the satisfaction of the Engineer -in-Charge. Nothing extra shall be payable on this account.
- 97.0 The approval by the Engineer-in-Charge, of the setting out by the Contractor, shall not relieve the Contractor of any of his responsibilities and obligation to rectify the errors/ defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.
- 98.0 The Contractor shall be entirely and exclusively responsible for the horizontal, vertical, and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer - in-Charge.
- 99.0 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.
- 100.0 The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work (including marking of reference points, centre lines of buildings), construction and maintenance of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, signage, labour safety, labour welfare and labour training measures, preparatory works, working during monsoon, working at all depths, height and location etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account.
- 101.0 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 based on any erroneous and or incomplete information. In case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawings relating to the relevant item, the former shall prevail unless otherwise given in writing by the Engineer-in-charge.
- 102.0 Contractor shall provide all the shop drawings or layout drawings for all the co-ordinated services before starting any work or placing any order for any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-charge prior to delivery of material at site.

Scaffolding and Staging

- 103.0 Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.
- 104.0 The contractor should submit the shop drawings of staging and shuttering for approval of Engineer-in-Charge before actually commencing the execution of work under the item. Nothing extra shall be payable on this account.

Tools and Plants

- 105.0 The contractor should have own/arrange construction equipment required for the proper and timely execution of the work. Nothing extra shall be paid on this account. No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account. Contractor has to deploy required Plant and machinery on the project. In case the contractor fails to deploy the plant and machinery whenever required and as per the direction of the Engineer-in-charge, he (Engineer-in-charge) shall be at a liberty to get the same deployed at the risk and cost of the contractor.
- 106.0 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot to achieve early completion. The agency to deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also, ancillary facilities shall be provided by contractor commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are always maintained in proper working conditions during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment, and machineries provided by the Contractor, on site of work or his workshop for this work, shall be exclusively used in the construction of this work and they shall not be shifted/ removed from site without the permission of the Engineer-in Charge.

Coordination with Other Agencies

- 107.0 The work should be planned in a systematic manner to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, firefighting & fire alarm system, information technology, communication & electronics, and any other services.

- 108.0 The contractor shall conduct work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed so as not to interfere with the operations of other contractors or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
- 109.0 Other agencies doing works related with this project may also simultaneously execute their works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary recesses, holes, openings, trenches etc. as may be required for laying/burying in the work, pipes cables, conduits, clamps, boxes, and hooks for fan clamps etc. as may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.
- 110.0 If during construction, it becomes necessary to remove or shift the stored materials shed workshop, access roads, etc, to facilitate execution of any other work by any other agency, the contractor shall carry out the removal of shifting as directed by the Engineer – in – charge and no claim whatsoever, shall be entertained on this account.
- 111.0 The Contractor shall cooperate with and provide the facilities to the associate Contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the Department (CPWD) against any claim(s) arising out of such disputes. The Contractor shall:
- a) Allow use of scaffolding, toilets, sheds etc.
 - b) Properly co-ordinate their work with the work of other Contractors.
 - c) Provide control lines and benchmarks to his associate Contractors and the other Contractors.
 - d) Provide electricity and water at mutually agreed rates.
 - e) Provide hoist and crane facilities for lifting material at mutually agreed rates.
 - f) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
 - g) Adjust work schedule and site activities in consultation with the Engineer-in- Charge and other Contractors to suit the overall schedule completion.
 - h) Resolve the disputes with other Contractors/ associate contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.

Engaging Specialized Agencies for Works

- 112.0 The Contractor shall engage specialized agencies having adequate technical capability and experience as stipulated in the contract document or as per direction of Engineer-in-charge of having executed similar items for specialized works and/or any other items of work where specialized firm is required to be engaged as per contract conditions.
- 113.0 The Specialized agency for the work shall be got approved from the Engineer in-Charge well before actual commencement of the item of work. The contractor shall apply to the Engineer-in-Charge in writing along with the credentials and relevant details including name of owner/company, its location, capacity technical establishment, past experience etc. The Engineer-in-Charge shall give approval in writing and the work shall not be started without said written approval of the Engineer-in-Charge. Even if, such specialized items of work shall be executed by the specialized agencies, the work shall be deemed to be executed by the tenderer for all purposes and the responsibility of the quality of items of works executed etc. shall continue to be that of the tenderer only.

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

Rates and Other Conditions for Payment

- 115.0 Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same.
- 116.0 Rates for the items are inclusive of all labour, materials, T&P, ladders, jhoolas, scaffolding, incidental charges, contractors' profit and overheads etc. unless, otherwise, specified. The contractors shall quote the rates accordingly).
- 117.0 The rates quoted by the tenderer shall be firm and inclusive of all taxes, labour cess and levies including GST. Taxes shall be deducted at source as per statutory orders and Govt. rules and regulation from bill payments to the contractor by Engineer-in-charge. The contractor shall quote his rates considering all such Taxes.
- 118.0 For completing the work in time, the contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the contractor with them.
- 119.0 The rates quoted by the Contractor are deemed to be inclusive of Site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, welfare & training measures, preparatory works, working during monsoon, working at all depths, height, lead, lift and location etc. until / unless specified otherwise, etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account. Payment for centering & shuttering, however, if required to be done for floor heights greater than 3.50 m shall be admissible at rates arrived in accordance with clause 12 of the agreement if not already specified.
- 120.0 The rates quoted by the Contractor are also deemed to be inclusive of Providing sunk flooring in bath-rooms, kitchen, etc.; any cement slurry added over base surface (or) for continuation of concreting for better bond; Performance test of the entire installation(s) before the work is finally accepted.
- 121.0 Nothing extra shall be payable to the contractor for compliance of various additional conditions, special conditions, general terms & conditions, additional /general specifications, etc. as prescribed in bid document except specifically stated therein, on and above the quoted rate(s) of various items of schedule of quantities (civil as well as electrical work) of the bid document.

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

Royalty

123.0 Contractor shall comply with all statutory rules and regulations w.r.t royalty and other levies and taxes. Royalty at the prevalent rates shall be paid by the contractor or his associate supplier as per Government rules, on all materials such as boulders, metals, earth, all sizes stone aggregates, brick aggregates, coarse and fine aggregates, moorum, river sand, gravels and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned. Further, contractor needs to submit proof of submission of full royalty to the state government or local authority. Nothing extra shall be payable on this account.

Foreign Exchange

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

125.0 The contractors have to quote the corresponding imported items in “Indian Rupees” in the Schedule of Quantities which shall include all incidental charges including freight, taxes including GST, import duties, fluctuations in currency rates. No extra payment will be made over and above the quoted rates.

Time and Progress Chart / Monthly Progress Report / Documentation / Project Review Meetings

126.0 Submission of **Time and Progress Chart** (2 Hard copies and Soft copy also) for each mile stone for Civil as well E&M to the Engineer in-charge for approval and **Monthly progress report** (2 Hard copies and Soft copy also) for Civil as well E&M using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during previous month to the Engineer in-charge on or before 5th day of each month by the Contractor as stipulated in clause 5 of GCC 2023 (Construction Works) is mandatory and non-submission of the same by the contractor/delay in submission of Construction Programme even after notice by the Engineer-in-Charge within 7(seven) days will constitute a material breach of Contract by the Contractor, for which the Contractor shall be liable to pay such amount as mentioned in the contract document elsewhere. In addition to all such penal actions, Engineer-in-Charge may also initiate action under Clause 3 of GCC 2023 (Construction Works) or any other actions under provisions of Contract.

127.0 Also, it is a term of the Contract that the Contractor shall submit all issues, pending drawings, decisions, claims, whatsoever, with this Progress Chart each month (in addition to any such issues the Contractor submitted through letters in the preceding months), failing which it will be considered that Contractor has no such pending issues/claims. For avoidance of doubt, it is a term of the Contract that mere such submissions/intimations of the issues/claims by the Contractor or silence thereto such claims/issues by the Department shall not mean that the Claims/issues are admitted by the Department and all such claims/issues shall be considered separately by the competent authority of the department on merit as per terms of the Contract.

128.0 The Time and Progress chart should include the following: -

- a) Descriptive note explaining sequence of various activities.
- b) BAR CHARTS prepared in mutually agreed software or in other format decided by Engineer-in-charge which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
- c) Program for procurement of materials by the contractor.
- d) Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.
- e) Program of procurement of machinery / equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
- f) shuttering schedule to complete the structure work within the laid down physical milestones.
- g) Programme for achieving milestones.

129.0 If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.

130.0 The monthly progress report shall contain the following:

- i) Construction schedule of the various components of the work through a bar chart for the next month (or as may be specified), showing targeted tasks (including material and labour requirement) and up to date progress.
- ii) Progress chart of the various components of the work that were planned and achieved, for the month as well as cumulative up to the month under reckoning, with reason for deviations, if any in a tabular format
- iii) Plant and machinery statement, indicating those deployed in the work.
- iv) Man-power statement indicating Individually the names of all the staff deployed on the work, along with their designations.
- vi) No. of skilled workers (trade wise) and total no. of unskilled workers deployed on the work and their location of deployment i.e., blocks.
- vii) financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of cheque payment received, extra/substituted/deviation items if any, etc.
- viii) Few photos of the month's activities.

- 131.0 The submission for approval by the Engineer-in-charge of such programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-charge to take action against the contractor as per terms and conditions of the agreement.
- 132.0 **Documentation** - The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However, cost of photographs, slides, audio/videography etc shall be borne by the department.
- 133.0 **Project Review Meetings** - The Contractor shall inform in writing within 7 days of award of work to the Engineer-in-Charge of Major & Minor Component the names of the Key Personnel who are authorized person for this Contract and who will attend the Review Meetings to be taken by Senior Officers of CPWD. Review meetings shall be held regularly and shall be attended by such Key Personnel without fail. Failure to submit such names within 7 days or even after a notice by the Engineer-in-Charge within further 7 (seven) days shall render the Contractor to pay a sum of Rs. 1000/- for each day delay.

Inspection of Works

- 134.0 In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by senior officers of CPWD, Architects and other officials of User / Owner Department, Local authorities and other Govt. authorities apart from the Engineer-in-charge and his authorized representative. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.
- 135.0 In addition to the supervision of work by CPWD engineers, the officials deployed by the User / Owner Department, Local authorities and other Govt. authorities shall also be carrying out regular and periodic inspection of the ongoing activities in the work at any time with or without prior intimation and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by CPWD engineers to the contractor. Upon receipt of instructions from Engineer-in-Charge these are also to be made good by necessary improvement, rectification, replacement up to his complete satisfaction. The contractor shall, therefore, keep updated the following requirements and detailing.
- (i) Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.
 - (ii) Entrance and area surrounding to be kept cleaned.
 - (iii) Display layout plan key plan, building drawings including plans, elevations, and sections.
 - (iv) Up to date displays of Bar chart, CPM and PERT etc.
 - (v) Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
 - (vi) Keep plastic / cloth mounted one sets of building drawings.
 - (vii) Set of Helmets and safety shoes for exclusive use for officers/dignitaries visiting at site.

136.0 Deleted

Material and Quality Assurance Plan

- 137.0 The foremost responsibility to maintain the quality of works lies with the contractor. If the contractor is quality conscious, then the quality of work can be easily ensured. As men, (workers and technical supervisors) materials, financial resources and methods required in a work are arranged by the contractor, quality is largely dependent upon its implementation by the contractor.
- 138.0 The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship, and correct construction methodologies to be adopted. Contractor shall submit minimum “Quality Assurance Plan” within 20 days after award of work.
- 139.0 The Quality assurance plan should indicate the role of Contractor’s organization including responsibilities of engineers to be deployed by contractor as per contract document.
The QA plan shall consist of lot size & number of required tests and frequency of testing. While deciding these criteria, CPWD Specifications & Provisions of BIS Code and Standard Practices may be referred. In case there is any discrepancy in frequency of testing as given in the list of mandatory tests and that in the individual sub-head of work as per CPWD specification 2019 Vol. 1 & 2 the higher of the two frequencies of testing shall be adopted. Volume of work, Practical Difficulties and Site Conditions etc. may also be kept in view. The lot size, number of tests and frequencies of testing can be altered or modified by the Engineer-in-charge from the prescribed limits.
Plan for calibration and certification of various testing equipment and plants & machinery shall be provided in QAP.
The quality assurance plan / programme should include as per requirement, method statement for various items of work to be executed along with checklists to enforce quality control. It should also include for examination of various items of building construction works like Reinforcement, CC/ Concrete for raft, columns / beams/ slabs, water supply lines, brickwork, plastering etc to enforce quality control.
- 140.0 QA plan should also clearly indicate the Machinery and other Tool & Plants required to be deployed at site by the Contractor. Entire Machinery and T&P may not be required at the start of work, therefore, a proper time schedule by which each Machinery & T&P is to be brought at site should also be indicated.
- 141.0 QA plan should also indicate system of Receipt of Material, testing of the same & Maintenance of Register of Tests.
- 142.0 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 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.
- 143.0 The day-to-day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the Jr. Engineer/Assistant Engineer -in-Charge of work and which shall be duly signed by the contractor or his authorised representative.
- 144.0 The contractor shall submit shop drawings of staging and shuttering arrangement, Aluminium & Glazing work, Plumbing work and other works as desired by Engineer in Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer-in- charge before execution.

- 145.0 The agency shall submit manufacturer's test reports of materials other than CPWD Specification on demand by Engineer-in-charge along with original cash vouchers.
- 146.0 The quality of work is of paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work.

Test Laboratories

- 147.0 **Laboratory at site:** The contractor shall establish a testing lab at site within one month after issue of letter of commencement and provide an adequate numbers/ quantity the necessary testing equipment and consumable materials required for the field tests mentioned in the list of mandatory tests given in CPWD specifications 2019 Vol.1 & 2. Nothing extra shall be payable to him on this account. In case of delay in establishment of Lab at site, a non-refundable recovery of Rs. 1000/-per day shall be made from Running account bill of the contractor for each delayed day. The representatives of the department shall be at liberty to inspect the testing facilities at site and conduct testing at random in consultation with Engineer in charge. The contractor shall provide all necessary facilities for the purpose.
- 148.0 **Other Laboratories:** The contractor shall arrange carrying out all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge. ***All expenditure to be incurred for testing of samples e.g., packaging, sealing, transportation, loading unloading etc including testing charges shall be borne by the contractor.*** The necessary tests shall be got conducted in the lab of Govt. Laboratory/ Govt. colleges/ IITs / NIT or from the laboratory approved by the competent authority.

The sample(s) of carrying out all or part of the tests shall be collected by the Engineer-in-charge or on behalf of officer-in-charge of the quality assurance wing of CPWD for sending quality assessment / control test to CPWD approved or reputed testing laboratories and the results will be binding on the contractor. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding of the contractor.

All expenditure to be incurred for testing of samples e.g., packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.

Regarding testing of electrical materials, testing shall be conducted in Govt. Laboratory/ Govt. colleges/ IITs / NIT or from the laboratory approved by the competent authority. The charges of testing of materials in approved laboratory shall be borne by the agency.

- 149.0 **Sampling of Materials:** All samples of materials including Cement Concrete Cubes shall be taken by the QA engineers deployed by the Contractor and shall be witnessed by the Engineer-in Charge or his authorized representatives as specified in NIT. All the necessary assistance, facilities and safety shall be provided by the contractor. Cost of sample of materials and testing charges shall be borne by the contractor and he/she is responsible for safe custody of samples to be tested at site.

150.0 Materials to be used in the work shall be as per list of approved makes mentioned in the contract document whose sample(s) are approved by the Engineer-in-Charge. Articles bearing BIS certification mark shall be used in case items / articles are not in list of approved makes mentioned in the contract document or are not available in the market as per list of approved makes mentioned in the contract document. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS mark for the material. The quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. Sample of other building materials, fittings and articles including those of reputed manufacturer required for execution of work shall be got approved from the Engineer-in-Charge.

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

All samples of materials to be used in the work shall be got approved from Engineer-in-charge well in advance of actual execution and shall be preserved till the completion of the work.

151.0 The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work. 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. Any material/fitting whose sample has not been approved and any other unapproved material brought by the contractor shall be immediately removed as soon as directed. Any sub-standard material/work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-Charge. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use. The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

Maintenance of Test Registers / Material Registers at Site:

152.0 All the register of tests to be carried out at construction site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer in-Charge in the same manner as being issued to CPWD field staff. All the entries in the register will be made by the designated engineering staff of the contractor and same should be regularly reviewed by JE/AE/EE.

The test registers to be issued to the contractor are:

- a) Materials at site account register.
- b) Cement register.
- c) Master test register.
- d) Cube test register.
- e) Paint register.
- f) Drawing register.
- g) Any other register as issued by Engineer-in-charge.

- 153.0 Contractor shall be responsible for safe custody of all the test registers. Submission of copy of all test registers, material at site register along with each alternate running account bill and final bill shall be mandatory.
- 154.0 All Material received at site shall be entered in MAS Register and copy of supply order, MTC and bill-invoice shall be maintained in order. The MAS registers shall be maintained by a qualified staff of agency which may be inspected by Engineer- in- charge or his/her designee at any time. The daily report of receipt of material shall be sent to Engineer-in- charge or his/her designee.
- 155.0 All the registers of tests carried out at Construction site or in outside laboratories shall be maintained by the agency. Which may be inspected by Engineer-in- charge of his/her designee at any point of time.
- 156.0 The day-to-day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorised representative and which shall be duly signed by. Jr. Engineer/Assistant Engineer -in- Charge of work.
- 157.0 Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable. Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

3rd Party Quality Assurance

- 158.0 In order to achieve high standards of materials, workmanship and overall quality of the execution, CPWD may have in-house team or deploy external agency as Third-Party Quality Assurance agency (TPQA). If engaged, the contractor shall allow access to Third Party Quality Assurance agency (TPQA) which will carry out the checks on the quality assurance procedures followed at site, take samples of the materials for independent testing and check the workmanship of the works carried out. At least 25% of Samples of materials including Cement Concrete Cubes shall be taken jointly by contractor and TPQA / Engineer-in-charge or his authorized representative. All arrangements for transporting and getting them tested shall be made by the contractor.
- 159.0 The Contractor shall extend full co-operation to the TPQA in facilitating the inspections and collection of samples and regulate the execution stages with regards to the hold and witness points which shall be strictly adhered to by the contractor. The next stage work shall not be undertaken at the hold point stage and work shall be done in presence of the TPQA representative at the witness stage. The contractor shall be required to co-operate with TPQA in carrying out various activities including documentation at no extra time and cost to the owner. In case of any adverse findings by the TPQA, the contractor shall do the needful rectifications to the entire satisfaction of the TPQA and CPWD. If contractor fails to rectify the defects of the serious nature within a reasonable time frame no further payment shall be made.
- 160.0 If work is stopped due to non- rectification of defects and delay occurs on this account, no relief in completion of mile stone by way of grant of EOT or any other relaxation be given.
- 161.0 **Site Office facilitation**
1. Scope of work includes construction/providing of “All Weather” Project Site Office (semi-permanent structure) with modern outlook for use by Engineer-in-charge and his staff consisting

of One room of size not less than 120 sq ft, with 1 toilets having separate WC and urinal. The location and plan shall be got approved from Engineer-in-Charge. Specification for the site office shall be suitable and matching for running an office which shall be got approved from Engineer-in-charge. The Contractor shall provide a typical plan of site office (having light fixtures, wiring & AC etc.) with specification within 15 days of award of work and shall construct within 45 days of approval accorded by Engineer-in-Charge. The required number of light points (including plug points) with fittings, ceiling fan/ exhaust fans, Furniture etc., shall have to be provided as per requirement of Engineer in charge during the period of construction. Nothing extra shall be paid on this account.

2. All running costs and charges including Electricity, water supply, R.O./ Safe Drinking water, Internet etc., shall be provided by the Contractor. The above services/ facilities shall be provided by the Contractor till the actual date of completion of work plus six months. Maintenance of the site office will be the responsibility of the Contractor. Nothing extra shall be paid on this account.
3. The Contractor shall provide the following furniture (new) of preferably Godrej or equivalent make for use of CPWD staff at Project/site Office.

S.N.	Articles	Quantity
1.	Office Tables	2 Nos.
2.	Executive Chairs (High back)	2 Nos.
3.	Office visitor Chairs	6 Nos.
4.	Steel Almirahs	2 Nos.

Miscellaneous

- 162.0 **Sample Room / Toilet:** One sample room and one sample toilet within the proposed building, complete in all shape shall be prepared by the contractor and got approved from respective Engineer-in-charge in writing. The contractor shall be allowed to proceed with further finishing work only after getting the sample room and toilet, as applicable, 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.
- 163.0 During actual execution of item(s) at site, due to change/ updation of product specification(s) by manufacturers, there may be minor variation in manufacturer's specifications viz-a-viz specification mentioned in item(s) in Schedule of Quantity (civil well as electrical work). Such variations shall be allowed with prior permission of Engineer-in-charge for execution of work at site and nothing extra shall be payable to the contractor on this account. The decision of Engineer-in-charge in this matter shall be final and binding on contractor.
- 164.0 Those items which are to be executed under the scope of this NIT and for which CPWD specifications are not available, such items shall be executed in compliance with the specifications mentioned separately in this document and/or as per relevant IS codes, International Standards etc. as applicable.

CORRECTION SLIPS IN GCC-2023

Central Public Works Department

Office Memorandum

No. DG/CON/Construction 2023/03

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated 06.12.2023

Subject: Modifications in Clause 12 and Schedule F for Clause 12 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 Construction Works.

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xv) (xvi) No provision (xvii) No provision	CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xv) No change (xvi) Extra items are those items which are not available in the contract. a. Non Schedule Extra Items are those items which are not available in the Standard Schedule of Rates specified in Schedule F. b. Scheduled Extra Items are those items which are available in the Standard Schedule of Rates specified in Schedule F. (xvii) Completion cost: The completion cost includes gross amount of work done, amount of extra items and deviations and escalation admissible as per agreement etc.
Clause 12 Deviations/ Variations Extent and Pricing The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the	Clause 12 Deviations/ Variations Extent and Pricing No Change

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progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.	
The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration should not exceed 1.25 times of Tendered amount. Any further deviation beyond this limit upto 1.5 times of tendered amount shall be approved by the authority mentioned in schedule 'F' with recorded reason and in exceptional case, ADG shall have full power to approve the deviation beyond 1.50 times of tendered amount with recorded reason and take suitable corrective action.	Deleted
No provision	The completion cost shall, in no case, exceed 1.5 times the contract amount. Contractor will devise a system to keep a watch on quantum of work taken up vis-a-vis balance items required to complete defined scope of work and will give the alerts to Engineer-in-Charge before taking up extra items, deviations so that completion cost does not exceed above limit. Work executed beyond above limit will neither be recorded nor be paid.


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	Engineer-in-Charge will verify and confirm the alerts before assigning deviations and / or extra items to the contractor. If additional work(s) is required to complete defined scope of work beyond above limit then Engineer-in Charge may take up such work(s) separately. The contractor will not have any claims whatsoever on this account.
12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows : i. In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus ii. 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge	12.1 The time for completion of the works shall, in the event of any deviations and extra items resulting in additional cost over the contract amount will be extended, if requested by the contractor, as follows : i. In the proportion to the additional cost of work, bears to the original contract amount plus ii. 25% of the time calculated in (i) above.
12.2 Deviation, Extra Items and Pricing In the case of extra item(s) (items which are not available in the contract), the contractor may within fifteen days of the receipt of order or occurrence of the item(s), submit claim for market rate(s), supported with proper analysis of rate and manufacturer's specification for the work, invoices, vouchers, etc. (as applicable), failing which the rate(s) approved later by the Engineer-in-Charge shall be final and binding. Where the contractor submits claim for market rate(s) in the manner prescribed above, the Engineer-in-Charge shall, within 45 days of the receipt of the claims, after giving consideration to the analysis of	12.2 Deviation, Extra Items and Pricing a) Non Schedule Extra Items - The contractor may, within fifteen days of the receipt of order to execute extra item or occurrence of the item(s), submit analysis of rate of extra item(s) based on the rates of materials available in basic rate of Standard Schedule of Rate mentioned in schedule F and market rates of the materials which are not available in standard schedule of rate mentioned in schedule F. For this purpose, the basic rate of materials available in Schedule of Rates mentioned in Schedule F will be enhanced or reduced by the applicable cost index, as the case


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rates and other documents submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

may be.

The rates of the materials which are not available in Standard Schedule of Rates, mentioned in Schedule F, shall be based on, tax paid bills for the material as defined in manufacturer's specification.

Material rates from Standard Schedules of Rates shall be given priority in the analysis of rates.

The rate of extra item will be:-

- i. Analyzed rates as above multiplied by (tender amount divided by estimated cost put to tender), if tendered amount is below the estimated amount put to tender.
- ii. Analyzed rate, if the tendered amount is above the estimated amount put to tender.

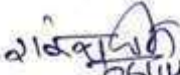
Failing which the rate(s) approved later by the Engineer-in-Charge shall be final and binding.

Where the contractor submits **analysis of rate of extra items** in the manner prescribed above, the Engineer-in-Charge shall, within 60 days of the receipt of the **analysis of rate**, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rate(s) of **extra items**. The contractor shall be paid in accordance with the rates so determined.

However provisional rates on the basis of invoice will be allowed by the Engineer-in-Charge. Invoice shall be accepted only for materials not available in the Standard Schedule of Rates mentioned in Schedule F. The extra items rate shall be finalized only after submission of tax paid bills by


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	the contractor to the Engineer-in-Charge as required above. The Engineer-in-Charge may apply the discount available in the market on the rate of materials taken from tax paid bills.
(b) No Provision	b) Scheduled Extra Items i. For percentage rate tenders, the extra item(s) shall be paid as per the Standard Schedule of Rates, mentioned in Schedule F, enhanced or reduced by the applicable cost index and further enhanced or reduced by percentage above/ below quoted by the contractor on estimated cost put to tender. ii. For item rate tenders, the extra item(s) shall be paid as per the said schedule rate enhanced or reduced by the applicable cost index and multiplied by (tender amount divided by estimated cost put to tender).
The rate(s) of extra items so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable.	Deleted


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Deviation, deviated quantities, Pricing In the case of contract items which exceed the limit laid down in Schedule F, the contractor may within fifteen days of the receipt of order or occurrence of the excess, claim revision of the rates, supported with proper analysis of rate and invoices, vouchers, etc. (as applicable), for the quantity in excess of the above-mentioned limit. The Engineer-in-Charge shall within 45 days of receipt of the claims, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. The rate(s) so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable.	c) Deviation, deviated quantities, Pricing In the case of contract items which exceed the limit laid down in Schedule F, the contractor may within fifteen days of the receipt of order or occurrence of the excess, claim revision of the rates, supported with proper analysis of rates and other documents, as per procedure described in para 12.2(a) or 12.2(b) (as applicable), for the quantities in excess of the above-mentioned limit. The Engineer-in-Charge shall within 45 60 days of receipt of the claims, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rates and the contractor shall be paid in accordance with the rates so determined. In case, the contractor fails to submit his claim for revision of rates within 15 days of the receipt of order or occurrence of the excess, the Engineer-in-Charge shall determine the rate(s) of such items in accordance with para 12.2 (a) and 12.2 (b) without giving any notice to the contractor. The rates so determined by the Engineer-in-Charge shall be final and binding. The rate(s) of extra items and deviated items so determined by the Engineer-in-Charge shall be final and binding on the contractor.
12.3 In the case of contract items which exceed the limit laid down in Schedule F, the Engineer-in-Charge shall after giving notice to the contractor within 30 days of submission of that bill by the contractor which contains such item(s), and after taking into consideration any reply received from the contractor within 15 days of the issue of such notice, reduce the rate for quantity in excess of the above-mentioned limit on the basis of market rates, within 30 days of the expiry	Deleted

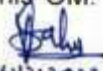

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of the said period of 15 days, and the contractor shall be paid in accordance with the rates so determined. The rate(s) so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable	
12.4 The cost of any operation necessarily admissible for such operations.	12.3 The cost of any operation necessarily admissible for such operations.
12.4 No provision	12.4 Cost index Latest available Cost index at the time of beginning of execution of extra item and deviation shall be used in sub-clauses 12.2 (a), 12.2 (b) and 12.2 (c) for calculation of rates of extra items.
12.5 No provision	12.5 Labour rates Labour rates will be based on latest available circulars issued by Central Govt. or State Govt. whichever are higher as well as applicable for the work.
PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 12 Authority to decide deviation upto 1.5 time of tendered amount	PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 12 Deleted
12.2 & 12.3 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	12.2 (c) Deviation Limit beyond which clauses 12.2 (c) shall apply for building work


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12.4 (i) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items) (ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items) (ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items
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This OM is applicable for all NITs issued w.e.f. date of issue of this OM.
This issues with the approval of DG CPWD.


06.12.2023
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/Construction/2023 e-file no 9163323
All CPWD and PWD officers for information and necessary action.
(Through CPWD website.


06/12/2023
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केन्द्रीय लोक निर्माण विभाग

कार्यालय ज्ञापन

No. DG/CON/Construction 2023/04

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated: 08.12.2023

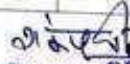
Subject: Modifications in Conditions of Contract, Clause 5 and schedule F in clause 5 of GCC 2023 Construction Works

The following amendments are made in the GCC 2023 for Construction works.

Existing Provision	Modified Provision
CONDITIONS OF CONTRACT	CONDITIONS OF CONTRACT
Definitions	Definitions
2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:-	2. No change:-
(i) to (xvii)	(i) to (xvii) No Change
(xviii) No provision	(xviii) Concurrent delay: Concurrent delays are those delays occurring in the work concurrently in any combination or combination of all delay fall under different sub clauses 5.2, 5.3 and 5.5.
Clause 5 Time and Extension for Delay	Clause 5 Time and Extension for Delay
The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the work shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer in Charge and shall be absolutely at the disposal of the Government without prejudice to any other right or remedy available in law.	The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the work shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid and such default continues even after time period specified in the notice in writing by the Engineer-in-Charge then the performance guarantee shall be forfeited by the Engineer-in-Charge and shall be absolutely at the disposal of the Government without prejudice to

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	any other right or remedy available in law. The contract shall stand determined when such decision of forfeiture of the performance guarantee is issued to the contractor.
5.1 As soon as possible but within 7 (seven) working days of award of work and in consideration of	5.1 The contractor as soon as possible but within 7 (seven) days of issue of letter of award of work shall submit a time and progress chart to the Engineer-in-Charge. Such chart shall be made in due consideration of
a. Schedule of handing over of site as specified in the Schedule 'F' b. Schedule of issue of designs as specified in the Schedule 'F',	a. Schedule of handing over of site as specified in the Schedule 'F' b. Schedule of issue of design(s) and drawing(s) as specified in the Schedule 'F',
i. the Contractor shall submit a Time and Progress Chart for each mile stone. The Engineer-in-Charge may within 7 (seven) working days thereafter, if required modify, and communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents. ii. In case of non-submission of construction programme by the contractor, the program approved by the Engineer-in-Charge shall be deemed to be final.	i. The Contractor shall submit a Time and Progress Chart for each milestone. The Engineer-in-Charge may within 7 (seven) days of receipt of such chart, make modifications thereafter, if any, and communicate the approved chart to the contractor, failing which the chart submitted by the contractor shall be deemed to be approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents. ii. In case of non-submission of time and progress chart by the contractor, the chart prepared by the Engineer-in-Charge shall be deemed to be final.


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iii. The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract. iv. The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery as per Schedule F to be decided by the NIT approving authority shall be made on per week or part basis in case of delay in submission of the monthly progress report v. No provision	iii. The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract. iv. The contractor shall submit the Time and Progress Chart containing upto date progress of work using the mutually agreed software or in the format decided by Engineer-in-Charge. Such chart shall be submitted by the contractor on or before 5th day of each month failing which a recovery as mentioned in Schedule 'F' shall be made at the earliest from running account bill without any notice in this regard. v. While recording the hindrances in the progress of the work, due consideration should be given to the cause of hindrance. The hindrances shall be segregated in following categories : a) delays due to reasons beyond the control of both parties (sub-clause 5.2) b) delays attributable to the Department and concurrent delays (sub-clause 5.3). c) delays solely attributable to the contractor (sub-clause 5.5)
5.2 If the work(s) be delayed by:- i. force majeure, or ii. abnormally bad weather, or iii. serious loss or damage by fire, or iv. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or v. delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in	5.2 Delays due to reasons beyond the control of both parties: If the work(s) delayed by:- i. force majeure, or ii. abnormally bad weather, or iii. serious loss or damage by fire, or iv. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or v. delay on the part of other contractors or tradesmen engaged by Engineer-in- Charge in

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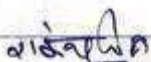
executing work not forming part of the Contract, or vi. any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control	executing work not forming part of the Contract, or vi. any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control.
Then upon the happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.	Then upon the happening of any such event causing delay, the contractor shall within 03 (three) days give online notice thereof through ERP Portal to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the work(s). The contractor shall have no claim on account of any hindrance in case notice(s) are not given by the contractor through ERP portal. The Engineer-in-Charge, on receipt of such notice(s) after considering the factual ground situation, shall either acknowledge or reject the notice(s) In case of rejection, the reason(s) for rejection shall be communicated by Engineer-in-Charge to the agency. The decision of Engineer-in-Charge with regard to nature of event causing delay, its start date and end date, as has been finalized during acknowledgement of notice, shall be final and binding. The end date of such events shall be recorded by Engineer-in-Charge either during acknowledgment of notice or subsequent to acknowledgement if end date of hindrance is after the date of acknowledgement of notice. In absence of notice by the contractor, Engineer-in-Charge or his representative(s) may record the events causing delay within 05 (five)

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	days of occurrence of hindrance on ERP portal provided further that not recording of events causing delay by the Engineer-in-Charge does not ipso facto entitle the contractor for any hindrance.
The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 5.2.	No change.
5.3 In case the work is hindered in the opinion of the contractor, by the Department or for any reason / event, for which the Department is responsible, the authority as indicated in Schedule 'F' shall, if justified, give a fair and reasonable extension of time and reschedule the mile stones for completion of work.	5.3 Delays attributable to the department In case the work is hindered, in the opinion of the contractor, by the Department or for any reason / event, for which the Department is responsible, then upon the happening of such event causing delay, the Contractor shall within 3 (three) days give online notice there of through ERP Portal to the Engineer-in-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the work. The contractor shall not be entitled for any hindrance in case notice(s) are not given by the contractor through ERP portal. The Engineer-in-Charge, on receipt of such notice(s) after considering the factual ground situation, shall either acknowledge or reject the notice(s). In case of rejection, the reason(s) for rejection shall be communicated by Engineer-in-Charge to the agency. The decision of Engineer-in-Charge with regard to nature of event causing delay, its start date and end date, as has been finalized during acknowledgement of notice, shall be final and binding.


 R.K. JAIN
 (EE (Contact))

	The end date of such events shall be recorded by Engineer-in-Charge either during acknowledgment of notice or subsequent to acknowledgement if end date of hindrance is after the date of acknowledgement of notice. In absence of notice by the contractor, Engineer-in-Charge or his representative(s) may record the events causing delay within 05 (five) days of occurrence of hindrance on ERP portal provided further that not recording of events causing delay by the Engineer-in-Charge does not ipso facto entitle the contractor for any hindrance.
Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law, provided further that for concurrent delays under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2 the contractor shall be entitled to only extension of time and no damages.	Such extension of time or rescheduling of milestone(s) shall be without prejudice to any other right or remedy of the parties in contract or in law, provided further that for concurrent delay(s) under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2, the contractor shall be entitled to only extension of time and shall have no claim of damages.
5.4 Request for rescheduling of Mile stones or extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed forms i.e. Form of application by the contractor for seeking rescheduling of milestones or Form of application by the contractor for seeking extension of time (Appendix - XVI) respectively to the authority as indicated in Schedule 'F'. The Contractor shall indicate in such a request the period by which rescheduling of milestone/s or extension of time is desired. With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of contract, the contractor shall produce a revised programme without causing any delay in execution	5.4 Rescheduling of milestone(s) and 'extended date of completion' The request for rescheduling of Milestone(s) and extension of time, shall be made by the Contractor through ERP Portal once in a month on the basis of hindrances accepted by Engineer-in-Charge under sub-clause 5.2 and sub-clause 5.3. The Contractor shall indicate in such a request number of days by which rescheduling of milestone(s) and/or extension of time is desired. Deleted


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 (EE (Contact))

of the work. A recovery as specified in Schedule 'F' shall be made on per day basis in case of delay in submission of the revised programme.

No provision

The authority as indicated in Schedule 'F', after examining the request, shall give a fair and reasonable extension of time for completion of work and simultaneously reschedule the milestone(s), if required so. The authority shall consider all the hindrances accepted as per sub-clauses 5.2, 5.3 and 5.5.

The authority shall decide rescheduling of milestone(s) and extension of time within 21 (Twenty One) days of the request submitted by the contractor through ERP portal. In event of no request by the contractor for rescheduling of milestone(s) and extension of time, the authority as indicated in Schedule F, after affording opportunity to the contractor, may give fair and reasonable extension of time based on hindrances accepted by Engineer-in-Charge and reschedule the milestone(s) once in a month. Such justified extension of time shall determine the 'extended date' of completion of work.

5.4.1 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time for completion of work or reschedule the mile stones.

5.4.1 Provided that the end date of any event causing delay shall not fall beyond the date of request for extension of time or rescheduling of milestone(s) by the contractor. In case end date of event falls beyond the date of submission of said request, then period for extension up to date of application shall be considered in the said request for events eligible for consideration and remaining period shall be applied in subsequent request of extension of time or rescheduling of milestone(s).

E-in-C shall finalize/ reschedule a particular mile stone before taking an

Engineer-in-Charge shall finalize/ reschedule a particular mile stone

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action against subsequent mile stone. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 21 days of the date of receipt of such request from the Contractor in prescribed form. In event of non-application by the contractor for extension of time E-in-After affording opportunity to the contractor, may give, supported with a programme (as specified under 5.4 above), a fair and reasonable extension within a reasonable period of occurrence of the event.	before taking an action against subsequent mile stone. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in 'Schedule 'F' in writing, within 21 (twenty one) days of the date of receipt of such request from the Contractor on ERP Portal.
5.5 In case the work is delayed by any reasons, in the opinion of the Engineer- in-Charge, by the contractor for reasons beyond the events mentioned in clause 5.2 or clause 5.3 or clause 5.4 and beyond the justified extended date, without prejudice to right to take action under Clause 3, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time.	5.5 Delays attributable solely to the contractor In case the work is delayed by reasons solely attributable to the contractor, then Engineer-in-Charge or his representative(s) may record the event causing delay within 05 (five) days of occurrence of delay in the ERP portal. Contractor shall take the notice of the same for necessary action. He may submit his version, if any within 05 (Five) days. Engineer-in-Charge, considering the version of the contractor, will take decision on such recording of the event and the decision of the Engineer-in-Charge shall be final and binding. The contractor shall be liable for levy of compensation for such delays (i.e. for the period beyond the justified extended date of completion as determined in sub clause 5.4 and this default of contractor shall be dealt in conjunction with clause 2 of the contract. In case the work is delayed, due to hindrances attributable solely to the contractor, beyond the justified extended date (as stated in sub clause 5.4), the authority indicated in Schedule 'F', without prejudice to provisions to take action under Clause 3, may grant extension of

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(EE (Contact))

	time required for completion of work without rescheduling of milestone(s) and extend the date of completion.
PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 5 Authority to decide: i. Extension of time (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be) ii. Rescheduling of mile stones (Superintending Engineer/ PM/CPM in Charge or Superintending Engineer/ PM/CPM in Charge of Major Component in case of Composite Contracts, as the case may be) iii. Shifting of date of start in case of delay in handing over of site (Superintending Engineer/ PM/CPM in Charge or Superintending Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)	PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect. & Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 5 i. Authority to convey the decision of shifting of milestone and extension of time (Engineer-in-Charge or Engineer-in-Charge of Major Component in case of Composite Contracts, as the case may be) ii. Authority to decide rescheduling of milestone and extension of time (SE/SE&PD/CE/CE&ED). iii. Shifting of date of start in case of delay in handing over of site (SE/SE&PD/CE/CE&ED).

This OM is applicable for all NITs uploaded after date of issue of this OM.

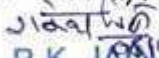
This is issued with the approval of DG CPWD.


 08.12.2023
 (वी. पी. साहू)

अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2023/ Construction e-file 9161772

के.लो.नि.वि. तथा लो.नि.वि. दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु (के.लो.नि.वि.वेबसाईट के माध्यम से)।


 R.K. JAIN
 (Contact)

**केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन**

No. DG/CON/Construction 2023/05

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 08.02.2024

**Subject: Modifications in Conditions of Contract and Clause 19 of GCC 2023
for Construction Works**

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xviii) (xix) No provision (xx) No provision	CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xviii) No change (xix) Adolescent Person: A person who has completed his/her fourteenth year of age but has not completed his eighteenth year. (xx) Hazardous works: Hazardous process/works are the works as defined in the clause (cb) of the Factory Act, 1948.
Clause 19 Labour Laws to be complied by the Contractor The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971. The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion. The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.	Clause 19 Labour Laws to be complied by the Contractor No change No change No change

The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986. The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996. Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.	The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986, amended by Amendment Act No. 35 of 2016 and thereafter time to time. No change No change
Clause 19A No labour below the age of eighteen years shall be employed on the work.	Clause 19A No person below the age of fourteen years shall be employed on the work. However Adolescent Persons can be employed on non-hazardous works/process.
C.P.W.D. Contractor's Labour Regulations 2. DEFINITIONS i. (c) Who is an out worker, that is to say, person to whom any article or materials are premises under the control and management of the principal employer. No person below the age of 18 years shall be employed to act as a workman.	C.P.W.D. Contractor's Labour Regulations 2. DEFINITIONS i. (c) No change. No person below the age of fourteen years shall be employed on the work. However Adolescent Persons can be employed on non-hazardous works/process.

This issues with the approval of DG CPWD.

08.02.2024
(वी. पी. साहू)

अधीक्षण अभियंता (सी. एंड एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9169019

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)

Central Public Works Department

Office Memorandum

No. DG/CON/Construction 2023/06

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD 01.03.2024

NIRMAN BHAWAN, NEW DELHI

Dated: 29.02.2024

Subject: Modifications in Conditions of Contract, Clause 19 and 20 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 9. Signing of Contract:- The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:- (i) to (iii) No Provision	CONDITIONS OF CONTRACT Definitions 9. Signing of Contract:- The successful tenderer, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:- (i) to (iii) No change In the event of successful tenderer being a firm/company, then the agreement shall be signed by all the partners or directors thereof individually. In the event of the absence of any partner/director, it shall be signed on his behalf by a person holding a power of attorney (duly notarized by notary public or board resolution in case of company) authorizing him to do so.
Clause 19 B Payment of Wages (i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.	Clause 19 B Payment of Wages (i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971 and Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) amended time to time.

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R.K. JAIN
(EE (Contract))

(v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.	Thus higher of the wages either notified by Govt. of India, Ministry of Labour and/or that notified by the local administration of the State Govt. both relevant to the place of work and the period of reckoning shall be paid by the contractor to the labourer . (v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) and or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
Clause 20 Minimum Wages Act to be Complied With The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.	Clause 20 Minimum Wages Act to be Complied With The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.

This issues with the approval of DG CPWD.

[Signature] 01.03.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023 e-file no. 9163323

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)

[Signature]
R.K. JAIN 24/2/2024
J.E. (C&M)

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/07

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

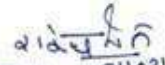
NIRMAN BHAWAN, NEW DELHI

Dated: 01-03-2024

Subject: Modifications in Clause 7 of GCC 2023 for Construction Works

The following amendments is made in the GCC 2023 for Construction Works :

Existing provision	Modified provision
Clause 7 Payment on intermediate certificate to be regarded as Advances No payment shall be made for work, estimated to cost Rs. twenty lacs or less till after the whole of the work shall have been completed and certificate of completion given. fixed for the same by the Engineer-in-Charge.	Clause 7 Payment on intermediate certificate to be regarded as Advances No change.
The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.	The contractor shall not be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.
No provision	However, to expedite the progress of work, Engineer-in-Charge, on the request of contractor, may make interim payment(s) even before the net payment limit specified in schedule 'F' is achieved. In such case(s) no interest / compensation shall be recoverable from contractor. Such payment by Engineer-in-Charge shall not be construed as waiver of limit specified in schedule 'F' for subsequent interim payment(s).


R.K. JAIN
 (EE (Contact))

Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, prescribed time limit.	No Change
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This issues with the approval of DG CPWD.

Sahu
01.03.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Const. e-file no. 9135972

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)

21/03/24
R.K. JAIN
(EE (Contact))

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/08

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

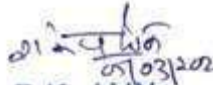
NIRMAN BHAWAN, NEW DELHI

Dated: 05.03.2024

Subject: Modifications in Clause 19 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 19 Labour Laws to be complied by the Contractor The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971. The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion. The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979. The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986, amended by Amendment Act No. 35 of 2016 and thereafter time to time. The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.	Clause 19 Labour Laws to be complied by the Contractor No change No change No change No change. No change


R.K. JAIN
 (EE (Contact))

No provision	The contractor shall also comply with the provisions of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time.
Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.	Any failure to fulfil these requirements shall attract the penal provisions of the relevant act and in this contract
Clause 19 M No Provision	Clause 19 M Sexual Harassment of Women at Workplace The contractor shall comply with all provision(s) and guideline(s) of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time or any other rules framed under any labour law affecting women worker(s).

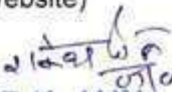
This issues with the approval of DG CPWD.


05.03.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023 e-file no. 9163323

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)


05/03/2024
R.K. JAIN
(EE (Contact))

Central Public Works Department
Office Memorandum

No. DG/CON/Construction 2023/09

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 01.04.2024

Subject: Modifications in Clause 1, 8 and 41 of GCC 2023 for
Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 1 Performance Guarantee	Clause 1 Performance Guarantee
Sl. No. (i) to (iv)	Sl. No. (i) to (iv) No Change
(v) On substantial Completion of any work which has been completed to such an extent that the intended purpose of the work is met and ready to use, then a provisional Completion certificate shall be recorded by the Engineer-in-Charge. The provisional certificate shall have appended with a list of outstanding balance item of work that need to be completed in accordance with the provisions of the contract.	(v) As per requirement of the client or otherwise specified in the contract, part completion certificate may be issued for the building(s)/ infrastructure project for the part(s) which have been completed in all respect and are ready for use. However, statutory approvals, Completion drawing of various services, wherever required, shall be obtained before handing over of building(s)/ part(s) of the project. Scope of the completed part(s) shall be mentioned in such part completion certificate.
This provisional completion certificate shall be recorded by the concerned Engineer-in-charge with the approval of Superintending Engineer /Project Manager / Chief Engineer/ Chief Project Manager, if required. After recording of the provisional Completion Certificate for the work by the competent authority, the 80 % of performance guarantee shall be returned to the contractor, without any interest.	The part completion certificate shall include outstanding balance work that need to be completed in accordance with the provisions of the contract. This part completion certificate shall be recorded by the authority as per contract value of work . After recording of the part Completion Certificate for the work by the competent authority, the proportionate amount of 80% of performance guarantee shall be returned to the contractor, without any interest.
However in case of contracts involving Maintenance of building and services /any other work after construction of same building and services/ other work, then 40% of performance guarantee shall be returned to the contractor, without any interest after recording the provisional Completion certificate.	However in case of contracts involving Maintenance of building and services /any other work after construction of same building and services/ other work, then proportionate amount of 40% of performance guarantee shall be returned to the contractor, without any interest after recording the part Completion certificate.

21/04/24
R.K. JAIN
EE (Contract)

(22)

Clause 8 Completion Certificate Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued.	Clause 8 Completion Certificate Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and shall furnish the contractor with a part or final completion certificate as the case may be, indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates.
But no final certificate sum actually realized by the sale thereof.	No change.
Clause 41 Release of Security deposit after labour clearance The Security Deposit security deposit and refund the balance amount.	Clause 41 Release of Security deposit after labour clearance No change.
No Provision	In case, if part completion certificate of work is recorded then security deposit shall be released only after recording final completion certificate of the work and after completion of defect liability period whichever is later or specified otherwise in the contract.

This issues with the approval of DG CPWD.

Sahu
01.04.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9163323

All CPWD and PWD officers for information and necessary action.(Through CPWD website)

disg
R.K. JAIN
EE (Contract)
04/04/2024

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/10

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

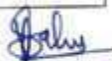
Dated: 03-06-2024

Subject: Modifications in Clause 36 of GCC 2023 for Construction Works

The following amendment is made in the Clause 36 of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 36 If relative working in CPWD then the contractor not allowed to tender The contractor shall not be <u>permitted</u> to tender for works in the CPWD circle <u>(Division in case of contractors of Horticulture/Nursery categories)</u> 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 the <u>Superintending Engineer</u> and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working <u>with him in any capacity</u> or are subsequently employed by him and who are near relatives to any <u>Gazetted Officer in the C.P.W.D. or in the Ministry of Housing and Urban Affairs</u>. Any breach of this condition by the contractor would render him liable to be <u>removed from the approved list of contractors of this Department. If however the contractor is registered in any other department, he shall be debarred from tendering in CPWD for any breach of this condition</u>	Clause 36 If relative working in CPWD then the contractor is not allowed to participate in the tendering process The contractor (enlisted or non-enlisted in CPWD) shall not be allowed to participate in the tender for work(s) in the CPWD Zone/circle /Division/Sub-Division responsible for award and/or execution of contract(s) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Chief Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working or are subsequently employed by him and who are near relatives to any Officer working in the CPWD. Any breach of this condition by the contractor would render him liable to be debarred for a period upto two years from tendering in CPWD as decided by the accepting authority mentioned in Schedule F and his decision will be excepted from clause 25.
NOTE: By the term "near relatives" is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.	No change

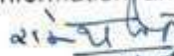
This issues with the approval of DG, CPWD.


03-06-2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9135972

All CPWD and PWD officers for information and necessary action. (Through CPWD website)


R.K. JAIN
EE (Contract)

केन्द्रीय लोक निर्माण विभाग
कार्यालय झापन

No. DG/CON/Construction 2023/12

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 09.10.2024

Subject: Modifications in Clause 10A of GCC 2023 for Construction Works

The following amendment is made in the Clause 10A of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 10A Materials to be provided by the contractor The contractor shall as specified in Schedule F. No Provision	Clause 10A Materials to be provided by the contractor (i) No Change (ii) Maintenance of Material at Site (MAS) Register (a) MAS register of the key materials including Cement, Steel Bitumen, Paint, Primer, Distemper, Varnishes, Tile Adhesive, Admixture, Anti termite chemical Water proofing compound material and other items as required by Engineer-in-Charge, and shall be maintained as per proforma in Appendix-XX of GCC. All the entries in the MAS registers are made by the designated staff of the contractor and same is reviewed weekly by the authorized representative and fortnightly by the Engineer-in-Charge. However, contractor is responsible for maintenance and safe custody of MAS registers.
(b) No provision	(b) The self-attested copies of tax paid bill of all the materials entered in the MAS register shall be submitted by the contractor at the time of review by representative of Engineer-in-Charge. In case of any doubt, genuineness of the tax paid bills; it can be verified by the representative of the Engineer-in-Charge or the Engineer-in-Charge, however, onus of genuineness of tax paid bills rest with the contractor.


 R K SINGH
 EE(Manual)



Appendix-XX
REGISTER OF MATERIAL AT SITE (MAS)

1. Division/Sub-division
2. Name of Work
3. Name of Article/Item
4. Estimated Requirements

Sr. No.	Date of Receipts (Details of Challans/ Bill of Materials location where plants and materials received/ Vehicle No.)	Received from/ Issued to	Quantity Received	Date Issued	Specific location where Materials Delivered / Issued	Quantity Issued	Balance Quantity	Signature of authorized representative of contractor	Signature of authorized representative of Engineer-in-Charge/AE/EE	Remarks
1	2	3	4	5	6	7	8		9	10

This issues with the approval of DG, CPWD.

(Signature)
(दिनेश कुमार खत्रीनियत)
अधीक्षक अभियन्ता (एन एड एम)

Issued from file No. CSQ/CM/17(1)/ Construction/2024

a-file 9184028 (DFA/9301389)

कलानिधि राय लोनिनि दिल्ली) के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(कलानिधि वेबसाईट के माध्यम से)

(Signature)
R K SINGH
EE (Material)

(Signature)

केन्द्रीय लोक निर्माण विभाग

कार्यालय ज्ञापन

No. DG/CON/Construction-2023/13

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated: 29.10.2024

Subject: Modifications in Conditions of Contract, Clause 10A of GCC Construction Works 2023.

Following amendments are made in the GCC Construction Works 2023:-

Existing Provision	Modified Provision
Clause 10A: Materials to be provided by the Contractor (i) The contractor shall, thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Contractor. The contractor shall at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped at least with the testing equipment as specified in schedule F. No Provision	No Change Field Laboratory: The contractor shall at his own expense, setup a material testing lab equipped with the testing equipment as specified in schedule F at site for conducting routine field test. External Laboratory: Letter for submitting sample(s) for testing of material shall be sent through e-mail to the Lab by authorized representative of Engineer-in-Charge or Engineer-in-Charge of the work along with name(s) of test(s) to be done on the material. The contractor shall collect the sample(s) from the site and submit it to the lab; make necessary payment for the testing charges. He will inform on the same day through email to authorized representative of Engineer-in-Charge and Engineer-in-Charge regarding submission of sample (s) and

R K SINGH
EE(Manual)

No Provision	payment made to the lab. If he either fails to collect or submit the sample(s) to the lab within 03 days or in time as prescribed in the specifications, whichever is earlier, the Engineer-in-Charge shall collect and submit the sample(s) and make necessary payment for testing charges to the lab. In such case, Engineer-in-Charge shall make recovery on account of collection and submission of sample(s) to the lab and paid testing charges etc. from the next R/A bill / Final bill of the contractor. This action of Engineer-in-Charge shall be final and binding. If the contractor fails three times in collection and/or submitting sample(s) and/or fails to make payment for testing charges, the contractor shall be debarred from tendering in CPWD for a period of two years.
Sl. no. (ii) (a) and (b)	No change

This OM is applicable for all NITs uploaded after date of issue of this OM.

This is issued with the approval of DG CPWD.


 (दिनेश कुमार उप्पेनिया)
 अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2024/Construction e-file- 9184436 (DFA/9303295)
 केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
 (केलोनिवि वेबसाईट के माध्यम से)


 R K SINGH
 EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction 2023/14

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 03.01.2025

Subject: Modifications in General Rules and Directions of GCC 2023 for Construction Works.

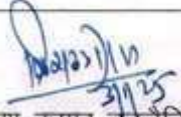
The following amendments are made in the General Rules and Directions of GCC 2023 for Construction Works:

Existing provision	Modified provision
Applicable for Item Rate Tender only (CPWD - 8) 4 The rates rupee one. In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, then such lowest contractors may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer. If the revised their tenders. In case of any be forfeited. In case all lowest contractors. Contractor of the work.	Applicable for Item Rate Tender only (CPWD - 8) 4 No change In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, then such lowest contractors may be asked to submit revised price bid online using e-tender website, quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, on the revised template which has been sent to them by the Tender Inviting Authority (TIA), but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer. No change
Applicable for Percentage Rate Tender only [CPWD- 7] 4B In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/ below on estimated cost of tender including all sub sections/sub	Applicable for Percentage Rate Tender only [CPWD- 7] 4B In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit revised price bid online quoting percentage above/ below on estimated cost of tender including all sub sections/sub heads as the case may


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EE(Manual)

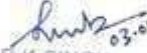
heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.	be on the revised template which has been sent to them by the Tender Inviting Authority (TIA), but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.
In case of any be forfeited.	
If the revised their tenders.	No change
In case all process of the work.	

This issues with the approval of DG, CPWD.


(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/ Construction/2024
e-file 9185053 (DFA/9307326)

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)


R K SINGH
EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/ Construction 2023/15

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 31.01.2025

Subject: Modifications in Clause 7A of GCC 2023 for Construction Works.

The following amendments are made in the Clause 7A of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 7A No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.	Clause 7A (a) No Running Account Bill/Final Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge. (b) The following documents shall also be part of the bill submitted by the contractor (these documents shall be owned by the contractor) before making payment:- 1. Details of person employed with date of their employment up to previous month. 2. Documents of payment made to the employees directly into their bank accounts up to previous month. 3. Documents of attendance through biometric attendance or other mode up to previous month. 4. Documents of deposition of EPF and ESI deductions in the employee's accounts up to previous month. 5. Any penalty imposed on the agency for delay in disbursing payment and deposition of EPF and ESI deductions in the employee's accounts up to previous month. 6. Any other document(s) required as per statutory requirements and/or as directed by Engineer-in-Charge. (c) In case, any of the documents submitted by the contractor is found false/forged at a later date, action for debarment of contractor will be taken by the SE/CE concerned.

This issues with the approval of DG, CPWD.

(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9184028 (DFA/9313089)

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।

(केलोनवि वेबसाईट के माध्यम से)

R K SINGH
EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय झापन

No. DG/CON/Construction 2023/16

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 10.02.2025

Subject: Modifications in Clauses 7, 8, 9 and Schedule F of clause 8 of GCC 2023 for Construction Works.

The following amendments are made in the Clauses 7, 8, 9 and Schedule F of clause 8 of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 7 Existing provisions No provision	Clause 7 No change In case of correction / rejection / short documents, it will be mandatory for Engineer-in- Charge to give recorded reasons for correction / rejection / submission of additional documents within seven days after submission of running bill by the contractor.
Clause 8 Completion Certificate (Issued vide OM No. DG/Construction-2023/09 dated 01.04.2024) Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and shall furnish the contractor with a part or final completion certificate as the case may be, indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates.	Clause 8 Completion Certificate Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and the Engineer-in-Charge, within seven days of receipt of intimation of completion from contractor will inspect the work and satisfy himself about completion of part /full work, then intimate to the concerned authorities as mentioned in Schedule F for inspection and issuance of part / final completion certificate. The concerned authorities will inspect the work and issue part/final completion certificate within thirty days of the receipt of such intimation. The Engineer-in-Charge shall furnish to the contractor a part / final completion certificate as the case may be, indicating defects (a) to


R.K. SINGH
EE(Manual)

But no final certificate sum actually realized by the sale thereof.	be rectified by the contractor and/or (b) for which payment will be made at reduced rates. No change.
Clause 9 Payment of Final Bill The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period of three months the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Asstt. Engineer, complete with account of materials issued by the Department and dismantled materials.  R K SINGH EE(Manual)	Clause 9 Payment of Final Bill i. The final bill shall be submitted by the contractor to the Engineer-in-Charge in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final completion certificate furnished by the Engineer-in-Charge whichever is earlier. At the time of submission of the final bill, receipt will be given by the O/o Engineer-in-Charge. ii. In case of correction / rejection / short documents, it will be mandatory for Engineer-in- Charge to give recorded reasons for correction / rejection / submission of additional documents within fifteen days after submission of final measurement and/or final bill by the contractor. iii. Final bill will be accepted with all pre-requisite documents such as sanctioned copies of extra items and deviation in quantities, escalation statements, recovery statement, theoretical statement, final completion certificate, final extension of time case, mandatory tests statement, dismantled materials account and other documents as mentioned in clause 7A etc. iv. An undertaking alongwith the final bill will be submitted by the contractor that "I / we hereby undertake that all the measurements/claims payable under this contract have been included in the final bill and will not submit any other bill/claims in future under this agreement thereafter". v. No further claims shall be entertained from the contractor after submission of the final bill and these shall be deemed to have been waived off and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer in charge will, be made within the

If the final bill is submitted by the contractor within the period specified above and delay in payment of final bills is made by the department after prescribed time limit, a simple interest @ 5 % (five percent) per annum shall be paid to the contractor from the date of expiry of prescribed time limit, provided the final bill submitted by the contractor is found to be in order.	period of three months. The period of three months will be reckoned from the date of receipt of the bill in complete shape after necessary corrections / additional documents, by the Engineer-in-Charge. vi. In case of foreclosure / determination of contract, if the contractor fails to submit the EOT case, final measurement /bills within 30 days of foreclosure/ determination, the EOT case and final bill will be prepared and decided by the department. The final bill shall only be paid after withholding amount equivalent to maximum compensation to be levied on the contractor. vii. If the final bill, in complete shape, is submitted by the contractor within the period specified above and delay in payment of final bill is made by the department after prescribed time limit, a simple interest @5% (five percent) per annum may be paid to the contractor from the date of expiry of prescribed time limit, provided the final bill submitted by the contractor contains all the documents as mentioned in para – (iii) & (iv) above.
Schedule F Clause 8 No Provision	Schedule F Clause 8 Competent Authorities to inspect and issue part / final completion certificate (To be filled by NIT approving authority).

This issues with the approval of DG, CPWD.

(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2025/Construction
e-file 9190123 (DFA/9315615)

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाइट के माध्यम से)

R K SINGH
EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय झापन

No. DG/CON/ Construction 2023/17

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

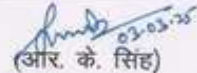
Dated: 03.03.2025

Subject: Modifications in Clause 14 of GCC 2023 for Construction Works 2023.

The following amendments are made in the Clause 14 of GCC 2023 for Construction Works 2023:

Existing provision	Modified provision
Clause 14 Carrying out part work at risk & cost of contractor If contractor: (iii) The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to : (a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or (b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.	Clause 14 Carrying out part work at risk & cost of contractor If contractor: (iii) The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to : (a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or (b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor. The contractor, from whom a part work / part incomplete work of any item(s), has been taken out of his hands, shall not be allowed to participate in the tendering/quotation process of part work / part incomplete work of any item(s).

This issues with the approval of DG, CPWD.


(आर. के. सिंह)

कार्यपालक अभियन्ता (एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file-9184028 (DFA/9319526)

केलोनियि तथा लोनियि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनियि वेबसाईट के माध्यम से)

R K SINGH
EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/ Construction 2023/18

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 16.06.2025

Subject: Modifications in Clause 25.2(b) and 25.6 of GCC 2023 for Construction Works.

The following amendments are made in the Clause 25.2(b) and 25.6 of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 25.2 (b) Qualification of Arbitrators: It is a term of this contract that each member of the Arbitral Tribunal shall be Graduate Engineer with experience in execution of public works engineering contracts, and he should have worked earlier at a level not lower than the Chief Engineer (equivalent to level of Joint Secretary to the Government of India). The aforesaid educational qualification and work experience shall be mandatory for appointment as Arbitrator. The age of Arbitrator at the time of appointment shall not exceed 75 years. An Arbitrator may be appointed notwithstanding the total number of active arbitration cases with him.	Clause 25.2 (b) Qualification of Arbitrators: It is a term of this contract that each member of the Arbitral Tribunal shall be Graduate Engineer (in Civil or Electrical or Mechanical Engineering) with experience in execution of public works engineering contracts and he should have worked earlier at a level not lower than the SAG (Level 14 of 7th CPC) of the Government of India). The aforesaid educational qualification and work experience shall be mandatory for appointment as Arbitrator. The age of Arbitrator at the time of appointment shall not exceed 70 years.
Clause 25.6 Fee payable to Arbitrator(s): The fee payable to the arbitral tribunal shall be as per CPWD OM No.2/2006/SE(TLC)/CSQ/137 dated 19.11.2019 (or latest amendment), and shall be shared equally by both the parties.	Clause 25.6 Fee payable to Arbitrator(s) for arbitration cases, shall be as per the fee given in the fourth schedule of the Arbitration & Conciliation Act, 1996 (or latest amendment), and shall be shared equally by both the parties.

This issues with the approval of DG, CPWD.

अधीक्षण अभियंता (सी. एंड एम.)

Issued from file No. CSQ/CM/17(1)/2025 / Construction e-file 9135700 (TLC File)

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनिवि वेबसाईट के माध्यम से)

R K SINGH
16.06.25
R K SINGH
EE(Manual)

चन्द्र पाल
16/06/2025

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction-2023/19

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated: 06.11.2025

Subject: Modification of Clause 19L of GCC-2023 for Construction Works.

The clause 19L in GCC-2023 for Construction Works is being modified:

Existing Provision	Modified Provision
Clause 19 L : Contribution of EPF and ESI The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis. The verification of deployment labour will be done through biometric attendance system or any other suitable method by the Engineer in Charge. The applicable and eligible amount of EPF & ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment provided same are in order	Clause 19 L : Contribution of EPF and ESI It will be mandatory for all the agencies to register with ESI and EPFO departments within 30 days of the award of the work unless exempted by the provisions of ESI and / or EPFO and as amended time to time. The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis. The verification of deployed labour will be done through biometric attendance system or any other suitable method by the Engineer in Charge. The agency shall submit an affidavit on a stamp paper of Rs. 100 that the employees were engaged fully and exclusively on the work for which the claim is being made. The applicable and eligible amount of EPF & ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment provided same are in order

This is issued with the approval of DG CPWD.

अधीक्षण अभियंता

(चन्द्र पाल)
वरिष्ठ प्रमुख अभियंता (सि. एं. ए. ए. ए. ए.)
Chander Pal Singh (G&M)

Issued from file No. CSQ/CM/17(1)/2024/ Construction e-file 9195855 (DFA/9350595)

के.लो.नि.वि. तथा लो.नि.वि. दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु (के.लो.नि.वि.वेबसाईट के माध्यम से)।

D.P. Jindal

D P. Jindal
EE (Contract)

**केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन**

**No. DG/CON/Construction 2023/20
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD**

VIDYUT BHAWAN, NEW DELHI

Dated: 27.02.2026

Subject: Modifications in General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Construction Works

The following modifications are made in the General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Construction Works.

Existing provision	Modified provision
General Rules & Directions	General Rules & Directions
11 (i) The Contractor whose tender 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.	11 (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee as mentioned in Schedule 'E' and within the period specified in Schedule F.
Clause 1	Clause 1
Performance Guarantee	Performance Guarantee
(i) The contractor shall submit an irrevocable Performance Guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.	(i) The contractor shall submit an irrevocable Performance Guarantee as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.
Sl. No. (ii) to (v)	No change
SCHEDULE 'E'	SCHEDULE 'E'
Reference to General Conditions of contract	Reference to General Conditions of contract
Sl. No. (i)	No change

D.P. Jindal
EE (Contract)

अधीक्षक अभियंता (सी. एच. एम.)
(चुनवत नगरपालिका) अ.म. (सी. एच. एम.)
Chandana Pal, SE (C&M)

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनिवि वेबसाइट के माध्यम से)

D.P. Jindal
EE (Contract)

Part -B

Additional Conditions / Specifications Specific to Civil Works

Source of Material:

- 1.0 The water for construction work shall be arranged by contractor. In case, contractor takes water from government source free of cost then recovery of water charges shall be made as per relevant Clauses. The contractor shall get the water tested with regard to its suitability of use in the works and get written approval from the Engineer-in-charge before he proceeds with the use of same of execution of works. If the tube well water is not suitable, the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in latest CPWD specifications/BIS code. Contractor may be required to install industrial RO plant at site at his own cost, for treating water for construction purpose.
- 2.0 Stone for stone masonry, stone aggregates /Coarse aggregates and stone ballast shall be of hard stone variety, mined from Govt. approved mines. The contractor shall submit source(s) of material along with samples of material from that source. Based on stipulated specifications, source and sample shall be approved by the Engineer- in-Charge. All stone aggregate/Coarse aggregates shall be of hard stone variety to be sourced from **Etawah** or **Gwalior (Bilaua)** and conforming to CPWD specification.
- 3.0 Fine aggregates to be used for concrete work, mortar for masonry, plaster etc shall be sourced from Govt. approved mines or manufacturer(s) as approved by Engineer-in-charge. The contractor shall submit samples of material to be used in the work from such source(s) along with details of such source(s) of material. Based on stipulated specifications, source and sample shall be approved by the Engineer- in-Charge. Sand to be used shall be of standard quality. River sand shall be sourced from **Sindh (Gwalior) or Chambal river near Etawah** and conforming to CPWD specifications.
- 4.0 In case Coarse Aggregates / Fine aggregates are not available from the sources mentioned in preceding paras, Stone aggregate/stone, sand shall be brought from any quarries subjected to the said materials confirm CPWD specifications and as approved by Engineer-in-charge.
- 5.0 In schedule of quantity, wherever provision for coarse sand and fine sand is specified in any item, use of washed crushed stone sand or manufactured sand shall also be permissible as per codal provisions. Nothing extra shall be payable or recoverable on this account, over & above the quoted rate(s) of respective item. However, decision of the Engineer-in-charge with respect to selection of material i.e. natural sand, crushed stone sand, manufactured sand etc. shall be final and binding on the contractor.
- 6.0 The earth required for filling shall be arranged by contractor and if any permission regarding earth filling required from any authority/department, that shall be taken by contractor itself. Nothing extra shall be payable to him on this account.
- 7.0 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.
- 8.0 Contractor has to provide reinforcement cover blocks made of approved proprietary pre packed free flowing mortars (Conbextra as manufactured by M/s Fosroc Chemical India Ltd. or approved equivalent) of high early strength.
- 9.0 The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.

- 10.0 The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand, earth etc. collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.
- 11.0 Except for the items, for which particular specifications are given in the contract document or where it is specifically mentioned otherwise in the description of items in the schedule of quantities, the work shall generally be carried out in accordance with the “CPWD specifications 2019 Vol. 1 and Vol. 2 with upto date corrections slips and instructions of Engineer-in-Charge. Wherever CPWD specifications are silent the latest IS codes/specification shall be followed.
- 12.0 The proposed building is a prestigious project and quality of work is of paramount importance. Contractor shall have to engage well-experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like exposed RCC works, gypsum plaster, structural steel work, structural glazing, granite and vitrified flooring, Polysulphide / P.U. sealant, expansion joints, factory made door- window shutters, plumbing works, textured paints, grit plastering, water proofing treatment, Extruded Polystyrene insulation boards, aluminium windows, façade works, CC pavements etc. will specially require engagement of skilled workers having experience particularly in execution of such items.
- 13.0 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately. If any material, even though approved by Engineer-In-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.
- 14.0 Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering plates, rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone / tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth etc to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.
- 15.0 All the tests in field lab setup at construction site shall be carried out by the Quality control team/engineer to be engaged by the contractor which can be witnessed by Engineer-in-charge or his/her representative. A daily intimation of tests to be conducted on a day shall be given to Engineer-in-charge or his/her representative. All the entries in the registers will be made by the designated Engineering Staff of the contractor. Contractor shall be responsible for safe custody of all the test registers. Submission of original/copy of all test registers, material at site register and hindrance register along with each alternate Running Account Bill and with the Final Bill shall be mandatory.
- 16.0 All material received at site shall be entered in MAS Register and copy of Supply order, 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/her representative at any time. The intimation of receipt of material shall be sent to Engineer-in-charge or his/her representative on day-to-day basis for his approval.

- 17.0 All the hidden items such as reinforcement, water supply lines, drainage pipes, conduits, sewers, putty, primers etc. are to be properly tested as per the design conditions before covering and their measurements in computerized measurement book duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.
- 18.0 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws and municipal body / corporation where CPWD Specifications are not available. The contractor should engage licenced plumbers for the work and get the materials (fixtures/fittings) tested by the Municipal Body/Corporation authorities wherever required at his own cost.
- 19.0 The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
- 20.0 The contractor shall invariably prepare at his own cost, the samples of finishing items i.e., flooring of different types, external & internal finishing i/c colour scheme of paint, tiles in dado, flooring in platforms & staircase, water supply & sanitary fittings and any other item as per direction of Engineer-in-charge. The contractor shall proceed with further finishing items only after getting the samples of these items approved in writing from Engineer-in-charge.
- 21.0 In the schedule of quantities/SCHEDULE OF WORK /preferred make list of items, brand/make of material is mentioned. The contractor shall be required to provide the same brand/make as mentioned in the item/list. If the same are not available in the market or the suppliers adopts monopolistic practice then the approval of other equivalent brand/make are to be obtained from Engineer-in-charge. The contractor will submit such a case at least three months before the materials is required at site. If the rate of other equivalent brand/make are less than the brand/make mentioned in the item, than necessary cost adjustment will be made for difference in rates.
- 22.0 The terms machine batched, machine mixed and machine vibrated concrete used elsewhere in agreement shall mean the concrete produced in concrete batching and mixing plant and if necessary, transported by transit concrete mixers, placed in position by the concrete pumps, tower crane and vibrated by surface vibrator /needle vibrator / plate vibrator, as the case may be to achieve required strength and durability.
- 23.0 PPC Cement shall be used in the work unless there is any reason requiring use of OPC as per approval of Engineer-in-charge.
- 24.0 No fly ash mixing at site would be allowed. However, with prior approval of Engineer-in-charge, fly ash mixing can be allowed at the Batching plants at site with proper handling mechanism and quality of fly ash as per codal requirement.
- 25.0 Under Special circumstances, contractor can be allowed to procure concrete from RMC plant approved by engineer-in-charge. However, nothing extra shall be payable to the contractor for procurement of concrete from RMC plant except rates payable for batch mixed concrete.
- 26.0 The work of services will be executed simultaneously. The Contractor shall minimize the scope of making recesses, holes, opening etc. as the same shall be planned in advance and necessary grooves/niches shall be provided in shuttering of RCC.
- 27.0 Gypsum plaster shall be executed using pneumatic spray machine of reputed make.
- 28.0 Laminates on flush doors shall be machine pressed, preferably in factory. The design and pattern of laminates shall be as per the approval of engineer in charge.
- 29.0 The furniture, UPVC door-windows, Aluminium door-windows-framework, shall be factory made.
- 30.0 During the execution of work, the finished items like tile work, granite work, marble work, Kota stone, structural glazing work etc shall be protected from damage / scratching/ brakeage / dis colouring etc by covering with paper, plastic or by any other means as per direction of Engineering –in- charge till the handing over of building to user department.

- 31.0 The contractor shall make available three (03) sets of completed Building Drawings, “As Built Drawings” along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.
- 32.0 The contractor shall make available three (03) sets of all drawings of internal and external services i.e. Water Supply, Sanitary line and Drainage lines. This shall be the prerequisite for payment of final bill. These drawings shall have the following information.
- 33.0 The contractor shall make available four (04) sets of computerized Standard Measurement Books (SMBs) having measurement of all the permanent standing in a building.
- a) For all piping, their diameters including soil, waste pipes and vertical stacks.
 - b) Ground and invert level of all drainage pipes together with locations of all manholes and connections, up to outfall.
 - c) For all water supply lines, diameter of pipes, location of control valves, access panels etc.

Design Mix Reinforced Cement Concrete from Batch Mix Plant or RMC.

- 34.0 The Contractor can install semi-automatic Batch Mix Plant or as directed by engineer in charge at site or in nearby area wherever permissible. If required, Contractor will arrange concrete from RMC (Ready Mix Concrete) producing plants (located within 50 km distance from the site of work) with prior approval from Engineer-in-charge. Nothing extra shall be payable for sourcing concrete from RMC plant. For all purposes, the Contractor shall carry out fully, the responsibilities of the “placement of Concrete” and the “manufacturer of concrete”.
- 35.0 The Engineer-in-Charge will reserve the right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user end.
- 36.0 The Engineer-in-charge reserves the right to exercise control over the: -
- a) Ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recording of test results and declaring the materials fit or unfit for use in production of mix.
 - b) Calibration checks of the RMC /semi-Automatic Batching plant.
 - c) Weight and quantity check on the ingredients, water and admixtures added for batch mixing.
 - d) Time of mixing of concrete.
 - e) Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action, if required.
- 37.0 For exercising such control, the Engineer-in-charge shall periodically depute his authorized representative at the RMC/semi-automatic batching plant. It shall be responsibility of the Contractor to ensure that all necessary equipment, manpower & facilities are made available to Engineer-in-Charge and/or his authorized representative at RMC/semi- automatic batching plant.
- 38.0 All required relevant records of produced and used concrete shall be made available to the Engineer-in-Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials, production & transportation of concrete mix which shall be binding on the Contractor. Only concrete as approved in design mix by Engineer-in-Charge shall be produced and transported to the site.

39.0 The concrete mix design with admixture will be carried out as per IS 10262, IS 456 and other relevant IS codes / CPWD Specifications amended upto last date of bid submission by the Contractor, at his own cost, through one of the following laboratories/Test houses to be approved by Engineer-in-charge:

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39.1 IITs, NITs or any Govt. Engineering College.

39.2 National Council for Cement & Building Materials, Ballabhgarh.

39.3 CRRI, Delhi.

39.4 In the event of all the above laboratories being unable to carry out the requisite design/testing; the Contractor shall have to get the same done from any other reputed laboratory with prior approval of the Engineer-in-Charge.

Note: Admixture/ Plasticizer to be used in concrete mix design shall be PCE (Poly Carboxyl Ether) based only and agency shall quote rates accordingly. Nothing extra shall be paid on this account.

40.0 The contractor shall submit the request for Concrete design mix with ingredients from approved sources and approved makes to Engineer-in-Charge within 20 days from the date of issue of letter of acceptance for onwards submission to above approved laboratories for Design mix. There shall be penalty for Rs 1000.00 per day subject to maximum penalty of Rs. 15,000/- in case of delay in submission. No concreting shall be done until the design mix is approved.

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

42.0 The contractor shall submit the mix design report from any of above approved laboratories for approval of Engineer-in-Charge within time given by Engineer-in-Charge from the date of issue of letter of acceptance of the tender.

43.0 In case of white Portland cement and the likely use of admixtures where CC/RCC is done with concrete pumps in concrete with ordinary Portland/white Portland cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and /or admixtures also, for which nothing extra shall be payable.

44.0 Each time when there is change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised mix design shall be done and approval obtained from the approved Laboratory or as per the direction of the Engineer-in-Charge. Preferably only single source of cement shall be kept for the work. In case contractor decides to use more than one source of approved cement brand then for each brand separate design mix shall be done and got approved by Engineer-in-charge.

45.0 The samples of cement, aggregate (fine & coarse) to be sent to the laboratories shall be sealed in the presence of the Engineer- in -Charge and shall have his signature and cost of packaging, sealing, transportation, loading, unloading, cost of samples and the testing charges for Mix design in all cases shall be borne by the contractor.

46.0 Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.

47.0 The Engineer-in-Charge reserves the right to exercise control over the ingredients, water and admixtures, purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials fit or unfit for use in production of mix.

48.0 The Contractor shall submit the test data of the material used for concrete mix-design in the laboratories, so the material being used at site can be compared with those data / size etc.

- 49.0 Concrete shall be handled from the place of mixing to the place of final deposit / placement by methods, which prevent segregation, or loss of any ingredients and contamination.
- 50.0 Concreting of any portion of the work shall be done in presence of the representative of the Engineer-in-Charge and shall be done only after approval of the Engineer-in-Charge.
- 51.0 Concreting shall be carried out continuously between constructions joints shown on the drawings or as agreed by the Engineer-in-Charge. The contractor shall closely follow the sequence of concreting where it is specified in the drawings. If concreting is interrupted before reaching the predetermined joint an approved construction joint shall be provided. Construction joints shall be minimized as far as possible. These shall be set at right angles to the general direction of the member. The surface film of the first placed concrete should preferably be removed while the concrete is still green to expose the aggregate and leave a sound irregular surface. However, care shall be taken not to disturb the concrete already laid.
- 52.0 Admixtures: Wherever required, admixtures of approved quality only shall be mixed with concrete as specified. The admixtures shall conform to IS: 9103. The chloride content in the admixture shall satisfy the requirements of BS: 5075. The total amount of chlorides in the admixture mixed concrete shall also satisfy the requirements of IS 456-2000.
- 53.0 Use of ready mixed concrete (RMC) may also be permitted, with prior approval of Engineer –in – Charge, without any extra payment. Separate account of design mix concrete and RMC shall however be kept. The ready mixed concrete shall conform to the requirement of durability, workability and strength as laid down for design mix concrete.

54.0 Conditions for Ready-mix concrete: -

- 54.1 The contractor can use concrete from RMC plants also with prior approval of the Engineer in-charge, instead of preparing the same in batching plant at site within agreement item of Batch Mix Plant without any extra cost, looking to expedite the progress and need of work. However, for procuring RMC from approved plant the contractor shall follow the following conditions. Nothing extra shall be payable to the contractor for procuring RMC from the external plant.
- 54.2 For procurement of ready-mix concrete from approved RMC plants, the contractor shall, within 20 days of award of the work, submit list of at least three RMC plant companies of repute along with details of transit mixer and pumps etc. to be deployed indicating name of owner/company, its location capacity, technical establishment, past experience and text of MOU proposed to be entered between purchaser (the contractor) and supplier (RMC Plant). The Engineer – in – Charge shall give approval in writing (subject to draw of MOU). The contractor shall draw the MOU with approved RMC plant owner / company and submit to Engineer – in – Charge within a week of such approval. The contractor will not be allowed to purchase ready mixed – concrete without completion of above stated formalities for use in this project. Notwithstanding the approval granted by Engineer-in-charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.

- 54.3 The Engineer-in-charge will reserve right to inspect at any such stage and reject the concrete if he is not satisfied about quality of product. The contractor should therefore draw MOU / agreement with RMC owner / company very carefully, keeping all terms and conditions / specifications forming a part of this tender document. Including the following controls.
- 54.3.1 The Engineer-in-charge reserves the right to exercise control over the ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of Materials, recordings of test results and declaring the Materials fit or unfit for use in production of mix.
 - 54.3.2 Calibration checks of the RMC.
 - 54.3.3 Weight and quantity check on the ingredients, water and admixtures added for batch mixing.
 - 54.3.4 Time of mixing of concrete.
 - 54.3.5 Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action.
 - 54.3.6 For exercising such control, the Engineer-in-charge (if required) shall periodically depute his authorized representative at the RMC plant. It shall be responsibility of the contractor to ensure that all-necessary requirement manpower & facilities are made available to Engineer-in-charge and / or his authorized representative at RMC plant.
- 54.4 The ready-mix concrete should be produced in RMC plant using fully automatic batching plant having capacity to produce 30 cum/hr. The plant should have computerized control and shall give print out of all the ingredients.
- 54.5 All required relevant records of RMC shall be made available to the Engineer-in-charge or his authorized representative. Engineer-in-charge shall, as required specify guidelines & additional procedures for quality control & other parameters in respect of materials and production & transportation of concrete mix, which shall be binding on the contractor & the RMC plant.
- 54.6 43 grade OPC/ PPC as per the contract conditions (conforming to relevant IS Codes) of brand / make / source as approved by Engineer-in-charge shall only be used for production of concrete.
- 54.7 The RMC produced concrete be accepted by Engineer-in-Charge at site after receipt of the same after fulfilling all the requirements of mix mentioned in the tender documents.
- 54.8 The item of design mix cement concrete shall be inclusive of all the ingredients including admixtures if required, labour, machinery, T&P etc. required for a design mix concrete of required strength and workability. The rate quoted by the agency shall be net & nothing extra shall be payable on account of change in quantities of concrete ingredients like cement and aggregates and admixtures etc. as per the approved mix design.
- 54.9 Ready mix concrete shall be arranged in quality as required at site of work by transportation in a transit mixer. [The general conditions of transit mixer and other requirement shall conform to IS:5892.] Ready mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-charge.

- 54.10 All other operations in concreting work like Mixing, Slump, transportation, laying / placing of concrete, compaction, curing etc. not mentioned in this particular specification for Design Mix Concrete shall be as per IS: 456-2000 or amended thereafter.
- 54.11 For design mix concrete of RCC other than those specified above, the contractor shall use the Design mix concrete produced by a central batching and mixing plant at his own cost. The contractor, if he so desires, can arrange the design mix concrete also from Ready mix concrete producer after obtaining written approval of the Engineer-in-charge. Nothing extra whatsoever shall be payable on this account.
- 54.12 Ready mix concrete shall be arranged in quantity as required at site of work. The ready-mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-charge. Nothing extra shall be payable on this account.
- 54.13 The item of design mix cement concrete (produced at site as well as arranged from RMC producer) shall be inclusive of all the ingredients including admixtures if required, labour, machinery, transportation etc. (except reinforcement and shuttering which will be measured & paid as per provision of contract) required for a design mix concrete of required strength and workability. The rate quoted by the agency shall be net & nothing extra shall be payable on account of changes in quantities of concrete ingredients like cement and aggregates and admixtures etc. as per approved mix design except for quantity of extra cement payable as per schedule of quantity. Other operations in concreting work like Mixing, Slump, transportation, laying / placing of concrete, compaction, curing etc. not mentioned in this particular specification for Design Mix of Concrete shall be as per IS: 456-2000.

55.0 Additional Conditions for Painting Work:

- 55.1 Mechanical sanding machine (for scrubbing & preparation of surface) shall be used by the contractor.
- 55.2 In case of painting over old work / new work, the contractor shall give proper notice to the Engineer-in-charge after the surface is prepared & before applying of primer coat / paint. The Engineer-in-charge shall either approve the surface thus prepared or ask the contractor to rectify the defects pointed. Only after approval by Engineer-in-charge, the priming / painting coat shall be applied.
- 55.3 Primer coat shall be applied over cement-based putty as per specifications of the paint manufacturers. If the component of primer is not included in the SCHEDULE OF WORK agreement item for painting, then payment for primer shall be made to the contractor separately.

56.0 Preferred Make & Approval of materials:

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

brand/manufacturer.

- 56.2 Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer-in-charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer-in-charge. Any material procured without prior approval of Engineer-in-charge in writing is liable to be rejected. Engineer-in-charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Non-standard materials shall not be accepted.
- 56.3 Various factory-made materials shall be procured from reputed and approved manufacturers or their authorized dealers and the material shall conform to the make as specified in this contract agreement. However, for the items not appearing in the list, preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available or where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification, the material can be used subject to the condition that in such case written approval of Engineer-in-charge be obtained before use of such material in the work.
- 56.4 All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD will not be used.
- 56.5 In the schedule of quantities / nomenclature of some items, the make(s) of product / material has been mentioned. The contractor is required to provide the same make(s) as mentioned in the item. If the same are not available in the market or the suppliers adopts monopolistic practice then the approval of other equivalent brand / make, matching with SCHEDULE OF WORK items and specification, can be taken from Engineer-in-charge. The contractor will submit such a case at least three months before the materials is required at site. If the rate of other equivalent brand / make is less than the brand / make mentioned in the SCHEDULE OF WORK item, than necessary cost adjustment will be made for difference in rates.
- 56.6 For items / materials not appearing in the list of preferred makes of materials, decision of Engineer-in-charge shall be final and binding.

57.0 Specialised Agencies

Contractor has to engage specialized agencies for following Civil works:

1. Water proofing

Only those specialized agencies/firms who have satisfactorily executed works as per following criteria during last seven years shall be eligible for the specialized works-

(a) Three works each costing not less than Rs. 6,24,000/-.

Or

(b) Two works each costing not less than Rs. 9,36,000/-.

Or

(c) One work costing not less than Rs. 12,48,000/-

The value of specialized 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 of specialized work to upto one month of award of this work.

Estimated cost of the specialized item/work for various items/schemes as listed above shall be calculated by the contractor based on the DSR/Market rates and shall be submitted to the Engineer-in-charge for approval within one month of award of work. After the approval of estimated cost of specialized components, the contractor shall submit the proposal for approval of specialized agencies for each specialized work. Any such proposal for approval of specialized agency shall be submitted to the Engineer-in charge at least two months prior to the expected date of start of specialized activity/work. The decision of Engineer-in-charge shall be final and binding on the contractor.

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

58. Guarantee bonds for various items:

The contractor shall be duly responsible for and shall guarantee proper design and performance of the following items for a period of 10 years from the date of completion of the work: -

1	All water proofing work (except waterproofing on masonry plaster)	Ten percent of the cost of water proofing work	The amount so withheld would be released after 10 (Ten) years from the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defect / leakage is noticed during the guarantee period, it shall be rectified by the contractor within seven days
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2	Internal water supply and Internal sanitary installations except sanitary fittings*. (*manufacturer warranty for sanitary fittings shall be submitted to Engineer-in-charge)	Five percent of the cost of work	of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another Contractor at the risk and cost of contractor. However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Engineer-in-charge, if so, decided by the Engineer-in-charge. The Security deposit against this item of work shall be in addition to the security deposit mentioned elsewhere in contract form.
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59. : ADDITIONAL CONDITIONS FOR CEMENT

- 1) The contractor shall procure ordinary Portland cement (OPC-43) conforming to IS: 8112 /Portland Pozzolana Cement conforming to IS:1489 {Part-I} as required in the work, from reputed manufacturers or their authorized dealers/reseller of cement such as mentioned in the approved make list of the Contract document.
- 2) The supply of cement shall be made in 50 kg. Bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of the relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not confirm to the relevant BIS code the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.
- 3) The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer-in-Charge. Cement godowns of the capacity to store a minimum of 1000 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made.
- 4) Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
- 5) 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. All expenditure to be incurred for testing of samples e.g. supply of material, packaging, sealing, transportation, loading, unloading, etc. including testing charges shall be borne by the contractor.
- 6) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case cement consumption is less than the theoretical consumption including permissible variation, work shall be liable to be rejected. In case of excess consumption, no adjustment needs to be made.
- 7) The cement brought to site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-Charge.
- 8) The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.

- 9) 43 grades ordinary Portland cement conforming to IS 8112/ /Portland Pozzolana Cement conforming to IS:1489 {Part-I} shall be used for concrete and RMC work. The Contractor shall procure cement only from reputed manufacturers as per list of preferred brands as specified in the tender document.
- 10) Cement: - 43 grade ordinary Portland cement conforming to IS 8112 / /Portland Pozzolana Cement conforming to IS:1489 {Part-I} shall be used.
 - a) In case 43 grade Ordinary Portland Cement is not available, the contractor will be allowed to use 53 grade Ordinary Portland Cement (confirming to IS: 12269), subject to documentary evidence produced by the contractor regarding non availability of the specified grade and also subject to independent verification by the Engineer-in-Charge. Nothing extra shall be paid for this.
 - b) Use of fly ash conforming to IS 3812 (Part –I) is permitted in cement concrete work as partial substitution of OPC subject to fulfilment of conditions as per IS 1489 (Part-I) and satisfying the condition of minimum cement content.
- 11) Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.
- 12) Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

60. : SPECIAL CONDITIONS FOR STEEL REINFORCEMENT BARS:

- a) The steel bars manufactured in India shall be classified, for the purposes of their use in work of CPWD, as under:
 - 1) Bar Set I, if it complies with the requirements given in the 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 stated therein Annexure- I(d)
and
 - 2) Bar Set II, if it complies with the requirements given in the latest version of IS 1786.
- b) The Contractor shall procure IS marked TMT steel bars (low alloy steel / CRS) or type Bar Set-I, having grade 500D / 550D or more from Primary Steel manufacturer such as SAIL, Tata Steel Ltd, RINL, Jindal Steel & Power Ltd and JSW Steel Ltd, or any other steel manufacturer or their authorized dealers (as per selection criteria laid down by the Department from time to time) having valid BIS license for IS:1786-2008 (Amendment -1 November 2012).
- c) Reinforcement steel bars to be used in this work shall be of type Bar Set-I (low alloy steel / CRS TMT steel bars), having grade 500D / 550D.
- d) The contractor shall have to obtain vouchers and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
- e) Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.
- f) The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.

- g) The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- h) For checking nominal mass, tensile strength, bend test, re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

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

- i) The contractor shall supply free of charge the steel required for testing including transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- j) The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as procedure prescribed in clause 38 of the General Conditions of Contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations leading to under designing of the structure, the work shall be summarily rejected, otherwise recovery at the rate so prescribed shall be made after ensuring structural soundness and stability. In case of excess consumption, no adjustment needs to be made.
- k) Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
- l) Steel bars brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
- m) In case the contractor brings surplus quantity of steel the same after completion of the work will be removed from the site by the contractor at his own cost after approval of the Engineer-in-Charge.
- n) Reinforcement including authorized spacer bars and overlaps shall be measured in length of different diameters, as actually (not more than as specified in the drawing) used in the work, nearest to a centimetre. Wastage and unauthorized overlaps shall not be measured.
- o) The standard sectional weights referred to as in Table 5.4 under para 5.3.4 in CPWD Specifications for works 2019 Vol. 1 will be considered for conversion of length of various sizes of MS bars, Tor steel bars and TMT bars into standard weight.
- p) Records of actual sectional weight shall also be kept dia-wise & lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average

sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as derived actual weight.

- q) If the derived weight as in para 2.14 above is lesser than the standard weight as in para 2.13 above, the derived actual weight shall be taken for payment. If the derived actual weight is found more than the standard weight then the standard weight as worked out in para 13 above shall be taken for payment. In such case nothing extra shall be paid for the difference between the derived actual weight and the standard weight.
- r) Mixing of different type of steel/different grades of steel shall not be allowed in the same structural members as main reinforcement to satisfy clause 26.1 of IS:456.
- s) Tolerances on Nominal Mass (individual sample) shall be as under:

S.No.	Nominal Size mm	Tolerances on the Nominal Mass (in % age)
1.	Upto and including 10mm	-8%
2.	Over10 upto & including 16mm	-6%
3.	Over16mm	-4%

- t) The reinforcing steel brought to site of work shall be stored on brick/ timber platform of 30/40 cm height, nothing extra shall be paid on this account.

Annexure-I(d)**1. CRITERIA FOR CLASSIFICATION OF BARS**

The steel bars manufactured in India shall be classified as specified hereunder for the purposes of their use in works of CPWD.

1.1 Process of Classification

Steel Bars shall be classified as *Bar Set I* and *Bar Set II*. The bars shall be placed under one of these categories based on *Type Test* (the test performed to select the bars) performed as specified hereunder. These tests to be performed are those specified in the latest version of **IS 1786** published by the Bureau of Indian Standards, and the additional tests mentioned in Para 2 of this document.

The *Type Test* shall be performed at any one of the National Test Houses, IITs, NITs, and NCCBM, subject to:

- (a) The test samples being collected from the manufacturing facility by the representative engineer of CPWD,
- (b) The availability of the required test facility at the said laboratory, and
- (c) The test being witnessed by representative engineer of CPWD.

1.2 Classification of Steel Bars

The bar shall be classified as:

- (1) *Bar Set I*, if it complies with the requirements given in the latest version of **IS: 1786**, and those given in Para 2 of this document, and
- (2) *Bar Set II*, if it complies with the requirements given in the latest version of **IS 1786**.

2. ADDITIONAL REQUIREMENTS

Four additional requirements as specified hereunder.

2.1 Chemical Composition Requirement

The permissible limits of additional elements shall be as per **Table 1**.

Table 1: Permissible limits of additional elements

Constituent	Permissible Limit (% of cast metal quantity)		
	Fe 415 D	Fe 500 D	Fe 550 D
Manganese (Mn)			
Maximum	1.60	1.60	1.60
Copper (Cu)			
Maximum	0.80	0.80	0.80
Minimum	0.20	0.20	0.20
Notes: The above composition shall be obtained as per latest version of IS 228 : (1) Manganese using Periodate Spectrophotometric Method (Part 12), and (2) Copper using Thiosulphate Iodide Method (Part 15) or Spectrophotometric (Diethyl Dithiocarbonate) Method (Part 21).			

2.2 TM Ring Requirement

The following two requirements shall be met with:

- (1) Does the *Tempered Martensite(TM) Ring* satisfy the visual analysis as per **Step 1** of **Table 2**; and
- (2) The thickness of the TM Ring obtained as per **Step 2** of **Table 2** shall be between $0.07f$ and $0.15f$, where f is the *original nominal diameter* of the bar.

(a) Test Procedure

The following is the procedure:

- (1) The test setup to capture the *Cross-Sectional Phase Distribution (CSPD)* of the TMT bars shall be as shown in **Figure 1**.
- (2) Steel bars may be cut using handsaw or an abrasive cutter with continuous supply of coolant to limit the temperature of steel, and thereby avoid any transition or changes in *Tempered Martensite(TM)* and *Ferrite-Pearlite (FP)* phases (**Figure 2**). The sharp edges of cut bars should be smoothened using

silicon carbide abrasive sheets. A metal polishing machine can be used to achieve effective smoothening.

- (3) The smoothened steel specimen shall be moulded in cold setting epoxy with good surface finish. Setting time of epoxy is about 10-15 minutes.
- (4) The moulded specimen surface shall be course polished using abrasive sheets of 80, 150, 220, 320, and 600 grit sizes in sequence. Specimens shall be micro-etched using Nital (5% Nitric acid in alcohol) to capture the CSPD.

(b) Measurements

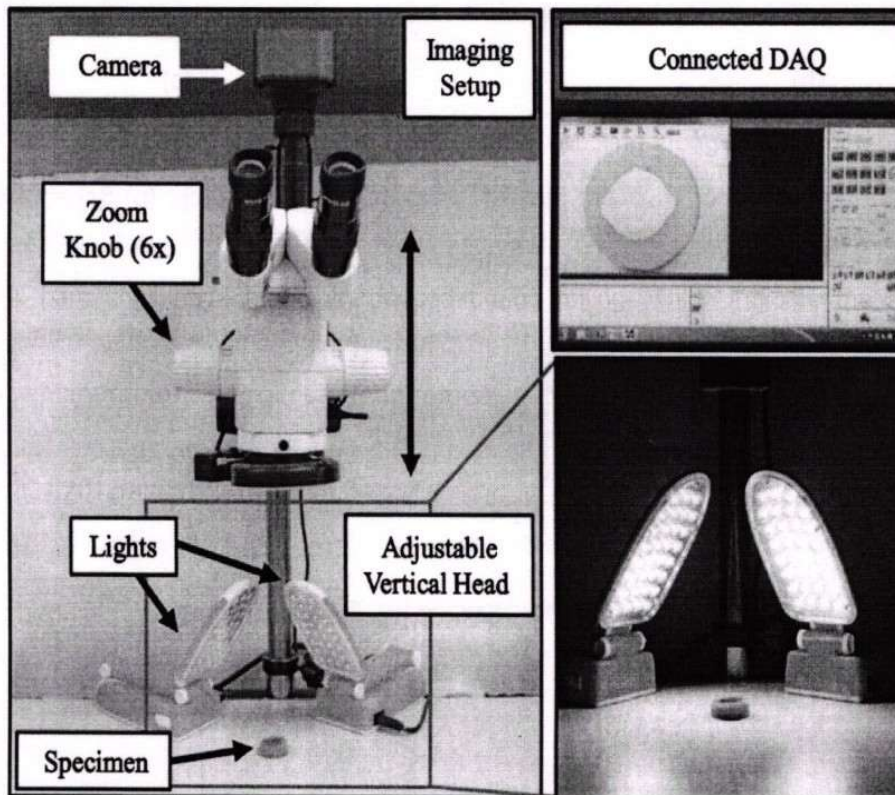
The procedure for obtaining the CSPD of the TM Ring along the perimeter shall be as per **Table 2**.

2.3 Marking Requirement

All bars shall have marks introduced during rolling, which indicate the *name of manufacturer or brand name*, and *grade of steel*.

2.4 Manufacturing Process Requirement

The process of manufacturing steel shall comply with the provisions of ISO 9001:2015 and ISO 14001:2004.



(a)

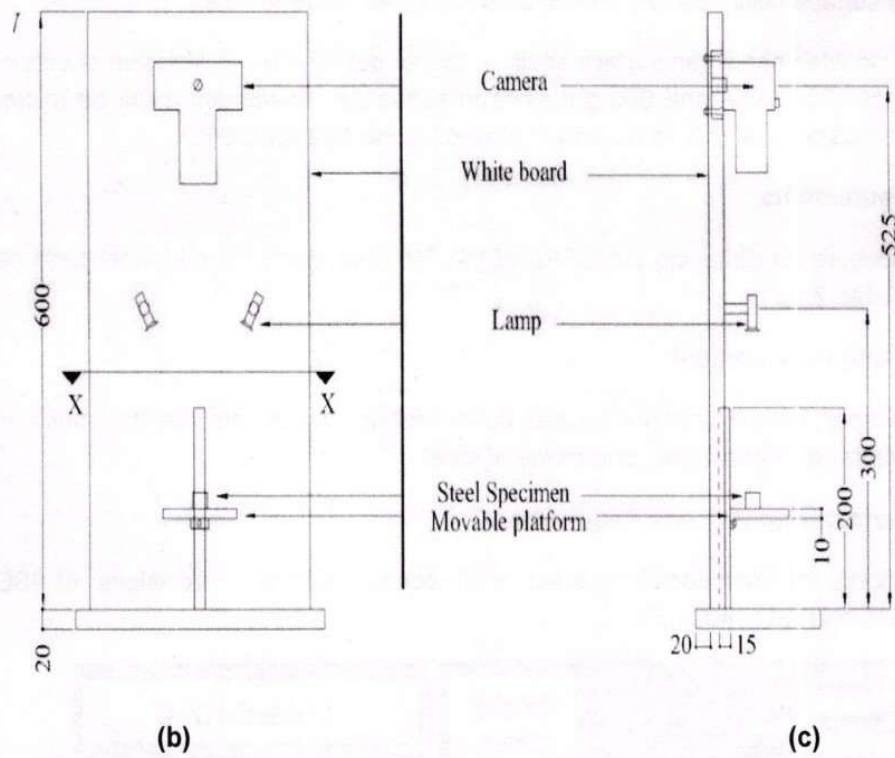


Figure 1: Test setup for CSPD of the TMT bars: (a) Imaging Setup, (b) Schematic Front View (c) Schematic Side View

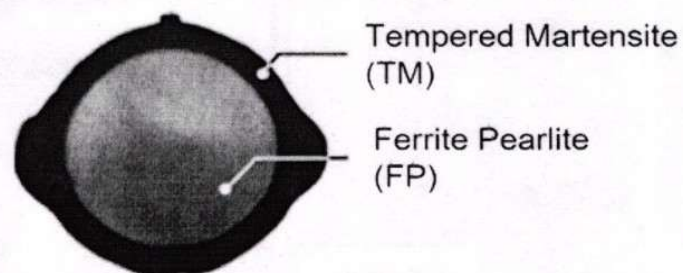
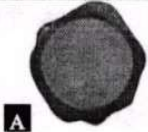
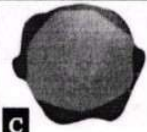
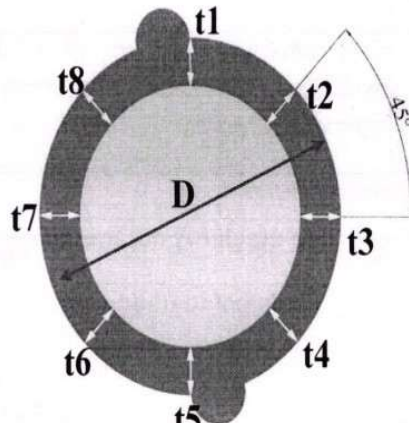


Figure 2: Cross-section of the steel bar showing the TM and FP areas

Table 2: Method of obtaining CSPD of TM Ring

Step 1: Visual Analysis of etched Cross-Section			
			
	A	B	C
	Acceptable	Not acceptable	Not acceptable
1.	Is a dark grey peripheral region and light grey core seen as in Case A?		Yes/No
2.	Does the dark grey peripheral region form a continuous outer ring?		Yes/No
Step 2: Dimension Analysis of TM-Ring thickness			
3.	Diameter D (mm) of the steel bar		
4.	Geometry		
		t_1	
		t_2	
		t_3	
		t_4	
		t_5	
		t_6	
		t_7	
		t_8	
		Measured t_{min} (mm)	
		Measured t_{max} (mm)	
5.	Is the measured $t_{min} \geq 0.07 f$?		Yes / No
	Is the measured $t_{max} < 0.15 f$?		Yes / No

LIST OF PREFERRED MAKES FOR CIVIL WORK

Approved makes of materials to be used in the work are as given in the table below. In case of non-availability of these makes, the Engineer-in-charge may allow use of alternative makes after seeking approval of TS authority. Only BIS marked materials shall be generally used in the work. Non-BIS marked materials may be permitted by the Engineer-in-charge only when BIS marked materials are not manufactured.

S. No.	Material	Preferred Make
1.0	Concrete Work	
(i)	Ordinary Portland Cement / Portland Pozzolana Cement.	ACC, Ultratech, Ambuja, Shree, J K Lakshmi
(ii)	White Cement	Birla White, J K White, Ultratech
(iii)	Construction Chemicals / Admixtures / Plasticizers / Super Plasticizers	BASF, FOSROC, Pidilite, Ardex Endura, Mapei, MC Bauchemic, Weber (Saint Gobain), Sika, MYK, Asianpaints
(iv)	Concrete Curing Compounds.	FOSROC, Sika, BASF, Pidilite, CICO, Weber (Saint Gobain), MC Bauchemie, Mapei
2.0	Reinforced Cement Concrete	
(i)	Corrosion Resistant Steel TMT Reinforcement Bars	SAIL (TMT HCR), Tata Tiscon (CRS), RINL (CRM/HSCRM), JSPL (Jindal Panther CRS) and JSW (Neo Steel CRS)
(ii)	Low Alloy TMT Reinforcement Steel bars	SAIL, Tata Steel, RINL, JSPL and JSW
(iii)	Mechanical Couplers for Reinforcement	Dextra India, Halfen, Sanfield, G-Tech
(iv)	Anchor fastener, Rebar chemical/Mechanical Fastener, Core Cutting, Expandable Fastener	Hilti, Fisher, Bosch, Wurth, Canon, Trixel, 3M India
(v)	Aluminium customized Shuttering	S-Form, MFE, Eins Technik Pvt. Ltd. ALFOAC, MFS
3.0	Water Proofing	
(i)	Crystalline Water Proofing Compound	Penetron Admix, Kryton KIM, Xypex C2000 Admix (Dosage as per manufacturer specification or that required to achieve performance criteria of DSR item 22.22 i.e. more than 90% permeability reduction and resistance to hydrostatic pressure up to 16 bar, whichever is more)
(ii)	Water Proofing swellable bar/ Liquid membrane/ single component applied (spray applied for deck water proofing/ Elastomeric acrylic UV	CICO, Ardex Endura, MYK Laticrete, Pidilite, BASF, Fosroc, Sika, MC Bauchemie, Kryton, Mapei, Asianpaints

	resistant liquid applied coating	
(iii)	Waterproofing PU / Polyurea/ Acrylic / Elastomeric Cementitious / SRI Coating/	Grace, BASF, Fosroc, Pidilite, Penetron, Sika, Asianpaints, Weber (Saint Gobain), Mapei
(iv)	Polysulphide Sealant for Joints joint width 25mm	Fosroc, Pidilite, Sika, Dow Corning, Wacker, Penetron
(v)	Water proofing membrane HDPE based waterproofing white composite sheet	Fosroc, Pidilite, W.R. Grace, BASF, Sika, Asianpaints, Weber (Saint Gobain), Mapei
(vi)	Water proofing compound	Grace, BASF, Fosroc, Pidilite, Penetron, Sika, Mapei, Asianpaints, MC Bauchemie, MYK
(vii)	Polyurethane over deck insulation foam	Grace, BASF, Fosroc, Pidilite, Penetron, Sika, Mapei, MYK, Bayer, MC-bauchemie, Asianpaints, Weber (Saint Gobain)
(viii)	Food Grade Coating for Water Tanks	Grace, BASF, Fosroc, Pidilite, Penetron, Sika, Mapei, MYK, Weber (Saint Gobain), Asianpaints
4.0	Masonry Work	
(i)	AAC Blocks	ACC, Tata Tiscobuild, JK Lakshmi, Jindal Air, Birla Aerocon, Modcrete, Firecrete, Instablock, Ultratech
(ii)	AAC Block adhesive	Ultratech, Ardex Endura, Ferrous Crete, Weber (Saint Gobain), Asianpaints
5.0	Steel Work	
(i)	Structural Steel Sections / Tubular Sections	SAIL, Tata Steel, RINL, JSPL and JSW
(ii)	Dash / Anchor Fasteners, Rawl Plug	HILTI, Fischer, Bosch, Wurth, Canon
(iii)	EPDM Gasket	Schuco, Hanu, Raven, Anand
(iv)	Metal deck profile sheet	Ezydeck of TATA / Lloyd Superdeck, JSW
(v)	Roofing Steel Sheet (Precoated)	Tata Bluescope Steel Ltd., Jindal Steel, JSW Steel
(vi)	Polycarbonate Sheet	GE-LEXAN, Polygal, Tuflite Dalphalon, Coxwell
6.0	Aluminium Work	
(i)	Aluminium Extrusions	Hindalco, Jindal, NALCO
(ii)	Anodised Aluminium Hardware (Heavy Duty)	HARDIMA, EVERITE, Alu Alpha, Hindalco, Pulse of LGF Sysmac
(iii)	Alluminium Door & Window Systems	Schuco, Technal, Deceuninck, Eternia-Hindalco, AIS Windows, Alupure, Axsys, Elixir Metform, A2Z Infra Solutions
(iv)	Aluminium Glass Facade & Structural Glazing Systems	Schuco, Technal, Eternia-Hindalco, Dow, Lindner AG, Art N Glass, Elixir Metform, AIS Window system, A2Z Infra Solutions

(v)	Aluminium Composite Panels / Honeycomb Composite Panels / Aluminium-HPL Panels	Allucobond, Alstone, Aludecor, Kalco, Reynoarch, Alutech, Virgo
(vi)	Metal (Aluminium) Facade Panels	Hunter Douglas, Novelise, Dwall Metallic, Lindner AG, BEMO, Anakon
(vii)	Silicone Sealant / Weather Sealant / Fire Sealant / Polysulphide Sealant	Alstone, Sika, Dow, Choksey, Hilti, Wuerth (Promat), GE Plastics, Pidilite, FOSROC, BASF
7.0	Flooring	
(i)	Glazed, Ceramic & Vitrified wall / floor Tiles (Antiskid/Matt/Glossy)	Kajaria, Johnson, Somany, RAK, Vermora, Orientbell, Restile
(ii)	Epoxy Grouts / Tile adhesive / Polymer modified cementitious grouts/	Ardex Endura, Ferrouscrite, MYK Schomburg, Pidilite, FOSROC, Sika, Weber (Saint Gobain), MC Bauchemie, Mapei, Asianpaints
(iii)	Epoxy flooring	MYK Schomburg, BASF, Flowcrete, Ardex Endura, FOSROC, Sika, Weber (Saint Gobain), MC Bauchemie, Asianpaints
(iv)	Wooden Laminated Flooring	Vista, Action Tesa, Pergo, Apex, Lamiwood, Kronotex, Greenply, Floormax, Kahrs Enginner Wood product
(v)	PVC Flooring	Armstrong, Unitex, LG, Responsive Industries, Tarkett, Tremco
(vi)	Vinyl Flooring	LG, 3M, Responsive Industries, Wonderfloor, Tarkett, Armstrong, Tremco
(vii)	Floor hardener	Ironite, Ferrok, Hardonate, Weber (Saint Gobain), MC Bauchemie
(viii)	Carpet Flooring	Interface, Shaw, Welspun, CCIL, Milicon, Flotex
8.0	Roofing / False Ceiling / Partition EPF	
(i)	Calcium Silicate / Mineral Fiber False Ceiling Tiles and frame work	Saint Gobain, Armstrong, Aerolite, Ramco Hilux, USG Borals, Anakon, Dexune
(ii)	GRG False ceiling / Gypsum Board False Ceiling/Partition and frame work	Diamond Ceiling, Armstrong, Saint Gobain Gyproc., USG Boral Armstrong, Knauf AMF, Anakon, Dexune
(iii)	Metal / U-Baffle / Open Cell / Wooden Laminated false ceiling i/c framework	Armstrong, Hunter Douglas, Lindner AG, Anakon, Dexune
(vi)	Rock Wool / Glass Wool	UP Twiga, Roxul (Rockwool), Rockloyd (Lloyd Insulations), Dhanbad Rockwool, Dexune, Rockfon
(vii)	Fibre cement board	HIL (Birla Aerocon), Bison (NCL), RAMCO Hicem, Everest, Visaka Industries, Dexune
(viii)	Extruded Polystyrene Insulation Board	Du Pont, Dow Corning, Supreme, Texas, Analco, Unitech-ikk, Sika
(ix)	Heat Resistant Tiles	Kajaria, Somany, Johnson
9.0	Doors / Windows / Wood work / Furniture	

(i)	Flush Door Shutter	Century, Greenply, Archidply, Duro, Jayana, Jain Doors Pvt Ltd
(ii)	Ply Wood / Block Board	Century, Greenply, Merino, Archidply, Duro
(iii)	Laminated Particle Board / veneered Particle Board	Greenlam, Century, Archidply, Merino
(iv)	Laminates/Veneers	Greenlam, Century, Archidply, Merino
(v)	Acrylic sheet/Acrylic laminate	Rehau, Opulux, Treelam, Praveedh Décor, EGR
(vi)	Wood Plastic Composite (WPC) Board	Rajshree plastic wood / Sintex / Polyline
(vii)	Factory made wooden Door Frames & Shutter	Jain wood Industries, Kutty, D S Doors, Duro, Ambika Wood, Shreeji Woodcraft, SM Corporation, Jain Doors Pvt Ltd
(viii)	Factory made kitchen cabinets, wardrobes etc.	Evoke, Godrej, Brown Crust, Sleek
(ix)	UPVC Doors & Windows	Fenesta, VEKA, KOMERLING, RHEAU, Aluplast, Wintech, Deceuninck, Green Fenestration technology, Saint Gobain
(x)	G.I. Steel Door Frame	Kutty Doors, Shakti Metdoor, NAVAIR, Synergy Thrislington.
(xi)	Fire Rated Metal/Wooden/Acoustic Doors (Glazed/Unglazed/sliding)	Tata Pravesh, Shakti-met, Pacific, Navair, Sukriti, Bhawani, ASES, Vetrotech, 4C Fire
(xii)	Fire Rated Glass	Pilkington, SCHOTT, FIRELITE, Saint Gobain, ASAHI, Pyroguard
(xiii)	Hardware for Fire Check Doors	Dorma, Hafele, Geze, Wuerth, Becker FS
(xiv)	S.S. Hardware, Door & Window Fittings, Hinges	Dorma, Godrej, Hafle, Kich
(xv)	Brass Hardware	Magnum (Mukund Overseas), Artistick's (Artistic Art Forum), EPPW, Décor, Palladium
(xvi)	Friction Stay Hinges	Hettich, Earl-Bihari, Kich
(xvii)	Floor Spring / Door Closer	Godrej, Dorma, Hafele, GEZE, Kich
(xviii)	Modular Work Stations	Godrej, HNI, Fuego, Steelcase
(xix)	Modular Office & Home Furniture – Table, Chair, Sofa, Bed, Dining Table/Chairs etc.	Godrej, HNI, Fuego, Steelcase, Integrity, Featherlite, Rockworth
(xx)	Storage - Compactors, Metal Almirah etc.	Godrej, Compress, HNI, Integrity
(xxi)	Aluminum/U-PVC Doors & Windows Hardware	Rotto, Mccoy 8M, Oben
(xxii)	Aluminum Glazed Partition System	Kubik, Jeb, Lycos
(xxiii)	Window Blinds, blackouts, curtains, etc.	Vista, Deck, Hunter Douglas, Marvel
(xxiv)	FACTORY MADE ROLL FORMED PREPAINTED / POWDER COATED	NCL alltek & Seccolor Ltd./Deccan Engineer & Fabricators / Blue Velly Developers Pvt. Ltd.

	G.I. SHEET WINDOW	
10.0	Finishing Works	
(i)	Ready Mix Plaster	Ardex Endura, Ferrouscrete, MYK Schmburg, Pidilite, FOSROC, Sika, Asianpaints
(ii)	Gypsum Plaster / Ready Mix Plaster/ Polymer modified self-curing Mortar	Saint Gobain (Elite 90), Ferrous Crete, Ardex Endura, Pidilite, FOSROC, Asianpaints
(iii)	Cement Primer	Nerolac, Berger, BP White (Berger), Decoprime WT(Asian), White primer (ICI), Acro paints
(iv)	Cement Based & Acrylic Wall putty	Birla, JK White, Asianpaints, Ferrous Crete, Acro paints
(v)	Oil Bound Washable Distemper	Asianpaints, Nerolac, Berger, Dulux ICI
	Dry Distemper	Asianpaints (Professional Acrylic Distemper), Nerolac: (Beauty Acrylic Distemper), Berger (Bison Acrylic Distemper), Dulux ICI (Maxilite)
(vi)	Acrylic Distemper (washable/ Real mix/ Low VOC)	Asianpaints (Tractor Aqua Lock Paint), Berger (Commando) Acro Paints (Aqualin AWD) or equivalent paints of Nerolac or ICI-Dulux.
(vii)	Acrylic Emulsion Paints	Asianpaints (Professional Premium Interior Emulsion Paint), Nerolac (Beauty Gold), Berger (Rangoli total care), ICI-Dulux (Super Cover), Acro Paints (Acropearl)
(viii)	Texture Finish	Asianpaints, Bakelite & Hylam, Spectrum, Heritage, Ultratech Texture Paints, Dulux
	Exposed Concrete Texture Finish	Ultratech Texture Paints, Armourcoat, Oikos, Heritage, Spectrum
(ix)	Steel Primer (Red Oxide Zine Chromate Primer)	Asianpaints, Nerolac, Berger, ICI-Dulux, Acropaints.
(x)	Synthetic Enamel Paint	Asian (Apolite Premium gloss enamel), Nerolac (Synthetic Hi gloss), Berger (Luxol Hi gloss), ICI-Dulux (Gloss Synthetic Enamel), Acro paints (Acrogold)
(xi)	Paint- Texture Concept Paints (Interior)	Asianpaints, Ultratech Texture Paints, Berger, acro paints
(xii)	Paint- Anti carbonation paint	Fosroc, Pidilite, BASF, Asianpant, Sika
(xiii)	Wood Primer	Asianpaints, Berger, ICI-Dulux, Nerolac.
(ix)	Melamine Polish for wood work	Asian Paints Melamine Gold, Wudfin of Pidilite, Timbertone of ICI-Dulux, MRF
(x)	PU polish for wood work	ICA, MRF, Asian, Berger
(xi)	Epoxy Paint	Asian, Nerolac, Berger, ICI, Kansai Akzo Nobel
(xii)	Fire Resistant Paint	Asianpaints, Akzo Nobel Coatings India Ltd., Viper.
11.0	Water Supply & Sanitary Works	

(i)	Stainless Steel pipe and fitting of grade AISI 304 as per JIS standard 3448 for water supply line & Fittings	SAIL (Salem Steel), Jindal, J-Press
(ii)	G.I. Pipe	Tata Steel, Jindal Pipes, Surya Roshni, APL Apollo Tubes
(iii)	GI Pipe Fittings	Unik, Zoloto, Surya, Jinda Pipesl, Tata Steel
(iv)	U-PVC pipe and Fittings	Supreme, Finolex, Astral, Prince, AKG, Birla HIL
(v)	C-PVC pipe and Fittings	Supreme, Finolex, Astral, Prince, AKG, Ashirwad, Oriplast, Birla HIL
(vi)	M.S. Black Pipes	Tata, Jindal, SAIL, APL Apollo, Surya
(vii)	CP Fittings (Premium range)	Kohler, Jaquar, Grohe, Roca
(viii)	Sanitary ware / Fixtures / Fittings (Premium range)	Kohler, Grohe, Hindware, Jaquar, Cera
(ix)	Urinal Frosted Glass partition	Greenlam, Jaquar, Merino, Fundermax, Cera
(x)	Sensor Operated Urinal	Jaquar, Hindware, Roca, Kohlar
(xi)	Glass Mirror	Saint Gobain, Modi Guard, Atul, Pilkington, Cera
(xii)	Specially abled Fitting	Pressalit, Hindustan, Cardin
(xiii)	Gun Metal Valves/Sluice Valves/ Air Release Valves	Zoloto, Audco (L&T), Castle, Leader Valves, SKS
(xiv)	Sluice Valve / Pressure Reducing valve / Non-Return valve / check valve / Butter fly valve / ball valve	Zoloto, Kirloskar, Leader Valves, Zoloto, SKS, Castle, Audco (L&T)
(xv)	Toilet Cubicles	Merino (Titan Series), Greenlam (Sturdo Classic), Trespa, Dorma
(xvi)	Glass Shower Partition	Dormakaba, Kich, Hafelle, Jaquar, Kohler
(xvii)	Insulation for external / exposed hot water pipes	KAIFLEX, ARMAFLEX, CAREFLEX
(xviii)	Pipe protection for external water supply pipes	PYPKOTE, ARMAFLEX, AKPOLYKOTE
(xix)	Water Meter	Prima, Kranti, Leader, Zoloto, Dashmesh
(xx)	Brass stop & Bib Cock	Zoloto, Sant, L&K, Leader,
(xxi)	Brass Ferrules	Dhawan Sanitary Udyog (PRIMA), Annapurna, Kalsi
12.0	Drainage	
(i)	Soil Waste / Vent Pipes and Fittings:	
	a) Hubless Centrifugally Cast Spun Iron Pipe and fittings	NECO, SKF, Hepco, Saint Gobain,
	b) Centrifugally (Spun) CI Pipes Class 'LA' / Ductile Iron Pipe	Kesoram, Electro Steel Castings Ltd., NECO
(ii)	C.I. Manhole covers, frames & GI Gratings	NECO, BIC, RIF, SKF, Hepco, Kapilansh,

(iii)	Unplasticized Non-Pressure Polyvinyl Chloride (PVC-U) Pipes underground conforming to IS: 15328-2003 & Fittings	Supreme, Astral, Finolex, Ashirvad
(iv)	Low noise system rain water pipes and fittings made of mineral reinforced Poly Propylene	Supreme, Astral, Finolex, Ashirvad
(v)	Drainage AC/HDPE Pipes	Jain Pipes, Oriplast, Reliance, MAZZA AC Pipes, Supreme
(vi)	DI Pipes & Fittings	Supreme, Electrosteel, Jindal, TATA DUCTURA, Kesoram
(vii)	SFRC Manhole covers & gratings	KK, JAIN, PARGATI
13.0 Stainless Steel & Glass Works		
(i)	Modular SS-304/316 Grade / Glass Railing with SS-304/316 grade Hardware	Dorma Kaba, GEZE, Hafele, Kich, Godrej, TATA, Art N Glass
(ii)	Stainless Steel Sink (Out of Salem steel)	Neelkanth, Niralli, Jayna, Silver shine
(iii)	Float Glass	Saint Gobain Glass India Ltd., Emirates Glass LLC, AIS Glass Solutions Ltd., Pilkington, Modi Guard, Glaverbel
(iv)	High Performance Glass	Saint Gobain Glass, Pilkington, Guardian, Emirates Glass LLC, Glaverbel, AIS Glass.
(v)	Lacquered Glass	Saint Gobain Glass, AIS Glass, Art N Glass, Guardian
(vi)	Glass Processor for making DGU/Toughening	Art N Glass, Shankar Tuff, Sheeshmahal, Shivshakti, GSC, Kaimapnat Glass, SK Tuff, AIS Glass
14.0 Miscellaneous		
(i)	Terracotta Cladding Tiles	Nuvocotto, Terracon, Kajaria, Johnson, Hunter Douglas, Moeding, Anakon, Terreal
(ii)	SS Dry Cladding Anchor with SS Clamp	Hilti, Fisher, Wuerth, Trixel
(iii)	Solid Acrylic Surface Boards	Dupont, LG Himacs, Neonnex, Hanex, GMGR India
(iv)	Modular Expansion / Seismic Joint System	Herculus, Sanfield, Vexcolt, MigUA, Katanaflex, Inprocorp, V.R. Engineers
(v)	Solid Surface (Corian)	Dupont, Neonnax, LG, Samsung
(vi)	Window Blinds	Vista, Deck, Huntar Douglas, MAC, TRAC
(vii)	Fire Sealant	Hilti, 3M India, Wuerth, Fischer
(viii)	Modular Rainwater Harvesting system	Retas Enviro Solutions Pvt Ltd, Bantair Pvt Ltd, Adwyn Impex Pvt Ltd, Life green system Ltd
(ix)	Precast GRC / Sand Stone Jali (Screen)	Unistone, Dalal, Birla GRC, Sanderson

(x)	Wall Paper	D'décor, Lifencolours, India Circus, Ego, Vescom, Nilaya by Asian Paints, Muraspec, Marshalls
(xi)	XPS Board/ Dimple board	Supreme, Insuboard, Soprema, Own corning, Shalimar, Technonicol, Pidilite
(xii)	Expansion filler board	Supreme, Insuboard, Soprema, Shalimar, Own corning, Technonicol
(xiii)	Concrete / HDPE/Grass grid pavers/ Kerb stone / paver blocks	Ovilite Industries, Eco Vision Industries, Dalal, Unistone
(xiv)	Drain board	Ovidrain, Tikidan, Technonicol, Virendra textile, Soprema
(xv)	Expansion Joint filler / Joint covers	Vexcolt International Ltd, Construction Specialities, Sainfield, Hercules, MIGUA, Mapei, Balco India, Z-tech, Inprocorp
(xvi)	Poly-sulphide Sealant for Joints joint width up to 25 mm	Pidilite, Sika, Dow Corning, Wacker

GUARANTEE BONDS
GUARANTEE TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
STONE WORK/ TILE WORK.

The agreement made this..... day of Two Thousandbetween.....S/o..... (hereinafter called the GUARANTOR on the one part) and the President of India (hereinafter called the Government on the other part).

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

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

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

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

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

That if the guarantor fails to make good all the defects, commits breach 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 obligatorand 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 TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
WATER-PROOFING WORKS.

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

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) datedand made between the GUARANTOR ON THE ONE PART AND the Government on the other part whereby the contractor inter alia undertook to render the building and structures in the said contract completely water and leak-proof.

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

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 after the expiry of maintenance period prescribed in the contract.

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

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

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

IN WITNESS WHEREOF these presents have been executed by the obligatorand 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 TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION
IN RESPECT OF SANITARY INSTALLATIONS / WATER SUPPLY / DRAINAGE
WORK

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

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated and made between the GUARANTOR ON THE ONE PART AND the Government on the other part, whereby the contractor inter alia, undertook to render the work in the said contract structurally stable, leak proof and sound material, workmanship, anodizing, colouring, sealing etc.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, defective anodizing / Powder coat colouring and finishing for **five** years from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will be free from any leakage, seepage, cracks in pipes and guaranteed against faulty material and workmanship, defective galvanizing for five years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

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

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

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

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

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

1. 2.

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

1. 2.

GUARANTEE BONDS/AFFIDAVIT FOR WORK

Appendix –B4

**GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF ALUMINIUM / TUBULAR WINDOWS, ROCK WOOL
INSULATION AND POLYURETHENE FOAM, METAL FALSE CEILING SYSTEM**

The agreement made this _____ day of _____ two thousand and _____
between _____ S/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. (Herein after 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, under look to render the work in the said contract recited structurally stable workmanship and use of sound materials.

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

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

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

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

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

IN WITNES WHEREOF those 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 presence of:

1. _____
2. _____

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

1. _____
2. _____

Schedule of Quantity (Civil Work)

Schedule of quantity

Name Of Work : - Construction of Office Building and Residential Quarters for SIB, Etawah (U.P.)

SH: Civil Work

Sl No	Description of item	Quantity	Unit	Rate	Amount
	<u>SH: I EARTH WORK</u>				
1	Excavating, supplying and filling of local earth (including royalty) by mechanical transport upto a lead of 5km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete.	2700.00	Cum	700.50	18,91,350.00
2	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.				
	All kinds of soil	1297.00	Cum	177.50	2,30,218.00
3	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 lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
	All kinds of soil.	60.00	Cum	260.30	15,618.00
4	Excavating trenches by mechanical / manual means of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, for all depth, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
	All kinds of soil				
	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	160.00	Mtr.	352.15	56,344.00

5	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lift.	809.00	Cum	196.00	1,58,564.00
6	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	1.00	Cum	2123.75	2,124.00
		Total			23,54,218.00
		SH: I (after 0.973 Factor)			22,90,654.00
	<u>SH: II CONCRETE WORK</u>				
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	4.00	Cum	7878.50	31,514.00
	1:5:10 (1 cement : 5 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 10 graded stone aggregate 40 mm nominal size Recycled Aggregate (RA))	174.00	Cum	4911.85	8,54,662.00
8	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing:				
a	1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	2.00	Cum	9895.20	19,790.00
b	1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	4.00	Cum	9311.40	37,246.00
9	Centering and shuttering including strutting, propping etc. and removal of form work for :				
a	Foundations, footings, bases for columns	44.00	Sqm	392.15	17,255.00

b	Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc	6.00	Sqm	842.50	5,055.00
10	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement : 3 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 6 graded stone aggregate 20 mm nominal size Recycled Concrete Aggregate (RCA) over 75 mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	41.00	Sqm	702.30	28,794.00
		Total			9,94,316.00
		SH: II (after 0.973 Factor)			9,67,469.00
	<u>SH: III REINFORCED CEMENT CONCRETE</u>				
11	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
a	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	9.00	cum	10852.95	97,677.00
12	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas,lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement: 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources).	24.00	cum	11505.50	2,76,132.00
13	Centering and shuttering including strutting, propping etc. and removal of form for all heights :				
a	Foundations, footings, bases of columns, etc. for mass concrete	245.00	Sqm	392.15	96,077.00
b	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	913.00	Sqm	842.50	7,69,203.00

c	Suspended floors, roofs, landings, balconies and access platform	876.00	Sqm	927.25	8,12,271.00
d	Shelves (Cast in situ)	31.00	Sqm	927.25	28,745.00
e	Lintels, beams, plinth beams, girders, bressumers and cantilevers	1353.00	Sqm	736.40	9,96,349.00
f	Columns, Pillars, Piers, Abutments, Posts and Struts	1047.00	Sqm	961.30	10,06,481.00
g	Stairs, (excluding landings) except spiral-staircases	67.00	Sqm	764.95	51,252.00
h	Edges of slabs and breaks in floors and walls				
i	Under 20 cm wide	104.00	metre	208.55	21,689.00
14	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	Thermo-Mechanically Treated bars of grade Fe-500D or more.	52724.00	Kg	107.85	56,86,283.00
15	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
	Thermo-Mechanically Treated bars of grade Fe-500D or more.	47200.00	Kg	107.85	50,90,520.00
16	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	1899.00	sqm	300.45	5,70,555.00

17	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. (Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.)				
	All works upto plinth level				
	Concrete of M25 grade with minimum cement content of 330 kg /cum	511.00	Cum	9504.75	48,56,927.00
18	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. (Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.)				
	All works above plinth level upto floor V level				
	Concrete of M25 grade with minimum cement content of 330 kg /cum	332.00	Cum	9860.40	32,73,653.00

19	Add for using extra cement in the items of design mix over and above the specified cement content therein.	279.00	Qtl	733.50	2,04,647.00
		Total			2,38,38,461.00
		SH: III (after 0.973 Factor)			2,31,94,823.00
	<u>SH: IV BRICK WORK</u>				
20	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	112.00	cum	7132.25	7,98,812.00
21	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	83.00	cum	9105.95	7,55,794.00
22	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in :				
	cement mortar 1:4 (1 cement : 4 coarse sand)	55.00	Sqm	905.05	49,778.00
23	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
	Cement mortar 1:4 (1 cement :4 coarse sand)	214.00	Sqm	1123.80	2,40,493.00
24	Extra for providing and placing in position 2 Nos 6 mm dia. M.S. bars at every third course of half brick masonry.	164.00	sqm	104.80	17,187.00
25	Providing and laying Autoclaved aerated concrete (AAC) blocks masonry with 150mm to 300 mm thick with grade 1 AAC block of density 551 to 650 Kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	145.00	cum	8333.65	12,08,379.00

		Total			30,70,443.00
		SH: IV (after 0.973 Factor)			29,87,541.00
	SH: V CLADDING WORK				
26	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
	Granite stone slab of all colour and texture except black, Cherry/Ruby red				
a	Area of slab upto 0.50 sqm	15.00	Sqm	4170.70	62,561.00
b	Area of slab over 0.50 sqm	37.00	Sqm	3848.70	1,42,402.00
27	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
	Granite work	163.00	mtr	510.95	83,285.00
28	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	4.00	metre	568.55	2,274.00
29	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	20.00	Each	978.70	19,574.00
30	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).				

	Stainless steel cramps	39.00	kg	714.40	27,862.00
31	Providing and fixing expansion hold fasteners on C.C. /R.C.C./Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete.				
	Wedge expansion type				
	Fastener with threaded dia 12 mm	233.00	each	61.70	14,376.00
32	Providing and fixing Ist quality ceramic glazed wall tiles of size 300 x 600 mm or more conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	197.00	Sqm	1267.95	2,49,786.00
		Total			6,02,120.00
		SH: V (after 0.973 Factor)			5,85,863.00
	<u>SH: VI WOOD AND PVC WORK</u>				
	-				
33	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
	Second class teak wood	1.35	Cum	142949.70	1,92,982.00
	-				
34	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	11.00	Sqm	176.40	1,940.00
	-				
35	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				

	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	74.00	Sqm	3473.85	2,57,065.00
	-				
36	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete :				
	2nd class teak wood				
	50 x 20 mm	182.00	mtr	271.75	49,459.00
	-				
37	Providing and fixing M.S. grills of required pattern in frames of windowsetc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
	Fixed to steel windows by welding	480.00	Kg	219.10	1,05,168.00
38	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :				
	100X58X1.90 mm	68.00	each	118.20	8,038.00
	-				
39	Providing and fixing special quality bright finished brass cupboard or ward robe locks with four levers of approved quality including necessary screws etc. complete.				
	40 mm	6.00	each	311.20	1,867.00
	-				
40	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.	26.00	Each	983.15	25,562.00
41	Providing and fixing fly proof stainless steel grade 304 wire gauge, to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia. 0.50 mm all complete.				
	With 12 mm mild steel U beading	65.00	sqm	1228.00	79,820.00

42	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in-charge, all complete.	4.00	Each	8366.15	33,465.00
43	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/ m ²) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m ³ . The frame will have a provision of G.I. Anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter . The frame shall be finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- charge . (Cost of SS ball bearing hinges is excluded).	23.00	Mtr	2202.90	50,667.00
44	Providing and fixing 60 mm thick glazed fire resistant door shutters of 120 minutes Fire rating conforming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-Charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60 mm made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled mineral wool insulation having density minimum 96 kg/cum and fixing with necessary stainless steel ball bearing hinges of size 100x89x3 mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-Charge (panelling to be paid for seperately).	11.00	sqm	12017.90	1,32,197.00

45	Providing and fixing non load bearing fixed frame for fire resistant glazed partition for 120 minutes fire rating, made out to a profile of dimension 60 mm x 70 mm of 1.6 mm thick galvanised steel sheet as per test evidence suitable for fixing fire rated glass for 120 minutes of both integrity & radiation control (EW120) & minimum 20 minutes of insulation (EI20).The profile has to be fixed to the supporting construction by means of anchor fasteners of size M10 x 80, every 150 mm from the edges and every 500mm (approx) c/c. Linear measurement of frame shall be measured for payment. The frame shall be filled with mineral wool insulation of density minimum 96kg/ cum and finished with a approved fire resistant primer or powder coating of not less than 30 micron in desired shade as per NBC 2016, IS 16231 (Part 3):2016 and directions of Engineer - in-Charge.	18.00	metre	2202.90	39,652.00
46	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m ²) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/ powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 120 minutes of fire resistance both integrity & radiation control (EW120) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.	11.00	Sqm	43677.65	4,80,454.00
47	Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete.				
	125 mm	36.00	Each	119.20	4,291.00

48	Providing and fixing cupboard shutter with 19mm thick one side decorative and other side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand including 2mm thick PVC edge banding tape with hot glue by edge bending machine etc. with auto closing spring loaded hinges (hydraulic type) etc. complete as per direction of Engineer-in-charge.(Payment of providing and fixing auto closing hinges shall be paid separately)	32.00	Sqm	2829.25	90,536.00
49	Providing and fixing 19mm thick both side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand boxes, shelves, racks, almirah, cupboard and drawer etc. including necessary nails, screws etc. complete as per direction of Engineer-in-charge.	58.00	Sqm	2593.15	1,50,403.00
50	Providing and fixing stainless steel fancy handle of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.				
	200mm	104.00	Nos.	186.65	19,412.00
51	Providing and fixing stainless steel soft closing spring hinges at 0 degree hinges (hydraulic type) of approved make/brand to cupboard shutters with full threaded steel screws including making necessary recess in board and finished etc. complete as per direction of Engineer-in-charge.	76.00	Each	272.00	20,672.00
52	Providing and fixing stainless steel soft closing heavy type telescopic drawer channels of approved make 500 mm long with screws etc. complete as per directions of Engineer- in-charge.	21.00	Set	885.10	18,587.00

53	Providing and fixing ready made 304 grade stainless steel Modular kitchen basket and accessories such as right angle basket (Plain Cup & Saucer, plant, Partition, Bottle rack, Thali, Cutlery) kitchen utensil basket, Dinner set basket, kitchen grain basket, Multipurpose basket as per site requirement including finishing (wherever required) and fittings. The same shall be fixed with necessary stainless steel nuts & bolts, Stainless Steel screws & telescopic channel etc. as per direction of Engineer-in-charge. (For payment purpose only weight of Stainless steel basket shall be considered excluding weight of all fixing accessories such as nuts, bolts, fasteners telescopic basket channels etc. Payment of providing and fixing telescopic channel shall be paid separately)	16.00	Kg	533.25	8,532.00
		Total			17,70,769.00
		SH: VI (after 0.973 Factor)			17,22,958.00
	<u>SH: VII STEEL WORK</u>				
54	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.	705.00	Kg	117.35	82,732.00
55	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	1124.00	Kg	133.70	1,50,279.00
56	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including Applying a priming coat of approved steel primer.				
	Using M.S. angels 40x40x6 mm for diagonal braces	3.00	sqm	5804.35	17,413.00
57	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	1650.00	kg	172.60	2,84,790.00

58	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm ²), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.				
	10 x 140 mm	738.00	each	182.20	1,34,464.00
59	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	784.00	kg	772.40	6,05,562.00
60	Providing and fixing angle iron frames for doors, windows and ventilators of mild steel Angle sections of size 35x35x5 mm, joints mitred and welded by angle iron 35x35x5 mm or 35x 5 mm flat pieces to the existing T-iron frame or to the wall with dash fastener, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer, all complete as per the direction of Engineer-In-charge. .	687.00	kg	130.50	89,654.00
		Total			13,64,894.00
		SH: VII (after 0.973 Factor)			13,28,042.00
	<u>SH: VIII FLOORING</u>				

61	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix: 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	324.00	Sqm	978.45	3,17,018.00
62	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) : 25 mm thick	53.00	Sqm	1948.25	1,03,257.00
63	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.	8.00	Sqm	2354.70	18,838.00
64	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
	Double charge vitrified tile polished finish of size				
a	Size of Tile 600 x 600 mm	310.00	Sqm	1453.65	4,50,632.00
	Glazed Vitrified tiles Matt/Antiskid finish of size				
b	Size of Tile 600 x 600 mm	49.00	sqm	1464.85	71,778.00

65	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.				
	Size of Tile 600x600 mm	36.00	sqm	1623.05	58,430.00
66	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
	Polished Granite stone slab of all colour and texture except Black, Cherry/Ruby Red	192.00	sqm	3071.05	5,89,642.00
		Total			16,09,595.00
		SH: VIII (after 0.973 Factor)			15,66,136.00
	<u>SH: IX ROOFING</u>				
67	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.				
		8.00	each	298.25	2,386.00
68	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				

	110 mm diameter	53.00	metre	377.40	20,002.00
69	Providing and fixing unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, of required size fixing in brick work at required position as direction of E-in-Charge.	17.00	metre	307.25	5,223.00
70	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
	Coupler				
a	110 mm	15.00	Each	136.15	2,042.00
	Bend 87.5°				
b	110 mm bend	15.00	Each	150.35	2,255.00
71	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
	110 mm	45.00	Each	371.30	16,709.00

72	Providing and fixing false ceiling at all heights including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c,				
	including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :				
	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	52.00	sqm	1355.80	70,502.00
73	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.	5.00	Each	84.55	423.00

74	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, 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 x 1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre- painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.				
	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G sheet having galvanizing of 100 gms/sgm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending..	48.00	Sqm	1902.95	91,342.00

75	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main 'T' at 600 mm centre to centre to form a grid of 1200x600mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to form grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods withgalvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T'. Bottom exposed with 24 mm of all T-sections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.				
	Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%, non- combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/mK.				
	With 15 mm thick integral densified micro edge light weight calcium silicate false ceiling tiles	140.00	sqm	2158.15	3,02,141.00
		Total			5,13,025.00
		SH: IX (after 0.973 Factor)			4,99,173.00
	<u>SH: X FINISHING</u>				
76	12 mm cement plaster of mix :				

	1:6 (1 cement: 6 coarse sand)	2837.00	Sqm	343.65	9,74,935.00
77	15 mm cement plaster on rough side of single or half brick wall of mix:				
	1:6 (1 cement: 6 coarse sand)	435.00	Sqm	395.35	1,71,977.00
78	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	48.00	sqm	506.60	24,317.00
79	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof	177.00	sqm	87.10	15,417.00
80	Finishing walls with Acrylic Smooth exterior paint of required shade :				
	New work (Two or more coat applied @ 1.67 Itr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	90.00	sqm	160.60	14,454.00
81	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	Two or more coats on new work	142.00	Sqm	155.90	22,138.00
82	French spirit polishing :				
	Two or more coats on new works including a coat of wood filler	170.00	Sqm	446.25	75,863.00
83	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	3405.00	Sqm	156.05	5,31,350.00
84	Wall painting with acrylic emulsion paint, 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.				
	Two coats	3315.00	sqm	137.45	4,55,647.00

		Total			22,86,098.00
		SH: X (after 0.973 Factor)			22,24,373.00
	SH: XI Road work				
85	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	135.00	Mtr	375.80	50,733.00
86	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8 mm having with water absorption less than 0.5% and conforming to IS:15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20 mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	8.00	sqm	2017.60	16,141.00
87	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.				
	80 mm thick C.C. paver block of M-35 grade with approved colour design and pattern.	700.00	sqm	1091.50	7,64,050.00

88	Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100 mm c/c on both ways, neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick, 100 mm wide MS sheet duly painted over priming coat, reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc including cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge.	11.00	sqm	3081.95	33,901.00
		Total			8,64,825.00
		SH: XI (after 0.973 Factor)			8,41,475.00
	<u>SH: XII Sanitary installation</u>				
89	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	1.00	each	6767.40	6,767.00
90	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	W.C. pan with ISI marked white solid plastic seat and lid	12.00	each	6515.55	78,187.00
91	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per 18:13983 with C.I. brackets and stainless steel plug 40 mm, including painting fittings wherever required :				
	Kitchen sink with drain board				

	510x1040 mm bowl depth 250 mm	4.00	each	6945.60	27,782.00
92	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
	Flexible pipe				
	32 mm dia	17.00	each	119.55	2,032.00
93	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	13.00	Each	1607.95	20,903.00
94	Providing and fixing toilet paper holder :				
	C.P. Brass	13.00	each	803.70	10,448.00
95	Providing and fixing soil, waste and vent pipes :				
	100 mm dia				
	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	180.00	Mtr	1169.30	2,10,474.00
96	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. :				
	For 100 mm dia pipe	90.00	each	362.85	32,657.00
97	Providing and fixing plain bend of required degree.				
	100 mm dia				
	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	40.00	each	368.00	14,720.00
98	Providing and fixing single equal plain junction of required degree :				
	100x100x100 mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	16.00	each	581.45	9,303.00
99	Providing and fixing terminal guard :				

	100 mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	15.00	each	427.80	6,417.00
100	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe				
	100 mm dia				
	SS 304 grade coupling with EPDM rubber gasket	119.00	each	432.05	51,414.00
101	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :				
	100 mm inlet and 100 mm outlet				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	18.00	each	854.55	15,382.00
102	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.	2.00	each	7979.20	15,958.00
		Total			5,02,444.00
		SH: XII (after 0.973 Factor)			4,88,878.00
	<u>SH: XIII Water supply</u>				
103	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
	Concealed work, including cutting chases and making good the walls etc.				
	20 mm nominal dia Pipes	139.00	metre	537.60	74,726.00
104	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc.				

	Internal work - Exposed on wall				
a	20 mm dia nominal bore	44.00	metre	437.30	19,241.00
b	32 mm dia nominal bore	128.00	metre	667.00	85,376.00
c	40 mm dia nominal bore	41.00	metre	811.90	33,288.00
105	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
	External work				
a	32 mm dia nominal bore	20.00	metre	540.30	10,806.00
b	40 mm dia nominal bore	20.00	metre	617.05	12,341.00
106	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
a	32 mm nominal bore.	5.00	each	689.60	3,448.00
b	40 mm nominal bore	5.00	each	826.10	4,131.00
107	Providing and fixing uplasticised PVC connection pipe with brass unions :				
	30 cm length				
	15 mm nominal bore	56.00	each	85.00	4,760.00
108	Painting G.I. pipes and fittings with synthetic enamel white paint with two coats over a ready mixed priming coat, both of approved quality for new work :				
a	32 mm nominal bore	44.00	metre	36.35	1,599.00
b	40 mm nominal bore	41.00	metre	42.65	1,749.00
109	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :				
a	32 mm nominal bore	5.00	each	489.05	2,445.00
b	40 mm nominal bore	5.00	each	631.30	3,157.00

110	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	15000.00	per ltr	11.00	1,65,000.00
111	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
	15 mm nominal bore	20.00	each	506.80	10,136.00
112	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
	15 mm nominal bore	9.00	each	798.95	7,191.00
113	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
	15 mm nominal bore	16.00	each	670.45	10,727.00
114	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	15mm nominal bore	60.00	each	574.30	34,458.00
115	Providing and fixing C.P. Brass extension nipple (size 15 mm x 50 mm) of approved make and quality as per direction of Engineer-in-charge.	15.00	each	74.80	1,122.00
116	Providing and fixing PTMT grating of approved quality and colour.				
	Circular type				
a	100 mm nominal dia	21.00	each	37.60	790.00
b	125 mm nominal dia with 25 mm waste hole	13.00	each	51.85	674.00
		Total			4,87,165.00
		SH: XIII (after 0.973 Factor)			4,74,012.00
	<u>SH: XIV Drainage</u>				

117	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :				
	100 mm diameter	15.00	metre	443.60	6,654.00
118	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design :				
	100 mm diameter S.W. Pipe	15.00	metre	458.50	6,878.00
119	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
	100x100 mm size P type				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	8.00	each	2707.65	21,661.00
120	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
	150 mm dia. R.C.C. pipe	151.00	metre	556.45	84,024.00
121	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 :				

	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	7.00	each	12770.55	89,394.00
122	Extra for depth for manholes :				
	Size 90x80 cm				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	3.00	metre	8825.40	26,476.00
123	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality				
	EHD - 35				
	Circular shape 560 mm internal dia	2.00	each	2123.80	4,248.00
124	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10.00	each	5957.90	59,579.00
		Total			2,98,914.00
		SH: XIV (after 0.973 Factor)			2,90,843.00
	<u>SH: XV Aluminium Work</u>				
125	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 / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the				

	directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
	For fixed portion				
	Powder coated aluminium (minimum thickness of powder coating 50 micron)	907.00	kg	530.90	4,81,526.00
126	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)				
	Powder coated aluminium (minimum thickness of powder coating 50 micron)	739.00	kg	634.45	4,68,859.00
127	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	82.00	sqm	1505.25	1,23,431.00
128	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting 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 (Door handle, lock and stopper etc.to be paid separately).	20.00	sqm	5325.90	1,06,518.00
		Total			11,80,334.00
		SH: XV (after 0.973 Factor)			11,48,465.00

SH: XVI Water Proofing					
129	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	69.00	sqm	617.05	42,576.00
130	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs. (c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. "All above operations to be done in order and as directed and specified by the Engineer-in-Charge".				
	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	290.00	sqm	1684.60	4,88,534.00

131	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 0.50 mm. 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.				
a	For vertical surface two coats @ 0.70 kg per sqm per coat	11.00	sqm	472.90	5,202.00
b	For horizontal surface one coat @1.10 kg per sqm.	6.00	sqm	362.80	2,177.00
132	Providing & Applying high quality acrylic modified resin based texture of Dholpur/Red sand stone Pattern with anti algae and UV resistance properties to be applied as intermediate finish in desired pattern @ 43.04 kg/10 sgm to form film of 1- 1.5 mm thickness after scrapping and properly cleaning the surface to remove loose particles from the plaster surface, followed by top coating with Premium Acrylic Smooth exterior paint with Silicone additives of required shade by two or more coats @ 1.43 litre/10 sqm, complete as the direction of Engineer -in-Charge.	1784.00	Sqm	597.00	10,65,048.00
		Total			16,03,537.00
		SH: XVI (after 0.973 Factor)			15,60,242.00
	SH: XVII Rain Water Harvesting & Tubewells				

133	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.				
	All types of soil				
	300 mm dia	150.00	metre	707.75	1,06,163.00
134	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, beyond 90 metre & upto 150 metre depth below ground level.				
	All types of soil				
	300 mm dia	10.00	metre	825.70	8,257.00
135	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	200 mm nominal size dia	70.00	metre	1113.35	77,935.00
136	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	200 mm nominal size dia	90.00	metre	1255.70	1,13,013.00
137	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	5.00	cum	1509.80	7,549.00

138	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer in-charge.	5.00	cum	1538.25	7,691.00
139	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	5.00	cum	1538.25	7,691.00
140	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	6.00	cum	2024.50	12,147.00
141	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	15.00	hour	1085.05	16,276.00
142	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:				
	200 mm dia	1.00	each	321.15	321.00
143	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.				
	200 mm clamp	2.00	each	2293.65	4,587.00

144	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
	200 mm dia	1.00	each	357.60	358.00
		Total			3,61,988.00
		SH: XVII (after 0.973 Factor)			3,52,214.00
	SH: XVIII New Technologies and Materials				
145	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/ Clerestory windows & other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm ² , modulus of elasticity 900 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
	Frame size 65 x 100 mm	79.00	metre	1111.30	87,793.00

146	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid decorative type flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant. WPC to be laminated with PVC foil of minimum 14 microns thick of approved design pasted with hot melt adhesive on both faces of shutter and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In-Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
	30 mm thick	25.00	sqm	4764.20	1,19,105.00
		Total			2,06,898.00
		SH: XIX (after 0.973 Factor)			2,01,312.00
	SH: XIX Based on DSR				
147	Providing and laying Autoclaved Aerated concrete(AAC) blocks masonry 100 mm/ 125 mm thick with Grade-1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand) with RCC band at sill level and lintel level. (The payment of RCC band and reinforcement shall be made for seperately).	32.00	cum	8544.90	2,73,437.00
148	Extra for depth for Brick masonry road gully chamber :				
	Size 50x45x60 cm				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.50	mtr	5307.35	13,268.00

149	Granite stone work gang saw cut (polished and machine cut) of thickness 18 mm for wall lining (veneer work) upto 3.50 metre height including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture,, backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the Granite stone shade (To be secured to the backing by means of cramps, which shall be paid for separately).				
	Granite stone slab of all colour and texture except black, Cherry/Ruby red				
	Area of slab upto/ over 0.50 sqm	95.00	Sqm	6524.95	6,19,870.00
150	Providing and fixing stainless steel (304 grade) tower bolt with necessary stainless steel nuts and screws etc. complete as per direction of Engineer- in-charge.				
	200 x10 mm	44.00	Each	168.25	7,403.00
151	Providing and fixing stainless steel (304 grade) sliding door bolt with necessary stainless steel nuts and screws etc. complete as per direction of Engineer- in- charge.complete :				
	250x16 mm	44.00	Each	215.40	9,478.00
152	Providing and fixing glass fibre mesh Type II grade I at the junctions of RCC and Masonry work i/c cement paste and labour for cutting glass fibre netting into required size and holding in position etc. complete as per direction of Engineer-in-charge.	426.00	Sqm	161.00	68,586.00
153	Extra for providing stainless steel (SS-304 grade) friction hinges instead of Anodised Aluminium butt hinges 100x75x4 mm in aluminium windows w.r.t. corresponding item, to the side/ top hung position in windows, of approved quality, with necessary stainless steel screws etc. as per direction of Engineer-in-charge.				
	300 x 19 x 1.9 mm	208.00	Each	357.15	74,287.00

154	Providing and fixing Stainless Steel SS grade 304, curtain rod 25mm dia 1.20mm thick with screws, Brackets, all necessary Fittings PVC sleeves etc., wherever necessary complete :				
	25 mm dia	101.00	mtr	289.90	29,280.00
		SH XX Total			10,95,609.00
		Grand Total SH I to XX			4,38,20,082.00
	Add cost index @ -1% as per OM issued by ADG (L) vide letter no. 23(197)/ADG(L)/3172 dated 19.12.2025				4,33,81,881.00
	SH: XX Market Rates				
155	Providing and fixing of 2 hour fire rated Door closer having weight capacity 70 kg tested as per IS: 3614 Part -2 or BS: 476-22 for fire doors and make as per approve sample UL Listed for fire doors, as per directions of Engineer -in-charge.	5.00	Each	2971.55	14,858.00
156	Providing and fixing (stainless steel 304 grade) hanging floor door stopper, satin finish with necessary screws etc. complete.	44.00	Each	121.05	5,326.00
157	Providing and fixing soap dispenser of cat. No. ACN-CHR-1135N in jaquar make or equivalent in Grohe or Kohler with necessary fitting screws etc. complete as per direction of Engineer-in-charge.	13.00	Each	1582.80	20,576.00
158	Providing and fixing white vitreous china under counter wash basin of size :- 560x430x195 mm in oval shape of cat. No. FLS-WHT-5701 in Jaquar or equivalent in Grohe or Kohler including all connection, complete as per direction of Engineer-in-charge.	13.00	each	3045.25	39,588.00
159	Providing and fixing C.P. brass Pillar Cock with auto closing system of cat. no. PRS-CHR-031 in jaquar or equivalent in Grohe or Kohler make with necessary fitting screws etc. complete as per direction of Engineer-in-charge.	5.00	each	2488.85	12,444.00
160	Providing & fixing CP Brass health faucet with one meter long ss tube and wall hook of jaquar or equivalent make as approved by engineer in charge.	13.00	Each	1232.50	16,023.00

161	Extra For providing Low alloy or corrosion resistant Thermo- mechanically treated Steel reinforcement of TMT Bar set-I of grade Fe-500D or more as defined in tender document over and above corresponding TMT item, all Complete as per Direction of Engineer-in- Charge.	99924.00	kg	5.60	5,59,574.00
162	Providing and fixing polished Chrome Finish overhead shower with shower arm of make Jaquar OHS-1661+SHA-477 approved equivalent make complete as directed by Engineer-in-charge.	8.00	Each	2066.85	16,535.00
163	Providing and fixing polished Chrome Finish Brass Single lever concealed diverter for bath and shower with button on top of make Jaquar (ALD-CHR-079N + ALI-CHR-85079NK) or approved equivalent make complete as directed by Engineer-in-charge	8.00	Each	6184.05	49,472.00
164	Providing and fixing Polished Chrome Finish Deck Mounted Single Lever Wash Basin Mixer 450mm Long Braided hoses Without popup Drain of Make: kohler (K-26040IN-4ND-CP)/ Jaquar ARC-CHR-5001BPM/Grohe 32858000 or approved equivalent complete including cutting and making good the walls / metallic sheet for wash basin where required conforming to manufacturer specifications and completed to the satisfaction of Engineer-in-charge.	8.00	Each	4449.65	35,597.00
165	Providing and fixing Polished Chrome Finish Swan Neck Single Lever Sink Mixer with Swinging Spout on Upper Side (Wall Mounted Model) with Connecting Legs & Wall Flanges as per ASME standards with spout length more length 200mm and single piece construction with flow rate of 13.95 LPM @ 3 bar Pressure of Make: kohler (K-99483IN-A4-CP)/ Jaquar ARI-CHR-39165/ or approved equivalent make complete including cutting and making good the walls / metallic sheet for Sink/wherever required conforming to manufacturer specifications and completed to the satisfaction of Engineer-in-charge.	4.00	Each	4889.55	19,558.00
166	Providing and fixing SS Single Towel Rail 450mm Long, Stainless Steel , 78 mm wide complete with complete concealed fittings arrangement of Jaquar ACN-CHR-1111BSM or approved equivalent make complete as per the direction of engineer in Charge	8.00	Each	1410.95	11,288.00

167	Providing & fixing Glass fibre reinforced concrete (GFRC/ GRC) screens/ Jali/ panels casted with "spray mix" concrete design in approved size, pattern, design and thickness (Border 40-50 mm thick and internal member 15-20 mm thick). The screens are made from ordinary portland cement of grade 43, super quartz fine graded silica sand, alkali resistant glass fibre, super plasticizers, polymers and U.V. resistant synthetic inorganic pigments. The jali having dry bulk density not less than 1800 kg/cum, flexural strength average limit of proportionlity not less than 7 MPa, Modulous of rupture not less than 15 MPa and water absorption not greater than 8% after 28 days. The jali shall be casted by layering methodology using direct power spray machine. The fixing of jali shall be done by using self drilling screws, MS clamp, fasteners on structural component i.e. RCC beam, column or mild steel section as per details/ specifications provided by manufacturer. The joints are to be left for expansion/ contraction and will be filled with elastomeric exterior grade paintable PU sealant. The jali shall be painted with premium acrylic smooth exterior paint with silicon additives of required shade @ 1.43 litre/10 sqm (two or more coats on new work). Note:- This include cost of all operations as stated above excluding the cost of structural component of mild steel, RCC; which shall be paid for separately.	72.00	Sqm	5433.35	3,91,201.00
		SH XXI Total			11,92,040.00
	Grand Total SH I to XIX with Cost Index and SH XX without Cost Index				4,45,73,921.00
	SAY				4,45,73,921.00

Part -C (for E&M)

ELIGIBILITY OF SPECIALIZED AGENCIES:

1. The Main Contractor should either himself meet the eligibility conditions for the respective E&M components or otherwise he shall have to Associate with Agencies, fulfilling the eligibility requirements mentioned below and consent letter from at least one eligible Associate Agency of the respective components of E&M work shall also be submitted as per attached Form.
2. The Main Contractor shall also be eligible to carry out himself any or all of these works without associating with any specialized agency, provided, he directly procures the equipment of approved make from manufacturer and gets it installed from Authorized Agency/Service Provider of the Manufacturer/ Specialized Agency as per the eligibility criteria mentioned below.
3. The Main Contractor **has to submit the following documents for Association of Contractor within the time period as mentioned in General Terms and conditions specific to E& M Component.** In support of the eligibility conditions of the proposed Associated Agency, copy of their registration documents, Verifiable completion certificates of the work, Electrical Contractor's License, GST Documents duly attested by the Main Contractor shall be submitted to the Engineer In charge of Minor Head EE(E), CPWD for deciding the eligibility.
4. Each such Associated Agency will certify that they are not debarred, as on the day of submission of documents. Proposal for Associating Agency for minor components of work shall be submitted with consent letter from each Associated Agency independently for all Electrical and Mechanical components. The Main Contractor shall submit an Affidavit of MOU signed with eligible Associated Agencies. The Affidavit of MOU in the enclosed Form shall be signed by both the parties i.e., Main Contractor as first party and Associated Agency as 2nd party. MOU for all Electrical and Mechanical components shall be submitted, independently.
5. In the event of the concerned E&M Agency not performing satisfactorily or failure of Associated Agency to complete the E&M work, the Main Contractor on written directions of the department, shall remove the Associate Agency, deployed on the work and shall submit name of new Associate who fulfils the conditions mentioned in NIT to execute the left-over work without any loss of time or variation in cost to the department.
6. Such Associates shall also give an undertaking along with the Main Contractor that, both of them together will stand guarantee for the equipment already supplied for which payment has been released by the department. If any equipment supplied for the work, during the **currency** of the earlier Associate Agency becomes redundant /not in a position to be put to beneficial use, the main contractor shall be liable for replacement of the equipment(s) at no cost to the Department. No change of Associated Agency will be allowed without prior approval of the Engineer-in- charge of the work.
7. In respect of all E & M works, the materials shall be procured only from the original equipment Manufacturers / Authorized dealers of OEM. The contractor shall submit all documentary details in fulfilment of these conditions regarding procurement of materials including relevant test certificates.
8. Executive Engineer (E) shall be the Engineer-in-charge for E & M works. Separate tender schedule and Special Conditions for E & M Work are appended with this tender. It will be obligatory on the part of the Contractor to sign the tender documents for all the component parts.
9. The Main Contractor shall be responsible and liable for proper and complete execution of the E & M works and ensure coordination and completion of both civil and E & M work. The Associated Agency shall attend the inspection of the work by the Engineer- in-charge of E&M works as and when required.

10. The Associated Agency should have successfully completed similar works including capacity of the equipment required as applicable during the last 7 years ending up to previous day of last date of submission of tenders. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bid.
11. The completion certificate shall be issued by an officer not below the rank of Executive Engineer or equivalent, duly attested. The rough cost and capacity of various Sub heads/Equipment given in the Eligibility criteria should not be used or interpreted for any other purpose.
12. Minimum Eligibility Criteria for Associated Agency for Execution of E&M Components and Specialized Works wherever applicable

Sl. No	Component of E&M works	Estimated cost Rs. In Lakhs	Eligibility Criteria
1.	SH-1, (Internal and External Electrical Installations outdoor lighting and water supply pump)		Contractor registered in appropriate class of composite category in CPWD and possessing valid Electrical Contractor's License of appropriate Voltage issued by the competent authority.
2.	SH: - 2 (Fire Fighting System)	9.63 Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated component cost OR Two similar works, each of value not less than 60% of Estimated component cost OR One similar work, each of value not less than 80% of Estimated component cost Similar work shall mean "SITC of Fire Fighting System"
3.	SH: -3 (Fire Alarm System)	4.61 Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated component cost OR Two similar works, each of value not less than 60% of Estimated component cost OR One similar work, each of value not less than 80% of Estimated component cost Similar work shall mean "SITC of Fire Alarm System"
4.	(DG Set)	5.33Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated Component cost and Capacity not less than 80% KVA of DG Set. OR Two similar works, each of value not less than 60% of Estimated Component cost and Capacity not less than 80% of Supply and installation of DG Set. OR

			One similar work, value not less than 80% of Estimated Component cost and Capacity not less than 80% of Supply and installation of DG Set. Similar work shall mean "SITC of DG Set" The Composite category contractor is also be eligible to carry out himself / herself the work without associating any specialized agency provided: (a) He fulfills the prescribed eligibility criteria respectively for these work(s). OR (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer as per criteria mentioned in NIT. The Composite Contractor and the associated specialized agencies give required affidavit to confirm their association. (Note- In no case the amount of work completed to qualify the minimum eligibility criteria by the agency shall be relaxed)
5.	(Lift)	15.85 Lakh	(a) The Contractor have to associate with OEM to execution the work. OR (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer as per criteria mentioned in NIT. The Composite Contractor and the associated specialized agencies give required affidavit to confirm their association.
6.	Solar PV system	5.98 Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated Component cost and Capacity not less than 80% of KVA rating of Solar PV System. OR Two similar works, each of value not less than 60% of Estimated Component cost and Capacity not less than 80% of Supply and installation of Solar PV System. OR One similar work, value not less than 80% of Estimated Component cost and Capacity not less than 80% of Supply and installation of Solar PV System. Similar work shall mean "SITC of Solar PV System" The Composite category contractor is also be eligible to carry out himself / herself the work without associating any specialized agency provided:

			(a) He fulfils the prescribed eligibility criteria respectively for these work(s). OR (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer as per criteria mentioned in NIT. The Composite Contractor and the associated specialized agencies give required affidavit to confirm their association. (Note- In no case the amount of work completed to qualify the minimum eligibility criteria by the agency shall be relaxed)
7.	(UPS)	3.42 Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated Component cost and Capacity not less than 80% of rating of UPS OR Two similar works, each of value not less than 60% of Estimated Component cost and Capacity not less than 80% of rating of UPS OR One similar work, value not less than 80% of Estimated Component cost and Capacity not less than 80% of rating “of UPS Similar work shall mean "SITC of UPS" The Composite category contractor is also be eligible to carry out himself / herself the work without associating any specialized agency provided: (a) He fulfils the prescribed eligibility criteria respectively for these work(s). OR (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer as per criteria mentioned in NIT. The Composite Contractor and the associated specialized agencies give required affidavit to confirm their association. (Note- In no case the amount of work completed to qualify the minimum eligibility criteria by the agency shall be relaxed)
8.	(EPABX and LAN, CCTV system)	10.92 Lakh	The Contractor having successfully completed Three similar works, each of value not less than 40% of Estimated Component cost OR Two similar works, each of value not less than 60% of Estimated Component cost. OR

			One similar work, value not less than 80% of Estimated Component cost Similar work shall mean "SITC of EPABX and LAN system" The Composite category contractor is also be eligible to carry out himself/herself the work without associating any specialized agency provided: (a) He fulfils the prescribed eligibility criteria respectively for these work(s). OR (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer as per criteria mentioned in NIT. The Composite Contractor and the associated specialized agencies give required affidavit to confirm their association. (Note- In no case the amount of work completed to qualify the minimum eligibility criteria by the agency shall be relaxed)
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**PROPOSAL FOR ELIGIBLE ASSOCIATING AGENCIES FOR MINOR COMPONENTS OF
WORK**

To,
Executive Engineer (E),
Agra Electrical Division,
CPWD, Agra.

Name of Work:- Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).

NIT No: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

I/we hereby propose the following agencies as per mentioned against each for executing corresponding minor components of work. Their consent letters are also attached:

Sl. No.	Name of Associated Contractor	Completion Certificates attached	Consent letter attached (Yes/No)
1.			

Note: Self Attested photocopies of enlistment order, valid electrical contractor license, annual prequalification order, work experience completion certificates (signed not below the Rank EE or equivalent officer) of each agency for each component of E&M work shall be submitted. Proposal for eligible associating agencies for minor components of work

Signature of Composite Contractor

**CONSENT LETTER FROM ELIGIBLE ASSOCIATE AGENCY OF MINOR COMPONENT OF
WORK**

(To be submitted for each and every specialized E&M Component)

Name of Work:- Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).

NIT No: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

Minor Component: - (Name of minor components)

I / We hereby give my consent to associate with M/s (Main Contractor), for executing the minor component of work of (Mention sub work).

I / We will execute the work as per specifications and conditions of the agreement and as per directions of the Engineer –in-Charge for the corresponding minor work till the completion of the work.

I / We will be responsible for necessary action to handover the installations and for rectification of defects and repair during the defect liability/ warranty period.

Also, I / We will employ full time technically qualified Engineer / supervisor for the minor component of the work. I / We will attend inspection of officers of the department as and when required.

Date:

Signature (with date) of Major component
Contractor
Address

Signature (with date) of Associate/ Minor Component
Contractor
Address

Witness with address
(From major component contractor side)

Witness with address
(From minor component contractor side)

AFFIDAVIT OF MEMORANDUM OF UNDERSTANDING [M.O.U]

(To be submitted for each and every specialized E&M Component)

- 1] M/S [Name of the firm with full address]
Enlistment Status
Valid Up to:
[Henceforth called the main contractor]
And
- 2] M/S [Name of the firm with full address]
Enlistment Status
Valid Up to:
[Henceforth, called Associated Contractor]
For the execution of E&M Work components (Name of the component)

Name of Work:- Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).

NIT No: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act [amended up to date] and the department [CPWD] can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows. Both the parties shall be paid consequent to the execution as per agreement to the extent this MOU permits. In case of any dispute, either of us will go for mediation/ arbitration by the Engineer in Charge. Any of us may appeal against the mediation to the competent authority, CPWD. His decision shall be final and binding on both of us.

We have agreed as under:

- 1] The Associated contractor will execute all electrical and mechanical works in the wholesome manner as per terms and conditions of the agreement.
- 2] The Associated contractor shall be liable for disciplinary action if he failed to discharge the action[s] and other legal action as per agreement.
- 3] All the machinery and equipment's, tools and tackles required for execution of the electrical and mechanical works, as per agreement, shall be the responsibility of the Associated Contractor.
- 4] The site staff required for the electrical work shall be arranged by the Associated contractor as per terms and conditions of the agreement, failing which necessary recovery may be imposed as decided by the engineer in charge from the running account bill of contract.
- 5] Site order book maintained for the said work shall be signed by the main contractor as well as by the Engineer of the Associated Contractor and by Associated Contractor himself.
- 6] All the correspondence regarding execution of E&M work shall be done by the department with the Associated Contractor with a copy to the main contractor. In case of non-compliance of the provisions of agreement, the main contractor, as well as the associated contractor shall be responsible. The action under clauses 2 and 3 shall be initiated and taken against the main contractor.

SIGNATURE OF MAIN CONTRACTOR

Date:

Place:

SIGNATURE OF ASSOCIATED CONTRACTOR

Date:

Place:

Witness with address

(From major component contractor side)

Witness with address

(From minor component contractor side)

WILLINGNESS CERTIFICATE

Name of Work:- Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work).

NIT No: - 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27

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

I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-in-Charge. Also, I will employ full time technically qualified supervisor/engineer for the works, failing which necessary recovery may be imposed as decided by the engineer in charge from the running account bill of contract. I will attend inspection of officers of the department as and when required.

Dated:

Signature of the associate Contractor

GENERAL TERMS AND CONDITIONS specific to E& M Component

- 1.0 All the works shall be carried out as per CPWD General specification for Electrical Works, Part-I (Internal)-2023; Part-II (External)-2023, Part-V (wet riser and sprinkler system)-2020, Part-VI (Fire Detection & Alarm System)-2018, Lift-2003, DG Set -2013 amended up to date and should also comply with relevant provisions of the Indian Electricity Rules and Acts as applicable, amended up to date.
- 2.0 The contractor is advised to visit the site of work to have an idea of the execution of the work; failure to do so shall not absolve their responsibility to do the work as specified in agreement.
- 3.0 Contractor shall have to adhere the following timelines for various submittals and approvals such as MoUs, Drawings, Technical data sheets etc. with specialized agencies required before actual execution failing which non-refundable amount shall be recovered as penalty from the due payment of the contractors for each failure -

SL	Description of the activity	To be submitted within days of date of start of work	Amount to be recovered for each day of delay subject to total amount recovered not exceeding maximum amount as stipulated
1	Submission and approval thereof in respect of MoUs with associate/specialized agencies and working Drawings required for actual execution of various sub-works as per scope of the work. i. IEI (if applicable) ii. Firefighting system, Fire Alarm System iii. EPABX, LAN and CCTV System. iv. DG Set and v. UPS vi Lift, Air conditioners	i. 60 days ii. 60 days iii. 60 days iv. 90 days v. 90 days vi 120days	i. Rs. 250/-* ii. Rs. 250/-* iii. Rs. 250/-* iv. Rs. 500/- # v. Rs. 250/-* vi. Rs. 250/-#
2.	Submission and approval thereof in respect of technical data sheet. i. Electrical conduits, Switch boxes, DBs and accessories. ii. Firefighting system, Fire Alarm System	i. 90 days ii. 90 days	i. Rs. 250/-* ii. Rs. 250/-*

iii. LAN and CCTV System.	iii. 90 days	iii. Rs. 250/-*
iv. DG Set	iv. 120 days	iv. Rs. 500/-#
v. UPS system.	v. 120 days	v. Rs. 500/-#
vi. Street Lights	vi. 120 days	vi. Rs. 250/-*
vii. Lift, Air conditioners	vii-150 days	viii. Rs 250/-#
* Maximum amount that can be recovered as penalty is Rs. 10,000/- for each component.		
# Maximum amount that can be recovered as penalty is Rs. 20,000/- for each component.		

4.0 Rates:

4.1. The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work inclusive of all taxes including GST, duties, and levies etc. and all charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contractor, watch and ward of all materials for the work at site etc.

4.2. Prices quoted shall be firm.

5.0 Mobilization Advance:

No mobilization advance shall be paid for the work, unless otherwise stipulated in tender papers for any individual works/ composite work.

6.0 Completeness of Tender:

All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender documents or not.

7.0 Works to be done by the contractor:

Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost: -

- (i) Cutting and making good all damages caused during installation and restoring the same to their original finish.
- (ii) Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.
- (iii) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/distribution gear items, cubicle switchboard etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.
- (iv) Testing and commissioning of completed installation.

- (v) Storage space for all equipment's, components and materials for the work

8.0 Storage and Custody of Materials:

The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the electrical installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space shall however be arranged by the department at site, if available.

The main contractor shall arrange for proper storage of the electrical fans and fittings at site and that double lock system shall be arranged for the fans and fittings after receipt at site until the time they are taken for installation. The contractor shall however be responsible for proper storage and safe custody of the same till their installation and handing over to the department.

9.0 Electric Power Supply and Water Supply:

Power and water supply will be arranged by the contractor at the site for installation and testing purpose. Contractor will take due care to ensure safety of electrical installation during execution of work.

10.0 Tools for handling and Erecting:

All tools and tackles required for handling of equipment's and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

11.0 Payment Terms: As per NIT

12.0 Co-ordination with other agencies:

The contractor shall co-ordinate with all other agencies involved in the building work so that the building work is not hampered due to delay in his work. Recessed conduit and other works, which directly affect the progress of building work, should be given priority.

12.1. Care of buildings:

Care shall be taken by the contractor to avoid damage to the building during execution of his part of the work. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove, at his costs, all unwanted and waste materials arising out of his work, from the site.

13.0 Structural Alterations to Buildings:

- (i) No structural member in the building shall be damaged/altered, without prior approval from the competent authority through the Engineer-in-charge.
- (ii) Structural provisions like openings, cutouts, if any, provided by the department for the work, shall be used. Where these required modifications or fresh provisions are required to be made, such contingent works shall be carried out by the contract at his cost.
- (iii) All such openings in floors provided by the department shall be closed by the contractor after installing the cables/conduits/rising mains etc. as the case may be, by any suitable means as approved by the Engineer-in-charge without any extra payment.
- (iv) All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost to the original architectural finish of the buildings.

14.0 Addition to an installation:

Any addition, temporary or permanent, to the existing electrical installation shall not be made without a properly worked out scheme/design by a qualified Electrical Engineer to ensure that such addition does not lead to overloading, safety violation of the existing system.

15.0 Drawings:

- i) After award of the work, the firm will be required to submit the drawings for the proposed work including layout plan, conduit routes, SLD, cable route plan etc. Work will be carried out as per the approved drawings
- ii) The work shall be carried out in accordance with the drawings and the tender documents and also in accordance with modification thereto from time to time as approved by the Engineer-in-charge.
- iii) All wiring diagrams shall be deemed to be 'Drawings' within the meaning of the term as used in Clause 11 of the conditions of contract (PWD 7). They shall indicate the main switch board, the distribution boards (with circuit numbers controlled by them), the runs of various mains and sub mains and the position of all points with their controls.
- iv) All circuits shall be indicated and numbered in the wiring diagram and the points shall be given the same number as the circuit to which they are electrically connected.

16.0 Conformity to IE act, IE Rules, and standards:

16.1. All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 amended up to date (Date of call of tender unless specified otherwise). List of rules of particular importance to electrical installations under these General Specifications is given in Appendix C for reference.

17.0 General requirements of components:

17.1. **Quality of material:** All materials and equipment's supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

18.0 Inspection of materials and equipment's:

18.1. Materials and equipment's to be used in the work shall be inspected by the departmental officers. Such inspection will be of following categories:

- (i) Inspection of materials / equipment's may be witnessed at the Manufacturer's premises in accordance with relevant BIS /Agreement Inspection Procedure.
- (ii) To receive materials at site with Manufacturer's Test Certificate(s)
- (iii) To inspect materials at the authorized dealer's go downs to ensure delivery of genuine materials at site.
- (iv) To receive materials after physical inspection at site.

18.2. Adequate care to ensure that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall ensure that:

- (i) Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.
 - (ii) As and when the order is placed for the material, rising main, other main items etc., its copy shall be endorsed to the CPWD Engineer-in-charge.
 - (iii) The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.
 - (iv) Inspection at factory or at go down of the manufacturer, as required, shall be arranged by the firm for a mutually agreed date.
 - (v) Delivery of material shall be taken up only with the consent of department, after clearance of the material.
 - (vi) Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.
- 18.3. Similarly, for fabricated equipment's, the contractor will first submit dimensional detailed drawings for approval before fabrication is taken up in the factory. Suitable stage inspection at factory also will be made to ensure proper use of materials, workmanship and quality control.

18.4. Inspection of material shall be carried out as per CPWD Quality Assurance Policy & Checklist for E&M Services issued vide OM No. 51(4)/CE(E)/CSQ/2016/293 (Hindi) dated 31/03/2016.

19.0 Ratings of components:

- 19.1. All components in a wiring installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installations in which they are used.
- 19.2. All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current, which will normally flow through them, without their respective ratings being exceeded.

20.0 Conformity to standards:

- 20.1. All components shall conform to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.
- 20.2. Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance.

21.0 Interchangeability:

Similar parts of all switches, lamp holders, distribution fuse boards, Switch gears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation.

22.0 Workmanship:

- 22.1. Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.

- 22.2. Proper supervision/skilled workmen: The contractor shall be a licensed electrical contractor of appropriate class suitable for execution of the electrical work. He shall engage suitably skilled/licensed workmen of various categories for execution of work supervised by supervisors / Engineer of appropriate qualification and experience to ensure proper execution of work. They will carry out instruction of Engineer-in-charge and other senior officers of the Department during the progress of work.
- 22.3. Use of quality materials: Only quality materials of reputed make as specified in the tender will be used in work.
- 22.4. Fabrication in reputed workshop: Switch boards and LT panels shall be fabricated in a factory/workshop having modern facilities like quality fabrication, seven tank process, powder/epoxy paint plant, proper testing facilities, manned by qualified technical personnel. These shall be as per make / item approved.

23.0 Testing:

All testes prescribed in this General Specification, to be done before, during and after installation, shall be carried out, and the test results shall be submitted to the Engineer-in-charge in prescribed Performa, forming part of the Completion Certificate.

24.0 Commissioning on completion:

After the work is completed, it shall be ensured that the installation is tested and commissioned.

25.0 Completion plan and completion certificate:

- 25.1. For all works completion certificate after completion of work as given in Appendix –E of CPWD Specification shall be submitted to the Engineer-in-charge.
- 25.2. Completion plan drawing with all installation marking – three copies set (floor wise).

25. INTERPRETING SPECIFICATIONS

In interpreting the specifications, the following order of decreasing importance shall be followed in case of contradictions:

- (a) Schedule of quantities
- (b) Technical specifications
- (c) Drawing (If any)
- (d) General Specifications
- (e) Relevant BIS or other international code in case BIS code is not available.

26. Dismantled material: -

- (i) Received from work shall be retained by the contractor and recovery shall be made from running bill as per schedule of Quantity
- (ii) Not covered under above shall be returned to the department and deposited to JE(E) store.

TECHNICAL SPECIFICATIONS FOR IEI WORK

1.0 General

Scope of work:

The specifications given below pertain to the internal electrical installation work and CPWD Specifications are to be followed.

2.0 Point wiring:

- 2.1 The wires used for the point wiring and power wiring shall be of 650 / 1100 Volts grade FRLS PVC insulated multi stranded copper conductor single core cables as per IS 694.
- 2.2 All mounting boxes for modular plate type accessories shall be of metallic construction and of the same make as that of the modular plate type switches and accessories. Boxes shall be 60 mm deep, minimum 1.2 mm thick GI sheet, having earthing studs, neutral looping connector. All the connections / termination of wire/ cable shall be done either by using suitable thimbles or by soldering the multistranded wires. Cover plate of all the modular boxes shall be of metallic construction.

3.1 Copper and aluminium cables

- 3.1.1. This specification covers the supply, installation, testing and commissioning of 1100 V grade cables.
- 3.1.2 The design, manufacture and performance of the cables should conform to the relevant IS.

4.0 Molded case circuit breakers

- 4.1 The MCCBs shall comprise single units of triple pole/four pole construction as specified, shall be rated for 415 V AC.
- 4.2 All live parts shall be totally enclosed and shrouded with a heat resistant moulded insulating material housing. Operating mechanism shall be quick make, quick break and trip free type.
- 4.3 The MCCB shall be provided with the following features in microprocessor release:
 - a) Inverse-time-current tripping characteristics under sustained overload.
 - b) Instantaneous tripping on short circuit
- 4.4 MCCBs shall be of current limiting type.
- 4.5 The rated service breaking capacity (I_{cs}) shall not be less than the ultimate short circuit breaking capacity (I_{cu})
- 4.6 Variable Thermal setting shall be provided in all MCCB s with thermal magnetic release.
- 4.7 All circuit breaker up to 250 amps rating shall be provided with thermal magnetic release and circuit breakers above 250 amps rating shall be provided with Microprocessor based release unless otherwise specified.

5.0 Additional Conditions:

5.1 Guarantee / Warrantee

The installation will be handed over to the department after necessary testing and commissioning. Warrantee for the other electrical fixtures shall be one (1) year. The equipment's or components, or any part thereof, so found defective during guarantee period shall be forthwith rectified/ repaired or replaced free of cost, to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

- 5.2 The contractor shall submit the relevant test certificates at the time of supply of equipment/Material.
- 5.3 The material should be in new conditions and not older than 6 months.

ADDITIONAL CONDITIONS FOR E.I & FAN WORKS

- 1- The work shall be carried out strictly in accordance with CPWD General Specifications for Internal Electrical Works 2023 & External Work-2023 and in accordance with Indian Electricity Rules, 1956, Indian Electricity Act, 2003 as amended up to date and as per instructions of the Engineer-in-Charge including as below and nothing will be paid extra.
- (a) All material shall be got approved from Engineer-in-Charge before use. One sample flat/Bay shall be made for approval of final location of switch boards/ fittings etc. and then only work shall be executed in other flats/bays.
- All damages done to the building during execution of Electrical work shall be the responsibility of the contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. Any expenditure incurred by the department in this condition shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final.
- (b) All hardware items such as screws, thimbles, G.I. wires etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned. All hardware materials such as nuts/bolts/screws/ washers etc. to be used in the work shall be zinc/cadmium plated iron.
- (c) CONDUIT LAYOUT shall be prepared by contractor and got approved before execution of work. In case contractor does not do so before start of work, recovery @ 2(two)% of tendered amount of I.E.I. works shall be made from the bill. Minimum No. of Junctions to be kept, & if required junctions to be kept underneath the fitting locations in corridor/rooms so that junctions are not visible after fittings are fixed/in position. Drop of conduit shall be well planned w.r.t. location of fitting/D.B. and criss crossing to be avoided. All chases in walls shall be cut using electrical chisels/cutters. For this purpose, electricity shall be arranged by contractor. In case contractor fails to do chase cutting by electrical chisels/cutters and resorts to manual methods, a recovery of Rs.100/- per point shall be made from contractor's bill.
- (d) Any conduit which is not to be wired by the contractor shall be provided with GI fish wire for wiring by some other agency subsequently. Nothing extra shall be paid for the same.
- Termination of multi-stranded conductors shall be done using crimping type thimbles at both the ends. Nothing extra shall be paid for the same.
- (e) All metal boxes to be applied primer and painted, then only should be installed else recovery @Rs.50/- per point should be made from contractor's bill. Boxes shall have socket arrangement for tightening screws, instead of simple holes in M.S. sheet. Boxes shall be again painted at the time of wiring.
- (f) For Submain Wiring, Colour Code for different phases and Neutral (R.Y.B. black) to be maintained. While circuit wiring, wiring for fan point, wiring for light point shall be done with different colours for easy identification. Wiring for neutral shall be done with black colour and all connections to fans & fittings wherever visible shall be made with white PVC insulated copper wire or wherever cover sleeve may be provided. At Switch board, Switch shall be fixed in a logical manner w.r.t. fittings layout.
- (g) All connections to MCB's shall be made using thimble/lugs.
- All DB's i/c incoming & outgoing MCB's shall be suitably numbered with PAINT for location/circuits. DB shall be fixed in recess suitably (30 mm. approx. projected from un-plastered wall) to ease opening of door. Top of DB to match with door frame height as per site conditions.
- (h) Phenolic laminated sheet shall be of white colour, and shall be filed/rounded at edges and of minimum 3mm thick.
- (i) All fittings and fans should be properly earthed through the protective conductor.
- Provision of earth bars in main boards, earth terminal block in DB's & earth studs in all metal boxes shall be made, connection to this stud shall be crimped.
- A clamp type termination should be made in the termination of earth strips (where provided) to pipe electrodes to provide surface type contact.

- (j) The earthing shall be carried out in the presence of the Engineer-in-charge or his authorized representative.
 - (k) The size at switch box for providing Modular Plate type Switch/Sockets shall be properly settled to take care of all necessary switches/screws/fan regulators. Blanking plate if required shall also be provided at no extra cost.
 - (l) For point wiring in steel conduit all modular type switches/sockets/telephone outlets/T.V. outlets shall be of only one make.
 - (m) Whenever supply items like fans & fittings etc. are also included in the Schedule of work, such items shall be executed only after completion of at least 75% of the wiring items.
 - (n) The contractor shall make his own arrangement at his own cost for electrical/ general tools and plants required for the work.
 - (o) All LED light fittings should have minimum 5year warranty, warranty certificate to be Submitted by agency on OEM letter head regarding this.
- 2- The work shall be carried out according to approved drawings/details which shall be subsequently issued to the successful tenderer for execution of work and as per instructions of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.
- The work shall be carried out in engineering like manner. The bad workmanship will not be accepted and defects shall be rectified at contractor's cost to the satisfaction of the Engineer-in-Charge. The programmed of electrical works is to be coordinated in accordance with the building work and no claim for idle labor will stipulate in the tender, electrical work shall have to be completed along with completion of civil work.
- All the debris of the electrical works should be removed and the site should be cleared by the contractor immediately after the accruing of debris. Similarly, any rejected material should be immediately cleared off from the site by the contractor.
- Watch and ward of the material/equipment shall be the responsibility of the contractor till handing over of installation to the department.
- The contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.
- 3- The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department. However, if there is any delay in construction from the department side, the installation may be taken over in parts, but the decision on the same shall rest with Engineer-in-Charge which shall be a binding on the contractor.
- Some of the items of work, if already executed: on that case the successful tenderer shall have to use these items for completing the work. For wiring, the existing conduit wherever required shall be used by the contractor. The recovery will be made for these items as accepted rate of similar items.
- 4- The secured advance as applicable shall be allowed.
- 5- Test certificate for the work carried out shall also be submitted, failing which recovery @0.5% of tendered amount & maximum of Rs.75000/- shall be made from final bill.
- 6- Panels: Drawing of all types of Elects. panel board shall be submitted for approval within 60 days from award of work and fabrication to be taken up only after approval of such drawing. Before painting proper surface, treatment shall be done and then powder coated. These shall be offered for inspection during fabrication.
- 7- Quantities indicated in Schedule of work are only tentative, contractor shall consult AE-in-Charge before procurement. Payment shall be made only for the quantities actually executed and measured.
- 8- Time Period: Contractor has to plan his activities, so that electrical work is to be carried out in close co-ordination with CIVIL work and in no case CIVIL work be delayed because of delay in electrical work and the work has to be completed accordingly.
- 9- The makes for items shall be as per list attached.
- 10- Storage: -Responsibility for storage space for execution of work shall be of main contractor.

- 11- **Power & Water Supply:** - Responsibility for supply of power & water for execution of work shall be of main contractor.
- 12- Material to be used in the work shall be strictly as per list of make attached. The material in required quantity to be used in the work shall be got approved along with necessary technical data sheet from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not as per specifications.
- 13- Contractor shall preserve the copies of invoices, test certificates, gate passes etc. to prove the genuineness of material/purchases. The responsibility of procurement, genuine material of specialized works shall rest with the contractor.
- 14- Contractor is advised to visit site before quoting rates for determining site conditions. No claim or argument shall be entertained in this regard at later stage.
- 15- Required repairing and finishing work is to be done by agency after installation of split air conditioners.
- 16- No inspection outside the country is permissible if required so the same will be deemed to be waived off and necessary test reports shall be submitted before the dispatch of equipment.

Additional Conditions for Fire Fighting & fire alarm System work

- 1- **Specification:** -The work shall be executed as per CPWD General Specification for wet riser sprinkler system Part-V-2020 direction of Engineer-in-Charge and as per NBC 2016 norms. The additional specifications are to be read with above and in case of any variations, specifications given along with the tender shall apply.
- 2- **Location:** -The work is to be executed at, SIB, Etawah Uttar Pradesh. The contractor is advised to visit the site before submission of their tender.
- 3- **Approval from CFO:** -The Contractor shall be required to obtain NOC from Chief Fire Officer, Agra and work shall be deemed to be completed only after receiving NOC from CFO & rectification if any. Statutory fee if any shall be paid by department. However, all liaison Ing work / arranging inspection of CFO shall be the responsibility of contractor.
- 4- The material in required quantity to be used in the work shall be got approved from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not as per specifications.
5. Contractor shall preserve the copies of invoices, test certificates, gate passes etc. to prove the genuineness of material/purchases. The responsibility of procurement, genuine material of specialized works shall rest with the contractor.
6. No inspection outside the country is permissible if required so the same will be deemed to be waived off and necessary test reports shall be submitted before the dispatch of equipment.

LIST OF PREFERRED MAKES

Note- The contractor shall propose minimum two makes with technical datasheet/ samples of each item to engineer-in-charge to get the approval before use the material at site.

Sl.	Details of Materials/ Equipment	Manufacturer's Name
	I.E.I, MCBDB & MCB, Cables and Wires	
1.	MCB, Isolator, Industrial plug Socket, RCCB, RCBO's	Schneider Electric ACTI-9(N)/ Legrand (DX3)/ Hager/ L&T(Exora)/ ABB (SB200M)/Siemens (Betaguard)/HPL
2.	MCBDB & Loose Wire Box	Schneider Electric/ Legrand/ Hager /L&T/ ABB (Elegance)/ Siemens
3.	Automatic Transfer Switch (ATS)	Asco/Russel/Socomac/Hager/ABB/ L&T/ C&S/HPL
4.	FRLS PVC insulated copper conductor single/multi core flexible wires, LT cables. (ISI marked) Armoured/Unarmoured Telephone cable, Coaxial Cable/CAT-6 LAN cable/TV cable	Finolex/ RR Kabel/ KEI/ Havells/ Polycab/AKG/HPL/BATRA HENLAY/GRANDLAY
5.	MS Conduit (ISI marked) with heavy duty MS conduit pipe accessories	BEC/AKG/Precision/Bharat/MK pipe/ Steel Kraft (Note: The make of accessories shall be same that of conduit pipe and will comply to IS/4768 part 2 2003 amended up to date)
6.	PVC conduit (ISI marked) with heavy duty PVC conduit pipe accessories	Norpack/BEC/Polypack/Precision/Astral
7.	Modular switches, socket/ telephone socket/ cable TV socket/ data outlet socket/ fan regulator/ GI boxes etc. (Wiring accessories)/ regulators etc.	Wipro- North West NOWA / Legrand-Myrius Nextgen/ Schneider – Opale/ Achor-Panasonic Europa / Havells – Crabtree Athena
8.	Selector Switch & Toggle Switch	Salzer (L&T)/ Siemens/ Kaycee/ABB
9.	PVC Trunking	MK/ Schneider Electric/ Legrand/Hager
10.	GI Pipe	Tata/ Jindal (Hissar)/ Prakash Surya/APL Apollo/SAIL
11.	Paints	ICI/ Asian/ Berger/ nerolac
12.	Terminal Blocks & Connectors	Elmax/Wago/Hensel/Connectwell
13.	Phenolic Laminated Sheet/ Bakelite sheet	Hylam/ Formica (P-I Grade)/ Mylam/Greenlam
14.	Motor Starter	Havells / Schneider Electric/ Legrand/Hager/Subtech
15.	Electrical Panels	Neptune/Advance Panel/ASPL/Tricolite/ADLAC/Subtech/RP control/precision control system

16.	MCCB	Schneider Electric/ Legrand / Hager/ L&T / ABB /Seimens /HPL
	Fans & Fittings	
17.	LED Fittings	Wipro/ Phillips/ Havells/Crompton
18.	Ceiling Fan / Wall fan /Exhaust fan / Fresh Air Fan	Havells/Crompton greaves/ Almonard/Orient/ Atomberg
19.	Wall Bracket Fitting	Havells/ Crompton/Phillips/Wipro (commercial segment)
20.	Geysers	Racold/CG/Havells/Usha/Venus/AO Smith/Jaquar
	Compound Lighting	
21.	LED post Top fitting	Havells/ Phillips/Wipro (commercial segment)
22.	LED Street/Compound/Flood light fitting	Havells/ Phillips/Wipro (commercial segment)
23.	LED Compound lights with inbuilt Solar panel and controller	Havells/ Phillips/Wipro (commercial segment)
24.	Hot Dipped Galvanized Octagonal Pole (Factory finish)	Wipro/ Phillips/Crompton Greaves/Bajaj/Utkarsh/Halonix/ twinkle/ Lustre
25.	Polycarbonate Junction Box/ SMC Box/ Enclosure	Hensel/ Spelsberg/ Naptune-Bals/Sintex
	Air Conditioning System	
26.	VRV/VRF	O-General/Mitsubishi heavy/Mitsubishi Electric/Blue Star/ Daikin/Carrier/ Voltas/Hitachi
27.	Indoor/Outdoor Unit	O-General/Mitsubishi heavy/Mitsubishi Electric/Blue Star/ Daikin/ Panasonic/Voltas/Lloyd/LG
28.	Copper Pipe	Total line/Mandev/Rajko/Diamond/Star
29.	Nitrile rubber insulation	A-fex/k-flex/Vido flex/Euro/Batex/Armacell
30.	CPVC pipe	Ashirwad/Supreme/Astral/Prayag
31.	GSS Sheet (For site fabricated duct)	SAIL/Jindal/Tata
32.	Aluminium Sheet	Hindalco/Balco/Nalco
33.	Flexible duct/Company fabricated duct	Waves/Zeco/Ductofab/Airflow/Caryaire/ Atco
34.	Supply/Return Grill/diffuser	Airflow/Trox/Dynacraft
	DG Set	
35.	Diesel Operated Generating Engine	Cummins India/ Caterpillar/ KOEL/ Volvo Penta/Perkins/ Ashok Leyland / Eicher/Mahindra /Captiva/ Sudhir/Kirloskar
36.	Alternator	Stamford/ lerroy sommer/ kirloskar electric/ caterpillar/ Crompton
37.	DG Set Canopy/ Enclosure & AMF Panel	As per OEM/OEA of respective DG set manufacturer
38.	Alarm Annunciator	Advani Oralikon/ L&T/ Minilec
	CCTV System/LAN System	
39.	CCTV Cameras (Bullet / Dome)	Commercial series of Honeywell/

		Pelco/Axis/Bosch/Panasonic
40.	Network Video Recorder work station / Hard disk array	Commercial series of Honeywell/ Pelco/Axis/Bosch/Panasonic
41.	CAT 6 cable, Wires & Fiber Optic cable OFC Cable	Derwiser /3C3 / Siemon/ Systimax / D Link/ Molex
42.	Fiber/CAT 6 Patch Cord	Derwiser /3C3 / Siemon/ Systimax / D Link / Molex
43.	HD LED TV Display	Panasonic / LG/ Sony/ Samsung/Hyundai
44.	24 Port LIU unloaded, OFC patch Panel	Siemon/Systimax/D-Link/TP Link/ Molex
45.	FRLS Wire	Havells/KEI/Polycab/RR Kabel
46.	G.I. Box	Legrand / MK/Hager/L&T/ABB
47.	PVC Conduit (ISI Marked)	MK /AKG/BEC /Polypack/ BEC/ Norpack /Polycab/ Astral/ Precision
48.	Media Convertor	Derwiser /3C3 / Siemon/ Systimax / D Link
49.	POE Switch/L2 Switch	Juniper /ALE/ Dlink / TP Link/Cisco/ Arista/ HPE
50.	CCTV Power Supply	Juniper /ALE/ Dlink / TP Link/Cisco/ Arista/ HPE
51.	Wireless Indoor Access Point	Cisco, Ruckus, TP-Link (Omada)
52.	Wall rack	Valrack / Netrack/D-Link
	Fire Fighting Equipment	
53.	MS pipe	Tata/ Jindal (Hisar)/Parkash surya
54.	GI Pipe	Tata/ Jindal (Hisar)/Parkash surya
55.	Forged Steel Fittings/flanges	Johnsons Industries/ VS Forge/ JK Forging/ Trueforge
56.	Forged Steel Fittings and flanges (for welding joints)	VS Forge/Rohini/Kanwal forge/jhonson/ True forge
57.	Pipe hangers	Chilli/Hilti/GMGR/ wurth
58.	Gun metal/ Brass Valve (ISI marked) / (Full way Globe valve/Non return valve)	Sant/ Leader/ Advance/ Zoloto/ Kirloskar
59.	Butterfly/Sluice/Single Headed hydrant valve (ISI marked)	Audco/ Sant/ Leader/ Advance/ Zoloto/ Kirloskar
60.	Check Value (ISI marked)	Audco/ Sant/ Leader/ Advance/ Zoloto/ Kirloskar
61.	Foot Valve (Cast Iron / Gun Metal)	Audco/ Sant/ Leader/ Advance/ Zoloto/ Kirloskar
62.	Y- Type Strainer/Orifice plate	Audco/ Sant/ Leader/ Zoloto/ Kirloskar
63.	Fire/ Sprinkler Pump/ Terrace Fire Pump/Jockey Pump	Kirloskar/KSB/ Grundfos/ Wilo Mather & Platt /Crompton
64.	Electrical Motor	ABB/ Siemens/ Kirloskar/ Grundfos/ Crompton/ NGEF/ Crompton
65.	Diesel Engine for fire pump	Cummins India/Ashok Leyland/ KOEL/ Greaves/Mahindra

66.	Couplings (Type-Type)	Lovejoy/ Fenner/ Dunlop
67.	Anti Vibration Mounting	Kanwal Industrial Corporation/ Dunlop/ GERB/ Resistoflex
68.	Pressure Switch, (ISI marked)	System Sensor/Indfoss/Danfoss/Switzer/Honeywell Siemens
69.	Pressure Guage (ISI marked)	H Guru/ Fiebig/ Dwyer
70.	Double/Single Headed Landing Value (ISI marked)	Minimax/ New Age/Omex/ Andex/Superex
71.	Male Female Fire Hose Coupling (SS 304) (ISI marked)	Minimax/ New Age/Omex/ Andex/Superex
72.	First Aid Hose Drum/ Fire Hose reels/ Shut off Nozzle (Gunmetal/ ABS) (ISI marked)	Minimax/ New Age /Omex/ Andex/Superex
73.	SS 304/ Gun metal Branch Pipe & Nozzle (ISI marked)	Minimax/ New Age /Omex/ Andex/Superex
74.	Fireman Axe	Minimax/ New Age /Omex/ Andex/Superex
75.	Water Flow Switch (FM/UL listed)	System Sensor/ Rapid Control/ Potter/ Switzer
76.	Rust preventive polymeric 4mm thick tape for pipes directly buried in ground pipe protection pypkoat (AW4) wrapping (ISI marked)	Pypcoat/ Marphalt/ Rustech/ Safex
77.	Level controller & indicator (water) (ISI marked)	Auto Pump/ Cirrus Engineering/ Techtrol
78.	Fire brigade inlet connection (ISI marked)	Minimax/ New Age / Safeguard /Omex/ Eversafe/ Superex
79.	Thermoplastic pipe for first aid hose reel (ISI marked)	Minimax/ New Age /Omex/ Andex/Superex
80.	Fire Sealant	Promat/ Birla 3M/ Hilti
81.	Overload relays	Schneider electric / Larsen & Toubro/ Siemens/ C&S / ABB
82.	Power/ Aux. Contractor 3 /4 pole	Schneider electric / Legrand/Hager/ L&T/ABB/ Seimens/ C&S/BCH
83.	LED Type Indicating lamps/ Push Button	Schneider electric / L&T/Siemens/C&S/ABB
84.	LT jointing Kit/Termination	Raychem/ denson/ cap seal/ Safekei/ 3M
85.	RRL hose pipe, hose real (ISI Marked)	Minimax/ New Age /Omex/ Andex/Superex
86.	Dry Battery	Exide/ Amar raja/ HBL/ Pulse/Amco
87.	Battery Charger	Statcon/Amar raja/CDC/AE/Expofyn/Thycon India
88.	Epoxy Paint	ICI/ Asian/Berger/ Nerolac
89.	Air release Valve	Rb/ Tbs/Cimbrio/Zoloto
90.	Analogue/digital Measuring Instruments (Voltmeter/Ammeter/ Energy Meter/ KW/PF /Multi	AE/Rishab/L&T/C&S/Conzerve

	Function Meter)	
91.	Cable gland and Lugs	Comet/Dowells/Hax brass(Copper Alloy India)/Jainson/Action
92.	Solenoid Valve/Spray nozzle	Perker / HD / Tyco/Emersion
93.	Sprinkler	HD / Tyco/Reliable /Wormald/Viking
94.	Sprinkler head/Water Curtain Nozzle	Tyco/Viking/Omex/Newage/Lifeguard
95.	Steel Flexible Extension	Omex/Newage/Tyco /Lifeguard
96.	Vibration Eliminator	Resistoflex/D waren/ Kanwal
97.	Welding Electrodes	Advani/ESAB/ L&T
98.	Deluge Valve	Tyco/Viking/HD
99.	Cast Iron Valve	Kirloskar/Kartar/kalpana/Joloto/Audco/Advance
100.	Fire Panel	Neptune/Advance Panel/ASPL/Tricolite/ADLAC/Subtech
101.	Fire survival cables	Finolex/ RR Kabel/ KEI/ Havells/ Polycab/AKG/HPL/BATRA HENLAY
	Water Supply Pump Sets	
102.	Mono Submersible Pump Set	KSB/CG/Kirloskar/Grundfoss/CRI
103.	Submersible Pump Set	KSB/CG/Kirloskar/Grundfoss/CRI
104.	Motor Starter	Legrand / Havells / HPL / C&S / ABB/ L&T/ Sub tech
105.	GI pipe	Tata/Jindal Hisar/Prakash surya
106.	Sluice Valve / Check Valve/ Butterfly valve/ Non-Return Valve/Gate Valve	Kirloskar/Sant/ Leader/ zoloto/Audco/Advance
107.	Submersible Cable	Finolex/RR Kabel/ KEI/ Havells/Polycab
	Lift	
108.	Lift	OTIS/Kone/Schindler/Mitsubishi
109.	LAN Switch, SFP Module and I/O	FORTINET/SOPHOS/SONICWALL/CISCO/ JUNIPER/ ARUBA
110.	Any other material	With prior approval of engineer in charge
	Audio Visual System	
111.	LED Video call	PLANER /NEC/HYUNDAI/CLARILUS
112.	Speaker	MARTIN AUDIO /HARMAN/BOSE/ LACCOUSTIC/ AUDAC
113.	Power Amplifier	POWER SOFT/AUDAC/HARMAN/ LABGRUPPEN
114.	Digital Signal processor (DSP)	SYMMATRIX / XILICA/CLERONE/LABGROPEN/ HARMAN/
115.	Microphone	SENNHEISER/CLARILUS/SHURE/HARMAN/

116.	Receiver	SENNHEISER/CLARILUS/SHURE/HARMAN/
117.	PTZ Camera	SONY/CLARILUS/PANASONIC
118.	Matrix switcher	CLARILUS / LIGHTWARE/ORDAIN/ BLACKMAGIC/
119.	Podium	CLARILUS / LIGHTWARE/ORDAIN/
120.	Speaker Cable	TASKER/BELDEN/KRYSTAL/HAVELLS
121.	CAT-6 Cable	FINOLEX/ BELDEN /COMMSCOPE /LEGRAND/ DERWISER/
122.	HDMI Cable	LINETEK/MANHATTAN/TASKER/COMMSCOPE
	CSS	
123.	CSS	SIEMENS/VOLTAMP/ABB/POWERSTAR/TIRUTECH/ As approved by Engineer-in-charge.

Note: (1) The firm has to ensure that equipment manufacturer comes under definition of local manufacturers as per Govt. of India, Policy of Public Procurement (Preference to make in India) order, 2017 (PPM-MII order 2017) issued by Department of Industrial Policy and Promotion. Only products conforming to above policy shall be allowed to be used in the work.

(2) Any item which is in preferred make shall be taken as per conformity of BOQ and prior approval of Engineer-in-charge. In case, the item is not covered in make list then preference to ISI make item shall be given with the approval of Engineer-in-charge.

Schedule of Quantity (Electrical work)

Schedule of Quantity

Name Of Work : - Construction of Office Building and Residential Quarters for SIB, Etawah (U.P.)

SH: Electrical Work

S. No.	Description of item	Qty.	Rate	Unit	Amount
	SH - I EI Works				
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
1.1	Group A	54	1,440	Pt.	77,760.00
1.2	Group B	47	1,684	Pt.	79,148.00
1.3	Group C	188	2,101	Pt.	3,94,988.00
2	Wiring for twin control light point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS/HFFR PVC insulated copper conductor single core cable etc .as required.	8	2,242	Pt.	17,936.00
3	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit, and earthing the point with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.	18	1,246	Pt.	22,428.00
4	Wiring for light/ power plug with 2X4 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	1240	480	Mtr.	5,95,200.00

5	Wiring for light/ power plug with 4X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 2 Nos. 4 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	1025	724	Mtr.	7,42,100.00
6	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
6.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	250	370	Mtr.	92,500.00
6.2	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	60	1,001	Mtr.	60,060.00
6.3	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	60	1,253	Mtr.	75,180.00
6.4	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	60	1,760	Mtr.	1,05,600.00
7	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
7.1	6 x 1.5 sq. mm	85	195	Mtr.	16,575.00
8	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
8.1	20 mm	100	254	Mtr.	25,400.00
	25 mm	85	289	Mtr.	24,565.00
9	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
9.1	Telephone socket outlet	13	168	Each	2,184.00
10	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	16	402	Each	6,432.00
11	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.				

11.1	1 or 2 Module (75mmX75mm)	50	354	Each	17,700.00
12	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	51	545	Each	27,795.00
13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	108	659	Each	71,172.00
14	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required.	37	757	Each	28,009.00
15	Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	25	807	Each	20,175.00
16	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, Ics=100% Icu and Operational Voltage 690V etc. as required.				
16.1	100 A, 30KA, FPMCCB (For SMDB)	1	8,127	Each	8,127.00
16.2	63 A, 25KA, TPMCCB (For SMDB)	9	7,401	Each	66,609.00
16.3	40 A, 25KA TPMCCB (For SMDB & VTPN DB)	7	7,659	Each	53,613.00
17	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
17.1	4 way (4 + 12), Double door	5	4,377	Each	21,885.00
17.2	6 way (4 + 18), Double door	3	5,299	Each	15,897.00
17.3	8 way (4 + 24), Double door	5	6,337	Each	31,685.00

18	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required . (For 3 Phase UPS outgoing)				
18.1	4 way (4 + 12), Double door	1	7,951	Each	7,951.00
19	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
19.1	Single pole	234	285	Each	66,690.00
19.2	Triple pole(for VTPN DB)	4	1,070	Each	4,280.00
20	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
20.1	40 A (For Light DB)	8	1,049	Each	8,392.00
20.2	63 A (For Power DB)	5	1,115	Each	5,575.00
21	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc.as required.				
21.1	4 way (4 + 12), Double door	5	1,177	Each	5,885.00
21.2	6 way (4 + 18), Double door	3	1,223	Each	3,669.00
21.3	8 way (4 + 24), Double door	5	1,448	Each	7,240.00
22	Supplying and fixing Cable End Box (Loose Wire Box) suitable for triple pole and neutral, sheet steel, Vertical MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc. as required.	1	1,271	Each	1,271.00
	Earthing				
23	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	9	7,658	Each	68,922.00

24	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	2	15,004	Each	30,008.00
25	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	10	1,638	Mtr.	16,380.00
26	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	35	755	Mtr.	26,425.00
27	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	10	1,246	Mtr.	12,460.00
28	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	20	287	Mtr.	5,740.00
	Lightning Conductor				
29	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	2	609	Each	1,218.00
30	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	78	148	Mtr.	11,544.00
31	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	25	238	Mtr.	5,950.00
32	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.	2	140	Each	280.00
	Fan and LED fittings				

33	SITC of LED Recessed /surface Down lighter (Round) SMD type of following body material with PMMA and prismatic diffuser and construction as per IS : 10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, freq 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P. F.≥0.95, IP20, CRI >80 , UGR (Unified Glare Rating) < 19, Flicker free (flicker should be below 5 %), life time (LED,Driver & electrical circuitary), life time of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends , CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Color Matching) <3,Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. OEM must have its own in house NABL lab setup for all testing facilities for LED fixtures.				
	"complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted.. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). (Powder coated die cast /Extruded aluminium Body including trim .)				
33.1	12-15 watt	62	715	Each	44,330.00
33.2	18 watt	65	920	Each	59,800.00

34	SITC of Panel light 2x2 ft., of following body material and construction as per IS : 10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 0C to 40 0C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10% , P. F.≥0.95, IP20, CRI >80, UGR (Unified Glare Rating) < 19, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with, 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching)<3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).(Powder coated die cast /Extruded aluminium Body (Thickness > 1.20 mm))				
34.1	36 Watt	22	2,508	Each	55,176.00

35	SITC of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85% ,Operating voltage AC 140-270 Volt, freq 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P. F.≥0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitary), of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends, 5700°K/6500°K (As per ANSI Bin), SDCM <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard and trade mark certificate (T.C.). Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
	Powder coated diecast /Extruded aluminium Body (Thickness > 1.20 mm)	14	681	Each	9,534.00

36	SITC of LED surface mounted Mirror light of Extruded aluminium housing and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, freq 50/60 hz, Operating temp range -5 deg to 40 deg centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P. F.≥0.95, IP20, CRI >80 , Flicker free (flicker should be below 5 %), life time (LED,Driver & electrical circuitary), of minimum 50000 Burning Hours with , 70% of initial Lumen maintained till life ends,CCT 6500°K , SDCM(Standard Deviation Color Matching) <3, System lumen efficacy minimum 100 lm/Watt, min. lumens output 1200 lumen. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted with Minimum 5 year OEM warranty. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required.	13	624	Each	8,112.00
37	SITC of decorative wall bracket fitting having B22 base cap, round shape, golden white housing with white diffuser, diffuser material polycarbonate, IP20, suitable for LED bulb including connection etc complete as required.	25	860	Each	21,500.00
38	SITC of 10 watt LED Bulkhead, polycarbonate housing with diffuser; minimum IP65 Protection; CRI > 80; THD <10%; System efficacy- minimum 100 lm/W at temp 0 to +45deg. C and humidity 10% to 90%; System life time (Burning Hour with driver)- 50000 hours @ L70 as per LM 70 and testing as per LM 80; Driver voltage- 220-240V; Power factor >0.9; Driver Efficiency- > 85%; Surge protection- (L-N) 1KV, (E-L/N) 2 KV; CCT-3000-6500K as approved by Engineer in charge; Minimum 5 year OEM warranty, complete in all respect i/c connections with 1.5 sq mm FRLS, PVC insulated copper conductor single core cable etc complete as required.	10	1,753	Each	17,530.00

39	Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, suitable for operation with regulator for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 0C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC supply, Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required.				
39.1	1200mm, service value ≥ 6.0 CM/Min/Watt, air delivery 210 CM/Min (Minimum)	16	2,695	Each	43,120.00
40	SITC of High speed 400 mm three blade (White) Wall Fan alongwith approx 1280 RPM Motor speed with oscillating motion, remote for speed & oscillation On-Off suitable for operation single phase 220 V, 50 Hz AC supply etc with 3 x 1.5 Sq. mm. FRLS PVC insulated copper conductor, single core cable including providing & fixing phenolic laminated sheet cover on the fan box etc. as reqd.	28	4,177	Each	1,16,956.00
41	Supplying, installation, testing and commissioning of six blade 250 mm fresh air fan complete with plastic louvers guard, plastic body & blades etc. in the existing opening i/c connection with 1.5 sqmm FRLS PVC insulated copper conductor single core cable suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc. complete as required.	13	1,770	Each	23,010.00
42	SITC of 5 Star Electric Geyser operating voltage 230-240 v, wattage 2000 W, with heating and power indicator , Automatic overheat protection with fire retardant cable , Rust resistant and splashproof with IPX2 powder coated Metal body with polymer coated tank and nickel coated heavy copper heating element including mounting fastener and pipe etc as required.	8	13,905	Each	1,11,240.00
	LT Panels/SMDBs				

43	Fabrication , supplying , installation, testing & commissioning of wall mount indoor type compartmentalized metering panel made out of 2 mm thick CRCA sheet of suitable size having 300mm deep with 4 strip Al. Bus bar of 100 Amp capacity high conductivity duly insulated having locking arrangement, removable gland plates of 3mm thick for incoming / outgoing cables, neutral link, earthing stud, powder coated with seven tank process , having 3 nos. front openable compartmentalised metering cubicles and 3 mm thick bakelite sheet for meter mounting and din channel for MCB mounting , see through glass with suitable size hole & supplying & fixing following switch gears with suitable terminal spreaders there in i/c flexible copper connections from bus bars upto to metering compartment, connections, inter connection, earthing etc complete as reqd. (below stairs for Quarters) a) 63 Amp, 25 kA 4 pole MCCB Ics=100% Icu)- 1 no. b) 32 Amps TP MCB 10 kA C Curve - 03 Nos. c) Indication lights (RYB) 230 V AC -04 set.(14 no) d) 3Phase digital meter - 03 Nos	1	75,415	Each	75,415.00
44	Supplying and fixing of Sub Main Distribution Board, MCCB Distribution Board, 415 Volts, on Surface/Recess suitable for 100 Amp -01 Nos TP MCCB as incomer and 8 outgoing of (63/40 Amp - 08 Nos TPMCCBs) complete with bottom cabling box, mounting base, side cabling boxes, interconnection, powder painted including earthing terminal etc. as required. (For essential and non essential supply)				
44.1	8 way SMDB	2	1,19,043	Each	2,38,086.00
	Total of SH - I EI Works				38,14,412.00
	SH - II Outdoor lighting				
45	SITC of 40 watt Decorative LED Post top lantern with built in driver made of aluminium housing with twin arms are provided to support the housing, PC Diffuser, minimum IP66 Protection; CRI > 80; THD <10%; System efficacy- minimum 100 lm/W at temp 0 to +45deg. C				

	and humidity 10% to 90%; System life time (Burning Hour with driver)- 50000 hours @ L70 as per LM 70 and testing as per LM 80; Driver voltage- 220-240V; Power factor >0.9; Driver Efficiency- >_85%; Surge protection- (L-N) 1KV, (E-L/N) 2 KV; CCT- 3000 K as approved by Engineer in charge; Minimum 5 year OEM warranty, complete in all respect i/c connections with 3C x1.5 sq.mm PVC sheathed copper cable upto connector in pole etc complete as required.	2	18,302	Each	36,604.00
46	SITC of 9-12 Watt, LED Bollard light fitting made of extruded aluminum profile housing powder coated with dia cast aluminum base, UV protected frosted lowglare polycarbonate diffuser with built in driver, THD <= 10%, PF >= 0.9, surge protection inbuilt 4 KV, CRI > 70, CCT = 3000 K, Height = 800 mm/1000mm, 180 mm overall dia, IP 65 & IK10 protection in cylindrical shape, on existing concrete foundation, suitable for operation as 230-240 Volt, 50 Hz AC supply i/c 4 pole connector & connection with 1.5 sqmm 3 core cable etc complete as required.	12	7,869	Each	94,428.00
47	Providing and casting of cement concrete foundation of suitable shape and size 300X300X750mm depth 1:3:6 (1 cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size, including providing and fixing 3 Nos. M10 J- bolts suitable for mounting of existing bollard, 1 No. 40mm dia DWC HDPE pipe for cable incoming and outgoing etc complete as required.	12	1,148	Each	13,776.00

48	SITC of Flood Light, powder coated pressure die cast aluminium body with built in or separate driver as per the requirement with Driver efficiency >85%, Input voltage: Input voltage: 140-270 Volt AC, freq 50/60 hz, Operating temp range -5 deg to 50 deg centigrade, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%,THD < 10% as per IEC 61000-3-2 , P. F.≥0.95, IP-66,IK-10, CRI >70, under voltage and over voltage protection,EMI-EMC as per CISPR -15, lenses for beam angle 30 deg-120deg as per the application and the project requirement deg., suitable tilt able fitting, life time (LED,Driver & electrical circuitary) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 5700°K /6500°K (As per ANSI Bin) ,SDCM <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy 105 <120 lm/Watt output .LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted.(Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
48.1	70 Watt	6	2,114	Each	12,684.00
49	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with two numbers GI Suspenders i/c base of suitable size GI angle, GI bolts & nuts, fastner etc as required.				
49.1	150 mm width X 50 mm depth X 1.6 mm thickness	90	803	Mtr.	72,270.00

50	Supply of following sizes & core XLPE insulated, PVC outer sheathed, armoured with galvanized round steel wire or steel strip with stranded aluminum conductor cable suitable for rated voltage of 1.1 KV grade ISI marked conforming to IS:7098(Part.1)-1988 with amended upto date of following sizes as required.				
50.1	4Cx10 sqmm(For St light, Floodlight & bollard)	275	442	Mtr.	1,21,550.00
50.2	3.5X35 sqmm(Lift)	20	682	Mtr.	13,640.00
50.3	3.5X70 Sqmm (For main incomer from meter)	40	1,239	Mtr.	49,560.00
51	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	315	50	Mtr.	15,750.00
52	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				
52.1	Upto 35 sq. mm	115	47	Mtr.	5,405.00
53	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
53.1	Upto 35 sq. mm	175	53	Mtr.	9,275.00
54	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
54.1	4 X 10 sq. mm (25mm)	12	325	Each	3,900.00
54.2	3.5 X 35 Sqmm (32mm)	2	437	Each	874.00
54.3	3.5 X 70 Sqmm (38mm)	1	542	Each	542.00
55	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.				

55.1	63 mm dia (OD-63 mm & ID-51 mm nominal)	150	289	Mtr.	43,350.00
56	Supplying and fixing of weather proof SMC boxes of size 168 mm x 253 mm x 115 mm with transparent lid with rubber gasket having 2 no. SP MCB 6 amp / 10 KA , 1 no. Epoxy connector 4 pole, 1 no Din bar i/c fixing with 2 Nos MS clamp on pole connection interconnection etc. as reqd.	6	2,927	Each	17,562.00
57	SITC of St light control panel 10 KVA, 415V, 3-phase for Auto operation for st lightning, Outdoor type rust proof fabricated panel box made out of 16 SWG GPSP sheet attractively powder coated, sloping canopy, locking arrangement, dust & weather proof, & should confirm IP-65, enclosure must be theft proof locking arrangement. Incomer consist of 63 Amp. TPN MCB -1 no along with 50 Amp. Three Pole 24 V DC operated Pre magnetic type contactor - 1 no. controlled by microprocessor-based controller with timer. The control panel must have control accessories like Timer switch with all essential controls- 1 no, Auto/manual Selector Switch -1 no & R Y B Led Indications. The Control panel must have outgoing 25 Amp. Single Pole - 4 no's along with insulated Bus bars with heat shrinkable PVC sleeved complete with control wiring, name plate, danger plate etc. and compartments with hinged door and its accessories, bolted door etc. complete as required.	2	32,800	Each	65,600.00
58	Design, fabrication, supplying and installation of illuminated LED display sign board of sizes suitable for mounting on angle iron frame as per approved design with the following specifications. a) Board frame shall be made of 50mm x 50mm square MS hollow tube of minimum 3 mm thickness on which front sheet of 3mm thick Aluminium composite panel (ACP sheet) shall be fixed and its back side should be covered by 1.25 mm GI sheet. The Laser Router shall be used for ACP letter cutting (for proper accuracy) as per drawing the 10 mm acrylic sheet be used for making raised letter with the help of laser technology, the letter should be 5 mm raised arrangement for fixing from inner side of the board. 25x25x3 mm SS Angle shall				

	be provided for the border of complete board. Board shall be IP65 & IK10 rating.				
	b) Letters shall be laser cut and shall be made of minimum 10 mm acrylic sheet. Suitable box type arrangement shall be made for LED modules.c) Complete board shall be IP-65 protected.d) LED modules of 1.2 volts (0.4 watt and minimum 120 lumens per watt) in one module with suitable pasting arrangements with the help of adhesive solution as reqd. Waranty of LED modules shall be 5 years.e) Suitable no. of LED driver shall be provided for uniform illumination in the board with IP-68 or more grade protectionf) The signage board shall be bilingual (Hindi & English) with logo of department and will be of different sizes as per requirements.	100	4,319	Sqft	4,31,900.00
	Total of SH - II Outdoor lighting				10,08,670.00
	SH -III Water Supply Pump				
59	Supplying of 5 HP, borewell submersible pump having head range 52-163 mtr and discharge range 1.75 - 3.25 lps, delivery size 50 mm, motor body-SS suitable for working on 3 phase, 415 volt, 50 Hz AC power i/c accessories for connection on both side suction and delivery line supply etc complete as required.	1	46,832	Each	46,832.00
60	Supplying of 50 mm dia G.I.pipe complete with G.I. fittings including wastage during installation in borewell etc. complete as required.	40	621	Metre	24,840.00

61	Supply of 8 mm PVC coated Stainless steel wire rope (safety wire) for supporting and securing the submersible pump assembly inside the borewell etc. complete as reqd.	80	8	Metre	640.00
62	Supplying 3 core 6 sqmm PVC insulated and PVC sheathed flat submersible copper cable upto 1100 volts as per IS 694 etc. complete as required.	70	414	Metre	28,980.00
63	Lowering, installation, testing and commissioning of 5 HP submersible pump set in existing borewell by means of chain pully arrangment, including lowering of pump, GI riser pipes, submersible cable and Steel safety rope, pipe jointing by flanges nuts & bolts, cable clamping, alignment, making electrical connections, testing and commissioning of pump set complete as required.	1	8,896	Job	8,896.00
64	SITC of Direct online starter for 3 phase 5 hp submersible pump having protection degree IP 54, FRLS internal wiring, combined with Ampmeter,Voltmeter,selector switch,On/Off Indication , Push button for start or Stop, overload relay with suitable size contactor etc. i/c connection, testing, commissioning complete etc. as required.	1	10,605	Each	10,605.00
65	SITC of 250 LPH Reverse Osmosis System having designed for Treatment of saline water in the TDS range of 1500-2000 PPM and maintain the output TDS<150 mg/L, Completely assembled, Pre-piped, Pre-wired with Microprocessor-based control Pannel for ease of operation and inbuilt process Logic having provision for Auto start /stop based on Water level in the Tank with MCB for Plant operation and Raw water pump integrated with Plant, Integrated pretreatment module for removal of suspended solids along with pressure gauges, Robust high Pressure Pump in SS 304 construction, Inbuilt Protection to high Pressure Pump by Way of Low Pressure Switch/high Pressure switch and Glycerine filled SS Pressure gauges for durability, Rota meter for measuring permeate flow and Powder coated MS skid with plated hardware having Following Technical specification, providing output water as per IS 10500 (2012) etc complete as required.				
	SYSTEM SPECIFICATION				
	Suitable size Centrifugal Mono-block type Raw Water Feed Pump : 1 No.				

1000 LPH Pressure Sand Filter (PSF)MOC of Vessel : FRP Media : Anthracite + Support Bed Type of valve : Single – Multiport valve Quantity : 1 No.				
1000 LPH Activated Carbon Filter (ACF) MOC of Vessel : FRP Media : Activated Carbon + Support Bed Type of valve : Single Multiport Quantity : 1 No.				
Antiscalant Dosing System Dosing Pump Capacity : 0-1.5 LPH, Quantity : 1 No Dosing Tank Capacity : 50L, MOC: HDPE, Quantity : 1 No				
Micron Cartridge Filter (MCF) MOC of Housing : Polypropylene MOC of Cartridge : Polypropylene Filter Rating : 5 micron, Size : 10"/20" long Quantity : 1 No				
High Pressure Pump : 1000 LPH , 1.1 Kw MOC : SS 304, Quantity : 1 No.				
Reverse Osmosis System Permeate capacity : 250 LPH Membrane Specification : Spiral wound, TFC-polyamide material, Size : Dia. 4’’ X 40’’ long No. of Membranes with housing : 1 Nos Skid Material of Construction: MS Powder Coated Piping MOC: UPVC/CPVC				
ICPW MOC : UPVC				
UV System Quantity : 1 No. 21 W Capacity: 500 LPH MOC of chamber : SS304				
Instruments Pressure Gauges : 1 Lot. Pressure switches : 2 Nos. Conductivity meter : 1 No. Rate of flow indicators : 2 No. For RWP RO Permeate Level switch : 2 Nos.				
Microprocessor-based control Pannel Quantity : 1 No.				
Storage tank capacity: 60L, SS304	1	3,84,656	Each	3,84,656.00

66	SITC of 40L storage water cooler with cooling capacity of 40 LPH, Fully stainless steel outer body(304Grade), Tank material SS-304, 01 no SS Faucets, hermetically sealed reciprocating type compressor with R-134a/R-22 refrigerant, suitable to operate on single phase supply including integration of the system with RO plant complete with electrical and plumbing connection etc as required.	2	35,615	Each	71,230.00
	SH -III Water Supply Pump				5,76,679.00
	SH - IV Fire Fighting System				
67	Supplying, installation, testing and commissioning of electric driven terrace pump suitable for automatic operation and consisting of following, complete in all respects, as required: (Terrace Pump) (a)Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical confirming to IS : 1520 (b)Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325. (C) M.S.fabricated common base plate, coupling, coupling guard, foundation bolts etc.as required. (d) Suitable cement concrete foundation duly plastered and with anti vibration pads.				
67.1	450 lpm at 35 m Head	2	91,384	Set	1,82,768.00
68	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
68.1	80 mm dia	5	2,277	Mtr.	11,385.00
68.2	100 mm dia	35	3,077	Mtr.	1,07,695.00

69	Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Gunmetal/Stainless Steel cap and chain as required				
69.1	Single headed Stainless steel	4	6,632	Set	26,528.00
70	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required				
70.1	80 mm dia	4	5,406	Set	21,624.00
70.2	100 mm dia	2	7,271	Set	14,542.00
71	Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/gun metal seat, ISI marked complete with nuts, bolts, washers, gaskets and conforming to IS 780 of following sizes as required :				
71.1	80 mm dia	4	11,314	Set	45,256.00
72	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required				
72.1	80 mm dia	2	8,255	Set	16,510.00
72.2	100 mm dia	2	11,853	Set	23,706.00
73	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.				
73.1	100 mm dia	1	7,270	Set	7,270.00
74	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required				
74.1	Stainless Steel (Grade 304)	8	4,667	Set	37,336.00

75	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585 20 mm nominal internal dia gun metal globe valve & nozzle. Drum and brackets for fixing the equipments on wall. Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket.				
75.1	30 m	4	9,440	Set	37,760.00
76	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required				
76.1	Stainless Steel (Grade 304)	4	3,402	Each	13,608.00
77	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required				
77.1	2 way-100 mm dia M.S. Pipe	1	7,262	Each	7,262.00
78	Supplying and fixing air vessel made of 250 mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	1	19,402	Each	19,402.00
79	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	2	1,670	Each	3,340.00
80	Providing and fixing in position industrial type pressure gauges with gun metal / brass valves complete etc. as required.	6	1,491	Each	8,946.00

81	Supplying, fixing, testing and commissioning of 2.0mm Aluminium Single Side Photo luminescent Signages, non toxic, non – radio active maintenance free self glowing, comprising zinc sulphide chargeable crystals which glows in dark printed on u – 1000 photo luminescent containing luminescent 111 as base chemical cover with u/vstabilized coating and mounting arrangement for wall / ceiling mounting as per site conditions. The color combination and size of the letters shall be as per IS : 12349. amended up to date.etc complete as required.	1200	35	Sq.Inch.	42,000.00
82	Fabrication, supply, installation, testing, and commissioning of Electrical control panel of cubical construction, fabricated out of a 2 mm thick CRCA sheet with enclosure protection class IP 42, suitable for operation on a 415volt, 3-phase, 50 Hz, 4-wire A.C. supply system, dust- and vermin-proof, powder-coated in an approved siemens gray shade after 7 tank pre-treatment processes. The panel shall be compartmentalized type with hinged lockable doors, detachable cable gland plates made of 3 mm thick CRCA sheet, cable alleys of suitable size on both sides for cabling routing, openable type rear cover and complete with 4 strips of Aluminium bus bars of 150 Amp capacity with heat-shrinkable coloured sleeves and control wiring with suitable sized insulated copper conductor cable, including suitable size M.V. danger board fixed on panel.				
	The entire panel shall have one common copper bar of size 25 mm x 5 mm at the rear with two earth studs/terminals.				
	The panel shall be supplied with a bottom base MS channel, not less than 100 mm x 50 mm x 5 mm thick. The panel base should have four 300 mm long legs (made of angle irons 50 x 50 x 6 mm or other suitable means) to raise the panel from the floor. The base frame of the panel should be grouted into the floor with four 12mm dia x 200mm long bolts and nuts. Front area (approximate front area 800 mm X 800 mm) and depth minimum 250 mm.				
	INCOMING				
	100A, 3P ,MCCB 25 KA TM-1 No				
	Digital VAF meter-1 No.				

	C.T. 100/5A 10VA with class 1.0 accuracy for VAF meter- 3 Nos.				
	2A SP Control MCB 10KA C curve-3 Nos				
	Indicating light LED -5 Nos				
	Auto Manual selector switch- 2 Nos.				
	OUTGOING				
	Split casing pump- 450 LPM ,3Ph S/D Starter - 2 Nos				
	Electronic motor protection unit(MPU) SD as detailed below -2 Nos.				
	32 Amps , TP, MCCB, 10KA breaking capacity -2 Nos				
	3 Pole, 415 V, Power Contactor AC3 duty of suitable Rating 32 A- 6 Nos.				
	Heavy Duty Connection terminal 3P- 6Nos.				
	Motor Protection Unit-2Nos.				
	Three Phase 415 VAC 50 Hz frequency, Operating Voltage range: 300-490 VAC, Soft Push buttons for manual start & stop, Digital display of Amp. Meter, volt meter & Run Hr., Auto switch with Start delay time.				
	Protections:				
	Over voltage protection (Settable)				
	Under voltage protection (Settable)				
	Over load Protection (Settable)				
	Single phase & Reverse phase protection				
	Unbalance voltage protection				
	Remote Control Panel -1No.				
	Remote operation (wired) for SD starter panel , inbuilt digital water level indicator (5steps) with float sensor 5 levels , automatic operation as per water level , to be installed at ground.	1	1,31,512	Each	1,31,512.00
83	Supply and laying in pvc conduit of 3core 2.5 sq mm. control cable of XLPE insulated, PVC outer sheathed, unarmoured copper conductor cable suitable for rated voltage of 1.1 KV grade ISI marked conforming to IS:7098(Part.1)-1988 with amended upto date etc as required as required. (for remote panel)	20	393	Mtr.	7,860.00
84	Supply of following sizes & core XLPE insulated, PVC outer sheathed, armoured with galvanized round steel wire or steel strip with stranded aluminum conductor cable suitable for rated voltage of 1.1 KV grade ISI marked conforming to IS:7098(Part.1)-1988 with				

	amended upto date of following sizes as required.				
84.1	3C X 10 Sqmm	40	337	Mtr.	13,480.00
84.2	4C x 25 Sqmm	25	568	Mtr.	14,200.00
85	Supplying and fixing of Powder Fire Extinguisher (Stored Pressure type) Capacity 06 Kg duly ISI marked conforming to IS: 15683:2018, with IS 4308, ISI marked ABC powder complete with squeeze grip release valve, discharge pipe, locking arrangement, pressure gauge, operation manual and bracket. Operating Temperature: -30°C to + 60°C etc. complete as required.	8	7981.00	Each	63848
86	Supplying and fixing of CO2 type Fire Extinguisher ISI marked conforming to IS: 15683. Capacity 4.5 Kg. Complete with delivery hose horn, wheel type release valve, locking arrangement, operation manual and bracket. Operating Temperature: - 30°C to +60°C etc. complete as required.	8	13112.00	Each	104896
	Total of SH - IV Fire Fighting System				9,62,734.00
	SH - V Fire Alarm System				
87	Supplying, installation, testing & commissioning of main control and indicating panel made out of 16 SWG MS sheet to accommodate the following items duly powder coated in approved colour with louvers for ventilation, locking arrangement, audio and visual indication for fire alarm and public address system, monitoring system including connections, interconnections etc complete as required.				
	6 zone panel for fire alarm system				
	100 watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required- 2 Nos.(one to act as standby)				

	Talk back master station with LED PTT (press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit -1 set.				
	Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc., complete as required- 1 set				
	Amplifier change over switch for inter changing amplifier- 1 No.				
	Monitor panel for loudspeaker complete output selector ON/OFF switch, fuse visual indications etc. complete as required- 1 No				
	Gooseneck microphone with stand and ON/OFF switch -1 No.				
	Mains ON/OFF switch, fuse indication lamps, DC and AC voltmeters & ammeters terminal blocks etc. complete as required -1 set.				
	Battery charger trickle cum boost to take complete load of fire alarm & PA system complete with all accessories including providing & fixing of 2 nos. 12 volt, 30 AH each sealed maintenance free batteries -1 set.	1	52,258	Each	52,258.00
88	Supplying, installation, testing & commissioning of heat detector operating at 54°C/57°C with rate of rise cum fixed temperature (dual thermistor) type with mounting base complete with all connection etc. as required.	8	1,136	Each	9,088.00
89	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	29	1,223	Each	35,467.00
90	Supplying, installation, testing & commissioning of manual call boxes of MS construction in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	6	513	Each	3,078.00
91	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in M.S. box (16 SWG) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	4	600	Each	2,400.00
	PA System				

92	Supplying, installation, testing & commissioning of 1.5/3/6W metal box ceiling/wall speakers complete as required.	3	1,891	Each	5,673.00
93	Supplying, installation, testing & commissioning of digital audio amplifier 50 Watt, 25V rms operating at 240 Volt AC Supply complete as required.	1	1,01,150	Each	1,01,150.00
94	Supplying & laying of 2x1.5 sqmm fire survival armoured cable, 600/1000V rated with annealed copper conductor having glass mica fire barrier tape covered by an extruded layer of Cross Linkable Ethylene Propylene Rubber (EPR) insulation and LSZH inner bedding, steel wire armouring & LSZH outer sheath complete as required.	300	386	Mtr.	1,15,800.00
95	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required.				
95.1	speaker cable Two pair, 2-core, 1.5 sqmm	100	97	Mtr.	9,700.00
96	Supplying, fixing, testing and commissioning of LED Signages Double Side Visible Green/ Red Led, Size 350mm X 160mm, energy saving & environment friendly Laser Etched LED Exit Signages with lpm technology smps, 8000 to 10000mcd super bright LEDS from agilent usa. MS powder coated housing, power consumption less then <2w, Battery 7.4 Volt lithium Ion 2200 mah etc. complete as required.	14	8992.00	Each	125888
	Total of SH - V Fire Alarm System				4,60,502.00
	SH - VI Lift				
97	Supplying, Installation, Testing & Commissioning of following capacity passenger Machine room less (MRL) lift with regenerative drive as per CPWD General Specification for Electrical Works (Part-III Lift & Escalator) 2003, BIS Codes, NBC 2016 as amended upto date having provision for barrier free access as per Harmonised Guidelines & Standards for Universal Accessibility in India - 2021 of MoHUA, serving different floors in the lift shaft as per detailed specifications enclosed and as under including all other equipment and accessories complete as required:-				
	(i) Speed-1.0 MPS				

	(ii) Floors-4(G+3)				
	(iii) Travel-14 metres(approx)				
	(iv) Stops & opening : 4 stops and 4 openings				
	(v) Controller: A.C. variable voltage & variable frequency				
	(vi) Automatic rescue device (ARD) complete with dry maintenance free batteries as required.				
	(vii) Operation: Microprocessor based single automatic push button/simplex selective collective/duplex collective selective with/without attendant				
	(viii) Power-415 Volts+10%, 3 phase, 50 Hz, 4 wires system				
	(ix) Car Enclosure: Stainless steel scratch proof (Moon Rock/Honeycomb/ Hairline Finish) on all sides and stainless steel decorative ceiling with fans (indirect throw) and LED fitting.				
	(x)The car flooring should be smooth and antiskid as approved by engineer-in-charge.				
	(xi) Type of doors:-				
	(a) Car: Power operated, centre opening horizontal sliding stainless steel scratch proof (Moon Rock/Honeycomb/ Hairline Finish).				
	(b) Landing doors: stainless steel scratch proof .				
	(xii) A hand rail not less than 600mm long at 900mm above floor level to be fixed adjacent to control panel in the lift car.				
	(xiii) Voice announcement system in the car to announce the position of the elevator in the hoist way as the car passes or stops at floor served by the elevator.				
	(xiv) Closed loop Control System, protection against power fluctuation, self diagnostic control, Landing doors 2 hours Fire rated, Overload detection and protection, Overspeed Governor, Dot Matrix LED D & P Indicators In Car & Landings, BMS Compatibility, tamper proof infrared curtain covering almost the entire height of the lift car door, Alarm horn, Anti Nuisance Operation, CCTV camera system with 4 MP IP camera,				
	suitable NVR and HDD for 30 days storage backup , Firemen switch, 2/3 way intercom, Emergency Stop Switch with battery backup for fan and light fitting for 1 hour, pit ladder.				

	(xv) The lift doors shall have a vision panel to enable persons with hearing impairment to signal for help or assistance in the event of an emergency.				
	(xvi) An appropriate technological support be provided (Through emergency messaging services or alarms etc.) to respond to the emergency requirements of person with hearing impairment or deafness.				
	(xvii) In case of failure of ARD or other electronic devices, a provision of manual rescue be provided.				
97.1	13 passenger (884kg)	1	15,84,365	Each	15,84,365.00
	Total of SH - VI Lift				15,84,365.00
	SH - VII DG Set				
98	Supply, installation, Testing & Commissioning of 'Silent Type Diesel Generating set as per CPCB IV + or better norms along with having Prime Power Rating of KVA as below, 415 volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 Hz, 3 phase system & for 0.85 Load Factor, including testing at factory and site with fuel, load for test and other necessary arrangements Complete as per CPWD specifications, should have QR code which should contain drawing, test report OEM manual, Geo- Tag of manufacturing location, rating plate as per relevant IS Code etc. and consisting of the followings:				
	(A) Diesel Engine:				
	Turbocharged Diesel engine 4 stroke water cooled, multi cylinder, dynamically balanced fly wheel, electric start of suitable BHP at 1500 RPM suitable for above output of alternator at 40 Degree C, 50% RH & at 1000 Meter MSL, capable of taking 10% over loading for one hour after 12 hours of continuous operation. The engine will be with Electronic governor, Dry type Air filter with service indicator, first filling of engine fuel (after commissioning) lubricating Oil, Coolant and other consumables complete with all the required accessories, the Electronic governor shall be as per ISO 8528. The engine shall comply to the latest CPCB norms (CPCB IV + or better) and Conforming to BS 5514, BS 649, IS 10000, IS 10002, IS 13018 and as per CPWD specifications.				

(B) Engine mounted Instrument Panel fitted with and having digital display for following:				
(i) Start-stop switch with key				
(ii) Water temperature indication				
(iii) Lubrication oil pressure indication				
(iv) Lubrication oil temperature indication				
(v) Battery charging indication and Voltage indication				
(vi) RPM indication				
(vii) Over speed indication				
(viii) Low lubrication Oil trip indication				
(ix) Engine Running Hours indication				
(x) Fuel Level				
(C) Alternator:				
Synchronous alternator rated of appropriate KVA, 415 volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at 40 Degree C, 50% RH & at 1000 Meter MSL. The alternator shall be having Screen Protected Drip Proof (SPDP) enclosure IP23, brushless, continuous duty, dynamically balanced rotor, capable of taking 10% over loading for one hour after 12 hours of continuous operation, self cooled, self-excited and self-regulated through AVR conforming to IS13364(Part 2)/IS: 4722/BS 2613 suitable for tropical conditions				
and with class- H insulation.				
(D) Base Frame & Foundation:				
Both the engine and alternator shall be mounted on suitable base frame made of MS channel with necessary reinforcement which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendations of manufacturer.				
(E) FUEL TANK:				
Daily service fuel tank of suitable liters capacity as per CPWD Specifications, fabricated out of 3 mm thick M.S. sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class 'C' pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications.				
(F) Exhaust System:				

	Dry exhaust manifold with hospital type exhaust silencer and catalytic convertor.				
	(G) Starting System:				
	12V/24V DC starting system comprising of starter motors: voltage regulator and arrangement for initial excitation complete with suitable numbers of batteries (180 AH capacity lead acid SMF type) as required as per specifications. The battery shall be housed inside the acoustic enclosure of DG Set.				
	(H) Acoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere and the temperature rise inside the enclosure, noise level outside enclosure. The acoustic enclosure should be suitable for cable connection /connection through bus-trunking. Such arrangements on acoustic enclosure should be water proof & dust-proof conforming to IP-65 protection. The enclosure shall be as per CPCB IV + or better norms etc. and as per CPWD specifications.				
	(I) AMF Panel:				
	Free standing floor mounted IP 42 automatic mains failure control panel including auto bypass, suitable for KVA as below for silent type DG set complete with relays, timers, set of CTs for metering & protection and energy analyser to indicate currents, phase and line voltages, frequency, power factor, KWH, Kilo Volt Ampere Reative Hour (KVARH), KVA (Phase & Total), KW & provision for overload, short circuit, restricted earth fault, under frequency, power (aluminum) and control (copper) cabling of suitable size upto 15 meter between AMF panel, LT Panel and DG Set including connection interconnection etc. as required, all complete and inter locking and communication/ Ethernet / RS485/ SNMP port open protocol for BMS integration including suitable software, the panel shall be of DG Set OEM make etc. as per approved by Engineering in charge and including the following:				
	1. Suitable numbers and appropriate capacity 4 pole motorised electrically operated draw out with cradle type 3 position ACB/ MCCB with electronic release for O/C & E/F and shunt trip.				

	2. Auto/Manual/Test/Off selector switch				
	3. Protection for under and over voltage phase reversal (2 nos Over voltage relay, 2 Nos. reverse power relay and 2 Nos. under voltage relay).				
	4. 3 Sets of current transformers 15 P10 accuracy for protection and 15 VA class-I for metering				
	5. Energy analyser unit to indicate current, Voltage(L-N & L-L), kW, kVA (Phase & Total), Frequency, KWH, PF.				
	6. LED Indicating lamps for load on mains and load on set				
	7. Fuse/ MCB for instruments.				
	8. Battery charger, complete with transformer/ rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment.				
	9. Main supply failure monitor.				
	10. Supply failure timer.				
	11. Restoration timer				
	12. Control unit with three impulse automatic engine start/stop and failure to start lockout.				
	13. Impulse counter with locking and reset facility.				
	14. ON/OFF/Control circuit switch with indicator				
	15. Audio/Video annunciation for				
	(i) High water temperature				
	(ii) Low lubricating oil pressure				
	(iii) Engine over speed				
	(iv) Engine fails to start				
	(v) Full load/maximum load warning				
	16. Protection for over/under Frequency, Loss of AC sensing, Over Current, Unbalancing load with suitable number of relays and accessories				
	17. Maintenance notification based on Engine Run Hour & due date				
	18. Load Management through PLC to achieve auto opening and closing of incomer breakers, bus coupler switching of essential panel , interlocking providing signal to AMF Panel for load status and AMF shall give command to DG Set to auto start / auto stop depending upon load status and requirement etc. and necessary hardware and software required to perform the				

	operation shall be provided by the contractor including all control wiring.				
98.1	40 KVA	1	5,32,669	Each	5,32,669.00
	Total of SH - VII DG Set				5,32,669.00
	SH - VIII UPS				
99	Supplying, installation, Testing & Commissioning of following capacity at full load (Unity Power Factor) at operating temperature 0 to 40 0C, Relative humidity 0 to 95%, Online double conversion true sine wave Uninterrupted hot swappable (allow for the replacement or addition of battery modules without shutting down the entire system) modular Power Supply (UPS) system with N+1 modules (N denotes total number of modules required for rated capacity). The UPS shall include a Rectifier, inverter, battery bank suitable for 30 minutes back up (Battery VAH capacity shall not be less than 1600 VAH per KVA of UPS rating per Hour backup time) on full load (Battery shall be VRLA, SMF in ABS Container) and Static Bypass switch along with provision for manual bypass, suitable isolation transformer for additional protection against neutral faults etc. UPS shall have inbuilt phase sequence correction. The UPS systems offered are to be of the latest technology with Digital Control Microprocessor based for reliable operation using Insulated Gate Bipolar Transistor (IGBT)'s both for the rectifier & inverter (3 Level) with PWM (Pulse Width Modulation). The quality of design, manufacturing and inspection process should confirm to the relevant Inter-national standards such as IEC/EN/VDE. The operating efficiency of the UPS systems shall be >96% while operating on battery mode and delivering quality power to the 100% non-linear loads. Current total harmonic effect(ITHD) on the input grid shall be < 5% at 50 %load.				

(The required LC (inductor (L) and a capacitor (C)) filters shall be included in UPS cost), extreme power factor kit to be included to limit the input power factor (PF) to 0.99 and output power factor shall be unity (i.e. kw rating of the UPS shall be kva rating x 1), however UPS shall be suitable to take load at 0.7 lagging to 0.7 leading power factor loads.				
UPS shall be suitable for incoming supply AC : 3Phase 400V +/-20%, 50 Hz +/-5 Hz, AC Output voltage: 3Phase 415 Volt, 50 Hz +/-0.2Hz, Overload capacity of 120% for 10 mins, Sine wave output. Non condensing, noise level less than 60db at 1 meter distance, protections: Input Under voltage over voltage, abnormal out voltage, battery over charging, output over current, short circuit protection, battery deep discharge protection, 10KV surge. UPS must comply with low voltage electromagnetic compatibility (EMC) achieved as per EN 6204, EN6204 Part I and Part 2, it shall be a Voltage and Frequency Independent (VFI)-type UPS. . Communication RS232/RS485/SNMP port open protocol for BMS integration, all hardware & software for IoT Communication as per approved by Engineering in charge. Required battery racks and interconnecting copper conductor cables of suitable size and connectors and all required accessories are inclusive of the cost).				

	This system must provide a means for logging and alarming of all monitored points plus email notification. Forced air-cooling with integral inbuilt fans with redundancy (if one fan fail UPS should be able to handle at least 80% of the load, Noise Level 65 DB at 1 meter distance. The system shall be in compliance IEC 62040- 1,2 & 3, IS: 16242 and CPWD Specification. Display Panel (minimum) (In-build 5 inch or more LC Display / LED) to display : a) Input: Voltage, current, Frequency. b) Bypass: Voltage, Frequency. c) Output: Voltage, frequency, Current. d) Battery: Voltage, Capacity. e) Load: KVA, KW, Percentage. f) Temperature: STS, Inverter, PFC. g) Event Logging & Statistical Data (On LCD/LED): UPS should capture and display up to 3000 events like: Over temperature / DC Bus Fail / Fan Fail / Fuse Fail / Overload / Short-circuit / Device Fail / Inverter Fail / Rectifier Fail / Bypass Fail, etc. h) Statistical Data: No. of power failures / Transfers to Bypass / Total Running time, etc. i) Mains Mode of Operation / Battery Mode of Operation / Bypass feeding the load / UPS Fault / Battery charging and discharging, overload, battery voltage and battery capacity. j) Audible Alarms : Mains Failure, Battery Low Alarm, UPS Overload, Fault, Shutdown, Input Over, Under Voltage, Output Over, Under Voltage, Battery Over, Under Voltage, Over Load and short circuit, Over Temperature. The UPS should have QR code which should contain drawing, test report OEM manual, Geo- Tag of manufacturing location etc				
99.1	20KVA (Each Power module shall be < 10 KVA)	1	3,41,772	Each	3,41,772.00
	Total of SH - VII UPS				3,41,772.00
	SH -IX Air conditioning system				

100	Supplying , Installation, Testing and Commissioning of Air Cooled Hi Wall split type Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU) i/c drain pipe R-32/R-410/ R-407 Green Refrigerant, wireless Remote control, suitable for working between 180- 260V with low & high voltage cutoff and 50 hz ,1 phase AC supply capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotarycompressor. The system shall be able to deliver 100% of the rated capacity upto 42 0C. Min 5 year Original Equipment Manufacturer (OEM) warranty both compressor and Printed Circuit Board (PCB). Must comply : Electrical cable IS 694 or IS 9968 temperature sensing control IS /International Electrotechnical Commission (IEC) 60730, hermetic compressor IS 10617, heat exchanger IS 11329, capacitor IS 2993 and motor IS 12615. Complete as per CPWD specification and IS : 1391 Part II 2023. The system shall be able to operate up to 50 0C (out door ambient temperature).				
100.1	1.5 TR with 3 Star BEE Rating	8	41,768	Each	3,34,144.00
101	Supplying, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastomeric nitrile rubber tubular sleeves sections of 19 mm thick insulation as given below for Suction and Liquid lines, all accessories as per specifications etc. as required :				
101.1	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	30	256	Mtr.	7,680.00
101.2	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	30	487	Mtr.	14,610.00

102	Supply and installaton of CPVC condensate drain pipe of following size insulated with 9 mm thick nitrile rubber insulation including all cpvc fittings,adhesive etc. complete as required				
102.1	25 mm	50	168	Mtr.	8,400.00
103	SITC of Voltage Stabilizer suitable for up to 1.5/2 ton Inverter AC with Digital Display, capacity should be 5 KVA (Working Range: 170-270 VAC) and it shall automatically step up or step down to keep the output voltage 220 $\pm$ 5% i/c connection testing etc as reqd.	8	4,449	Each	35,592.00
	Total of SH - IXAir conditioning System				4,00,426.00
	SH - X EPABX, LAN and CCTV System				
	EPABX & LAN				
104	Supply, installation, testing, and commissioning of an IP-based EPABX (Electronic Private Automatic Branch Exchange) system with a minimum capacity of 24 users, provisioned with all required licenses and hardware to support 20 IP/SIP users and 4 analog users, along with 4 CO lines, 30 channel E1 PRI interface / SIP trunk, delivering comprehensive telephony services including call routing, call management, and seamless internal and external communication; scalable to accommodate a minimum of 20 softphone users fully integrated and synchronized with the provided IP Phone etc complete as required	1	3,23,325	Each	3,23,325.00
105	IP Phone featuring a minimum of 2.6" colour display (320 x 240 pixels) 8 programmable line keys with dual-color full-duplex speakerphone, and wired/wireless headsets.Dual-port Gigabit Ethernet (10/100/1000 Mbps) to pass high-speed data directly to PC etc complete as required.	14	11,582	Each	1,62,148.00
	CCTV				
106	Supplying Installation Testing and Commissioning of 4MP IP IR Dome Camera having following specifications and features etc :-				
	1)Type of Camera: Dome Camera				
	2) Image Sensor: 1/2.8" or better progressive Scan CMOS get color image even at night condition				
	3) Signal System: PAL/NTSC				
	4) Minimum Illumination: 0.008Lux@ F1.4, AGC ON, 0 lux with IR or better				

5) Imaging: 1/3s to 1/30000s Shutter Support, Auto Gain Control , White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking.				
6) On Screen Display: Camera should display Camera title, Date & Time in live & recorded video both.				
7) Signal to Noise Ratio: > 50 dB				
8) Day & Night: True Day & Night High Performance Mechanical IR cut filter with auto switch, IR SourceInbuilt IR LED's with effective distance upto 50 Mtrs integrated IR 30 Mtrs for colour view in night.				
9) Video Compression (Minimum): H.265 or better, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723				
10) Wide Dynamic Range: WDR (120dB or more)				
11) Digital Noise Reduction: DNR (2D/3D) On/Off				
12) Streaming: Triple streaming, configurable				
13) Video Streaming & Frame Rates: Triple streaming , configurable Main stream: 5/6MP @25/30 fps, Sub streams: D1@25/30 fps or better				
14) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser				
15) Profile Management: User configuration import, export				
16) Security: User Authentication, Water Marking				
17) Onboard Storage: Camera should support built-in Micro SD/SDHC/SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memory Card.				
18) Recording Management: Format SD, overwrite, storage management, video to NAS device,				
19) Edge Analytics : Tripwire, Intrusion, Motion Detection				
20) Alarm Trigger : Motion/tampering detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection				
21) Alarm Support: It should have 1/1 Alarm In/ Out Port				

	22) Audio Support: It should have 1x Built-In Mic and 1/1 Audio In/ Out Port for external Mic. and Speaker (As per site requirement) with G.711U/A/ G.711Mu/ AAC/ G.726 audio compression				
	23) Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP, NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, unicast,				
	24) System Capability: ONVIF				
	25) VMS: Camera shall support open source VMS				
	26) Cyber Security: trusted boot, AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, , account lockout, video encryption, IP/MAC filtering, HTTPS, trusted upgrade.				
	27) Ethernet: 1 RJ 45 10/100 Ethernet port				
	28) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE—to ensure continuous operation in the event of a failure in one power source.				
	29) Power Requirement: 12VDC/24VDC/PoE (802.3af)/ePoE				
	30) Enclosure: IP67 weather proof, IK10				
	31) Operating Condition: Ambient Temperature:- (-) 05°C to 50°C, humidity 95% (max) (non-condensing)				
	32) IR life: 40000 hours or higher				
	33) Video Bit rate: 32 KBPS - 8 MBPS or better				
	34) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS				
106.1	4MP @ 25/30fps@1440P (2560 x 1440) Dome Camera with 2.8/ 3.6/ 6/8/ 12 mm fixed lens (as per site requirement).	5	10,365	Each	51,825.00
107	Supplying Installation Testing and Commissioning of 4MP IP IR Outdoor Bullet Camera having following specifications and features etc :-				
	1) Type of Camera: Bullet Camera				
	2) Image Sensor: 1/2.8" or better progressive Scan CMOS get color image even at night condition				
	3) Signal System: PAL/NTSC				
	4) Minimum Illumination: 0.006Lux@ F1.4, AGC ON, 0 lux with IR or better				

5) Imaging: 1/3s to 1/30000s, Auto Gain Control , White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking.				
6) On Screen Display: Camera should display Camera title, Date & Time in live & recorded video both.				
7) Signal to Noise Ratio: > 50 dB				
8) Lens Type & Focus: as given below				
9) Day & Night: True Day & Night High Performance Mechanical IR cut filter with auto switch, IR SourceInbuilt IR LED's with effective distance upto 50 Mtrs integrated IR and 30 Mtrs for colour view in night.				
10) Video Compression (Minimum): H.265 or better, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723				
11) Wide Dynamic Range: WDR (120dB or more)				
12) Digital Noise Reduction: DNR (2D/3D) On/Off				
13) Streaming: Triple streaming, configurable				
14) Video Streaming & Frame Rates: Triple streaming , configurable Main stream: 5MP/6MP @25/30 fps, Sub streams: D1@25/30 fps or better				
15) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser				
16) Profile Management: User configuration import, export				
17) Security: User Authentication, Water Marking				
18) Onboard Storage: Camera should support built-in Micro SD/SDHC/SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memory Card.				
19) Recording Management: Format SD, overwrite, storage management, video to NAS device,				
20) Edge Analytics : Tripwire, Intrusion, Motion Detection				
21) Alarm Trigger : Motion/tampering detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection				
22) Alarm Support: It should have 1/1 Alarm In/ Out Port				

	23) Audio Support: It should have 1x Built-In Mic and 1/1 Audio In/ Out Port for external Mic. and Speaker (As per site requirement) with G.711U/A / G.711Mu/ AAC/ G.726 audio compression				
	24) Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP, NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, unicast				
	25) System Capability: ONVIF				
	26) VMS: Camera shall support open source VMS				
	27) Cyber Security: trusted boot, AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, , video encryption, IP/MAC filtering, HTTPS, trusted upgrade.				
	28) Ethernet: 1 RJ 45 10/100 Ethernet port				
	29) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE—to ensure continuous operation in the event of a failure in one power source.				
	30) Power Requirement: 12VDC/24VDC/PoE (802.3af)/ePoE				
	31) Enclosure: IP67 weather proof, IK10				
	32) Operating Condition: Ambient Temperature:- (-) 05°C to 50°C, humidity 95% (max) (non-condensing)				
	33) IR life: 40000 hours or higher				
	34) Video Bit rate: 32 KBPS - 8 MBPS or better				
	35) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS				
107.1	4MP @ 25/30fps@1440P (2560 x 1440) Outdoor Bullet Camera with 2.8/ 3.6/6/8/12 mm fixed lens (as per site requirement)	8	10,063	Each	80,504.00
108	Supplying Installation Testing and Commissioning of following Channel Network Video Recorder (NVR) with camera licenses to record for all channels having specifications and features etc as mentioned below :				
	1) Network Video Recorder Embedded/ Installed OS (Linux) along with Camera Licenses to record per NVR and to provide a live view, storage and simultaneously Multi-channel playback of all IP camera or more and must be ONVIF with minimum support of 384 Mbps incoming Bandwidth.				

2) NVR should support video compressions : H.265 or better, H.264, MJPEG. 3) Must support 1 channel RCA Input, 2 channel RCA Output for Two-way Talk with G.711U/A, G.711u, PCM, G726 audio compressions. 4) Intelligent auto power on when power resumes after power outage. 5) Storage: It should support minimum 8 SATA Slots with 16TB capacity/ Slot and RAID support of RAID 0/1/5/6/10. 6) Connectivity Interface : 2 Nos. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS232, 1x eSATA Port 7) Backup Interface : Its should have 4 Nosx USB port (2x USB3.0, 2xUSB2.0) 8) Video Output Ports: 2x HDMI and 2 VGA 9) Alarm Ports: It should have 16/8 Ch In/ Out ports to connect various type of external sensors and output devices like hooter/ Siren etc.				
10) Email & SMS Alert options: Option for SMS/ Email Alerts to minimum 5 designated mobile number for power failure, HDD failure, vandalism, tempring, network disconnection and panic .11) Web & Mobile Application: Web, Mobile app (For iPhone, iPad, Android Phone) for alerts and viewing. 12) Protocols: HTTP, HTTPS, TCP/IP, IPv4/IPv6, UDP, DHCP, DNS, SMTP, UPnP, IP Filter, PPPoE, FTP, DDNS, Alarm Server, IP Search, Multicast, Auto Registration, ONVIF (Profile T, Profile S, Profile G), CGI, SDK and OEM Cloud for remote monitoring without any public IP need. 13) Standards: CE, FCC, RoHS, BIS Certified. 14) Power Supply : Should support AC 100-240V, 50/60Hz Power supply.				

15) Operating Condition : -5°C to 50°C, humidity 90% (max) (non-condensing) 16) The VMS application shall support all the features & functionalities of the offered cameras. 17) VMS should consist Licenses for all channels to record Cameras with General, motion detection, intelligent, alarm and POS recording modes. VMS should be provided with Camera Licenses , with no dependency of VMS licenses by binding with the MAC address of the cameras to achieve the functionality. 18) The NVR OEM shall be responsible for providing a mobile application compatible with both Android and iOS devices, enabling remote monitoring and playback of cameras/NVR footage. 19) The OEM must provide its own DDNS server hosted in India, eliminating the need for a public IP address for remote monitoring over the Internet. 20) Must support Continuous, Alarm, Motion, Instant, Panic Recording Mode				
21) It should support Resolution: 32MP; 24MP; 16MP; 12MP; 8MP; 5MP; 4MP; 1080p; 720p; D1; CIF; QCIF 22) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoring page to view the alert details. The snapshot function is supported on monitoring and playback page 23) The Network Video Recorder (NVR) shall be configured to send email whenever a system message is created or an alarm event occurs. The email server shall be a valid SMTP server. Each recipient email address shall be configured to receive any combination of critical, warning, or informational messages or alarm notifications. When an alarm occurs, the email message includes the NVR name, time of alarm and a list of camera that is configured to record upon alarm 24) It should have Web and GUI interface. 25) Built-In Artificial Intelligence: NVR should have built-in AI :- - 2 Channel face detection and recognition, - Minimum 4 Channel perimeter protection, - Minimum 8 Channel Smart Motion Detection				

	26) Face Recognition Database Capacity: It should support total Blacklist and Whitelist capacity of Minimum 20,000 Faces or more with Face Detection speed of 12 face images/sec and facility to add Name, gender, birthday, address, credential type, credential No., countries & regions and state to each face image. 27) Face & Human Attributes Search: Search Pictures/ Video by Gender, age group, glasses, expressions, face mask, beard, Top color, top type, hat, bag, age, gender and umbrella. 28) ANPR Capability: It should support ANPR Camera with License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle registration location etc vehicle attributes. 29) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, perimeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan, cybersecurity exception				
	30) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email. 31) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People No. Exception Detection, People Staying Detection, Violence Detection. 32) Smart playback function: Should support smart search for the selected area in the video and smart playback to improve the playback efficiency 33) VCA (Video Content Analytic): Should support multiple video contented analytics based on camera analytics 34) Analytics by NVR: Perimeter protection and face recognition				
108.1	16 Channel Network Video Recorder (NVR) having display split :- Main screen: 1/4/8/9/16, 2nd screen: 1/4/8/9/16	1	12,799	Each	12,799.00

109	Supplying, Installation, Testing and Commissioning following capacity Surveillance grade Hard Disk with upto 256MB/s Transfer Rate, 256 MB Cache, 7200 RPM Disk Speed, 3.5 inch form factor, SATA Interface, BSMI, ICES-003/NNB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL Certifications.				
109.1	10TB (Terabytes)	1	24,798	Each	24,798.00
110	Supplying, Installation, Testing and Commissioning of size 32 inch or larger LED display (LED monitor) industrial grade with 3840x2160 resolution or better, USB playback, bluetooth and miracast connectivity, 4X HDMI 2.0, DP 1.2, HDR 10/10+, brightness: 500-nits or better, Video wall mode should be available, contrast ratio: 1200:1, OPS slot, viewing angle (H/V): 170°/ 170°, response time less than 12ms, Display control shall be on monitor screen and programmable with remote (remote shall be supplied with system), Key Board, Optical Mouse, etc. as required.	1	39,590	Each	39,590.00

111	Supplying, installation, Testing and commissioning of following capacity 24 port Layer 2 indoor Network Switch having features and specifications etc. as mentioned here under: At least 24 X RJ-45 Gigabit Ethernet Ports and additional 2 X 10G Base -T with 4 X SFP Ports with non-blocking architecture by having Switching capacity of min. 168Gbps and packet forwarding rate of 125Mpps or higher, 16K MAC table. Console Port, USB port, Stacking support of min. 8 units per stack. Internal dual AC Power supply, STP, RSTP, MSTP, BPDU Filter, BPDU Restriction, Min. 9K Jumbo Frame, LBD, IGMP Snooping V1/V2/V3, MLD Snooping V1/V2. IGMP /MLD Groups 1K or more, IPv4/IPv6 Loopback Interface, 16 L3 IP Interface, Ipv6 ND, VRRPv3, UDP Helper, ECMP. VLAN: 802.1Q, Port based, Q-in-Q, Multicast VLAN, Protocol VLAN, VLAN Trunking, DHCP Snooping, Server, server Screening. RADIUS , TACACS+ Authentication, QoS: 802.1P, 8 queues per port, QoS : WRR, Strict+WRR, WRED, 802.1p. ACL: MAC based, IPv4C IPv6, TCP/UDP Port number, time based ACL, TFTP Client, SNMP V1, v2c, v3, SNMP traps, RMON, DHCP server, relay, client, LLDP, LLDP-MED, OAM, Dying Gasp, 802.3ah, sflow, RIP, OSPF v2/v3, policy based route, SSL, SSH. 6 kV surge protection on all Gigabit Ethernet ports and on all GE RJ-45 access ports. Certifications: UL, CE, FCC, RoHS and relevant MTCTE(TEC)/BIS Compliance/Certification as applicable, etc. complete as required.				
111.1	24 port PoE Layer 2 Network Switch with PoE Support of 370W or higher with each copper port supporting 802.3at PoE+ min.	2	1,25,393	Each	2,50,786.00
112	Supplying Installation Testing and Commissioning of 24 port Cat6 Patch Panel loaded. Must be of 1U height with clear label holders and white label with the panel. 24 Ports Cat-6 Patch Panel should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.	2	5,278	Each	10,556.00

113	Supplying, Installation, Testing and commissioning of following CAT6 Patch Cord should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.				
113.1	Copper Patch Cords of length 1m (3ft)	55	151	Each	8,305.00
114	Supplying, Installation, Testing and commissioning of CAT6 Copper Information Outlet (IO) with face plate of color as per site requirement, should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.	14	151	Each	2,114.00
115	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.				
115.1	1 or 2 Module (75mmX75mm)	14	614	Each	8,596.00
116	Supplying, Installation, Testing and commissioning of RJ45 Connector for CAT 6/6A Cables. RJ45 modular plug supports 4 twisted pairs, 8 positions, 8 connectors. Housing: PC, UL94V-2, transparent color, Use for 24- 26 AWG stranded wires etc. complete as required.	13	9	Each	117.00
117	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diameter should be in the range of 6.1mm nominal with Operating Temperature Range : -5° to +60°C, Bending Radius : < 4 X Cable Diameter at – 5°C ± 1°C and Pulling Force : 11.5Kg etc. complete as required.				
117.1	1 Run of cable	300	60	Mtr.	18,000.00
117.2	2 Run of cable	100	96	Mtr.	9,600.00
117.3	3 Run of cable	50	131	Mtr.	6,550.00
117.4	4 Run of cable	50	167	Mtr.	8,350.00
118	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting				

	the wall and making good the same in case of recessed conduit as required.				
118.1	20 mm	200	151	Mtr.	30,200.00
118.2	25 mm	100	168	Mtr.	16,800.00
118.3	32 mm	60	209	Mtr.	12,540.00
119	Supplying and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U'Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.				
119.1	6U Rack	2	6,939	Each	13,878.00
	Total of SH - IX EPABX, LAN and CCTV System				10,91,381.00
	SH-XI- Solar photo voltaic power generation system				
120	Supplying Installation, Testing and Commissioning of on-grid Solar Photovoltaic Power Plant conforming to various applicable standards BIS, IEC, MNRE guidelines, the Central Electricity Authority Regulations and CPWD Specifications as amended up to date, consisting of Mono/Poly Crystalline silicon solar cells module, net metering facility, necessary control, protections, earthing, cabling, mounting structure, junction boxes, power conditioning units, Real time online web interfaced Data Monitoring System, Distribution panels, grid connecting arrangement, conduits, pipes, cable trays and other accessories etc. as required.				

a) High Energy Efficiency Solar Photovoltaic Module of capacity 330 Wp or above, manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730-Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 23% at STC with temperature coefficient of Pmax better than -0.30% per 0C. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. Solar Modules shall be designed to operate in relative humidity upto 100% with temperature between -10 0C and +85 0C. Further, each PV module used in any solar power project must have Radio frequency identification tag with information such as name of manufacturer, month and year of manufacturing, country of origin (separately for Solar cell and module), I-V curve, Unique Serial No and Model No of the module, Wattage, Im, Vm and FF, name of test lab issuing IEC certificate.				
b)Power Conditioning Unit (PCU) of 350-800 V DC Input voltage range and 415 V AC, three phase, 4 wire, 50Hz +/- 2.5 Hz, output voltage suitable to generate AC with a variation of 10% at nominal voltage. Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 0C, Minimum IP-65 for outdoor and Minimum IP 21 for indoor, Built-in meter and data logger, MPPT, switching devices IGBT/MOSFETs and controller Microprocessor /DSP. PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown. The PCU shall be able to withstand unbalanced load conforming to IEC standard with shutdown/standby mode. It must be provided with grid islanding along with manual disconnect pole isolation switch besides automatic disconnection. Minimum protections: Mains Under / Over Voltage, Over current, Over/Under grid frequency, Over temperature, Surge voltage induced at output due to external source, Short-circuit, Lightning, Anti Islanding (for grid synch. Mode)				

	and other protections as per applicable standards. LCD/LED display of minimum parameters: DC input voltage, DC current, AC Voltage and current (all 3 phases, in case of 3 phase), Instantaneous & cumulative AC output power, Daily DC energy produced and other parameters applicable standard. Communication interface RS 485 / RS 232.				
	c) Module mounting structure: The roof top solar plant generation units shall be installed by using supporting Aluminium/Galvanized MS structure (mass of zinc coating shall be as per IS4759) having minimum head room clearance of 2.4 meter above the terrace level / ground level. The mounting structure would be designed to sustain wind load and seismic parameter of the site of installation. All the structure shall be design as per applicable BIS code and the material shall also confirm the applicable BIS Code. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. The suitable arrangements for maintenance and cleaning shall be provided.				
	d) Real time online web interfaced Data Monitoring System complete with accessories for various parameters such as Solar Irradiance, temperature, AC Output Voltage and current, Output Power, Power factor, DC Input Voltage and Current, Time Active, Time disabled, Time Idle, Power produced and other parameters as per standard practices.				
	e) Array junction box & Main junction box with IP 65 protection and termination arrangement for incoming and outgoing cable along with glands, lugs and other accessories etc. as required. Each junction box shall be made of GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement with High quality Suitable capacity Metal Oxide Varistors(MOVs) (semiconductor diode with resistant applied voltage)/ surge arrestors and suitable Reverse Blocking Diodes, isolation switches isolate the DC input to Inverter, copper bus bar etc.				
	f) Lightning, surge voltage protection, earthing protection and grid islanding.				

	g) Cables: Connections & Interconnections by required size IR/UV protected XLPE insulated copper conductor 1.1 kV grade armored power and control cables(ISI Marked) along with supplying & fixing of necessary channel/conduit, GI cable trays, supports, lugs, thimble and other accessories etc. as required.				
	h) DC Distribution Board And AC Distribution Panel Board: IP65, free standing, metal cladded, having copper bus bar, having required protection and control gears, connection-interconnection, etc. as required.	11	54,280	Kwp	5,97,080.00
	Total of SH-XI- Solar photo voltaic system				5,97,080.00
	Total of All SH- I to X				1,13,70,690.00

Central Public Work Department					
NIT NO. 05/SE(Agra)/2026-27 – 30/EE/AGRA/2026-27					
Name of Work: “Construction of Office Building and Residential Quarters for SIB Etawah (U.P.) (SH: Civil and Electrical Work). “					
Estimated Cost put to tender (Rs.)			Rs. 5,59,44,611/-		
Performa for quoting the rates					
Name of Contractor:-					
S. No.	Name of Component	Estimated cost	Percentage above or below the estimated cost	%age in figures	Total Cost
1.	Civil Work	Rs. 4,45,73,921/-			
2.	Elect. Work	Rs. 1,13,70,690/-			