

BID DOCUMENT
For
Construction of Exhibition /
Multipurpose Hall at Kalagram,
Manimajra, Chandigarh (Composite
Work

Last Date of Submission of tender (on-line): _____.2026

Website: <http://etenders.chd.nic.in/nicgp>.

Tel: 0172-2511122

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PART-I



CHANDIGARH HOUSING BOARD

TERDER NOTICE

Notice Inviting e-Tenders

Executive Engineer-III on behalf of the Chairman, Chandigarh Housing Board, Chandigarh invites sealed Percentage rate bids through e-Procurement process from the enlisted Agencies/Firms/Contractors/Tenderer having valid enlistment certificate issued by any one of the specified departments i.e. UT Engineering Department/ Municipal Corporation Chandigarh/ CPWD / MES / Punjab PWD/ Haryana PWD & Himachal PWD and other State Government Departments, Board/ Corporations and Public Sector Undertakings for the work of Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)

Estimated Cost:- Rs.2,25,47,047/- Earnest Money:- Rs.4.51Lakh, Period of Completion:- 9 Months, Last date of submission of bid is __/__/2026 & date of opening of bid is __/__/2026.

For detail Milestone dates of Electronic Tendering are given at the website <http://etenders.chd.nic.in/nicgep>. Tel: 0172-2511122

Executive Engineer-III
for & on behalf of Chairman
Chandigarh Housing Board,
Chandigarh

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Detail Regarding Tendering Process

Name of work	Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)	
Estimated composite cost	Civil Work : Rs.1,49,16,159.00 PH Work : Rs. 19,10,378.00 Electrical Work : <u>Rs 57,20,510.00</u> Total :Rs.2,25,47,047.00	
Period of completion	9 Months	
Name of the Employer	Chandigarh Housing Board	
Adress of the Employer	Sector 9 D, Chandigarh	
Mode	E-Tendering	
Website	https://etenders.chd.nic.in/nicgep/app	
Integrity Pact duly filled, signed & stamped	The bidder must upload the copy of Integrity Pact duly filled, signed & stamped in the presence of witness along with other bid documents on the web site.	
Milestone Dates		
Downloading of e-tender document	Start date:	
	End date:	
Clarification regarding plans specifications schedule of quantities & set of terms	Start date:	
	End date:	
Date of submission of e-tender	Start date:	
	End date:	
Opening of technical bid (Online)		
Opening of price bid (Online)	To be intimated separately to all qualified bidders	
Bid validity period	75 days from the last day of receipt of bid.	
Earnest Money Deposit	Earnest money Deposit of Rs.4.51 Lakh may be deposited by bank-to-bank transfer using SBI MOPS or RTGS/NEFT transfer through https://etenders.chd.nic.in portal. Bidder can submit their bid only after depositing Earnest money Deposit online. 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	

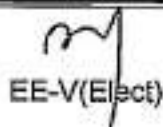
	the bid, shall not be accepted. Documentary proof of Earnest Money deposited from his/her own account should be uploaded. The amount of Earnest money Deposit is refundable and adjustable. The Earnest money Deposit shall be refunded online to the bidder account in case of all unsuccessful e-bids, provided it is not forfeited. The bidder must upload the copy of UTR No/ Transaction slip on the web site.
Proformance Security	The contractor, whose bid is accepted, will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule E and within the period specified in Schedule E. This guarantee shall be in form of Insurance Surety, Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period specified 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.

LIST OF DOCUMENT TO BE UPLOADED BY THE BIDDERS

1.	Fee
	i) EMD
	ii) Documentary proof of Earnest Money deposited from his/her own account.
2.	Post Qualification /Technical
	i. Check List
	ii. Integrity Pact Annexure IV duly filled signed and stamped in the presence of a witness.
	iii. Form A Letter of Transmittal as per attached proforma in Section II.
	iv. Valid Enlistment certificate.
	v. Form B Similar works during the last seven years
	vi. Form C Performance Report of works given in Form B.
	vii. Undertaking on Structural stability and soundness of already completed buildings and infrastructure projects.
	viii. Income Tax returns
	ix. Balance sheets duly audited by the Chartered Accountant & Profit/Loss statement during the last three years ending 31st March of the previous year duly signed by the CA.
	x. Affidavit as per Annexure I regarding no criminal proceedings and confirmation that eligible similar works have not been got executed on back to back basis
	xi. Certified copy of the power of attorney by the applicant in case of Non Consortium member as per Annexure II
	xii. Certificate of Registration under GST.
	xiii. Copy of PAN
	xiv. Certificate of registration with EPFO, ESIC if available.
	xv. Any other document as specified in the bid document.
3.	Finance
	i. Financial Bid

NOTE: - Hard copies duly self attested of the documents except Financial Bid listed at Sr. No.3 above shall be submitted by the lowest bidder (L-1) to the Executive Engineer-III.

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CHECK LIST TO ACCOMPANY THE 'ELIGIBILITY DOCUMENTS'

S. No.	Description	Remarks
1.	Whether the Earnest Money as per the Tender Notice has been uploaded?	Yes / No
2.	Whether Documentary proof of Earnest Money deposited from his/her own account uploaded?	Yes / No
3.	Whether the Integrity Pact duly filled, signed & stamped in the presence of a witness has been uploaded?	Yes / No
4.	Whether valid Enlistment certificate issued by any one of the specified departments as per Tender Notice has been uploaded?	Yes / No
5.	Whether definite proof from appropriate authority of having completed satisfactorily Similar during the last seven years ending last day of the month previous to the one in which tender are invited has been uploaded?	Yes / No
6.	Whether the Form 'A' Letter of Transmittal as per attached proforma in Part-II has been uploaded?	Yes / No
7.	Whether the Form 'B' - Details of similar works completed during last 7 years has been uploaded?	Yes / No
8.	Whether the Form 'C' - Performance Report of works referred to in Form-B has been uploaded?	Yes / No
9.	Whether Undertaking on Structural stability and soundness of already completed buildings and infrastructure projects has been uploaded	Yes / No
10.	Whether copy of Income tax returns and Balance sheets duly audited by the Chartered Accountant & Profit/Loss statement during the last three years ending 31st March of the previous year duly signed by the CA has been uploaded?	Yes / No
11.	Whether the Affidavit as per Annexure-I have been uploaded?	Yes / No
12.	Whether the Power of Attorney as per Annexure-II has been uploaded?	Yes / No
13.	Whether any additional condition in tender has been quoted?	Yes / No
14.	Whether the Scanned copies of self attested documents related to E.M.D. & other eligibility document has been uploaded along with the Bid?	Yes / No
15.	Whether all the statements, documents, certificates, uploaded owning responsibility for their correctness/ authenticity have been signed?	Yes / No
16.	Whether the Copy of Certificate of Registration under GST or	Yes/ No

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	Undertaking as per Notice Inviting Tender has been uploaded?	
17.	Whether the Copy of PAN has been uploaded?	Yes / No
18.	Whether the Certificate of registration with EPFO and ESIC has been uploaded?	Yes / No

DECLARATION

1. I/We _____ have carefully gone through all the conditions mentioned in the Bid Document and solemnly declare and affirm that I/we will abide by any penal action of CHB for disqualification or of black listing or determination of contract or any other action as deemed fit, taken by, the Department against me/us, in the event of any of the contents of our this application, the statements, documents, and certificates produced by me/us have been found/declared to be false/fabricated without any liability on CHB.

2. I/We hereby further declare that the Tender has been completed and submitted by us in the manner prescribed in the document and consider myself/ourselves eligible and in possession of all the documents required.

3. I/We hereby also declare that, I/We have not been blacklisted/ debarred/ Suspended/ demoted by any department of Chandigarh Administration or in of any state/Union Territory of the Republic of India for any reasons what so ever.

Date

Signature of the Bidder (s)
(Full name in capitals)
Designation

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**CHANDIGARH HOUSING BOARD
NOTICE INVITING TENDER**

1. Executive Engineer-III on behalf of the Chairman, Chandigarh Housing Board, Chandigarh invites sealed Percentage rate bids through e-Procurement process from the enlisted Agencies/ Firms/ Contractors/ Tenderer having valid enlistment certificate issued by any one of the specified departments i.e. UT Engineering Department/ Municipal Corporation Chandigarh/ CPWD / MES / Punjab PWD/ Haryana PWD & Himachal PWD and other State Government Departments, Board/Corporations and Public Sector Undertakings for the following work:-

Name of work and location.	Estimated cost put to Bid	Earnest Money	Period of completion	Last date & time of submission of Bid, copy of receipt of deposition of original EMD & other documents as specified in the NIT	Time & date of opening of Technical Bid.
Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)	Rs.2,25,47,047/-	Rs.4.51 Lakh	9 Months	Refer Detail regarding tendering process of Bid Document on website*.	Refer Detail regarding tendering process of Bid Document on website*.

*Website for detail of Milestones dates of Electronic Tendering please refer <http://etenders.chd.nic.in/nicgep>

Initial criteria for Eligibility for tender.

- 1.1. Applicants who fulfill the following requirements shall only be eligible to apply.
- Should have valid Enlistment certificate issued by any one of the above specified departments on the last date of submission of the Bids.
 - Should have satisfactorily completed during the last seven years ending last day of the month previous to the one in which tender is invited.
 - Three similar works each costing not less than Rs.90.19 Lakh or two similar works each of costing not less than Rs.1.36 Crore or one similar work of costing not less than Rs.1.81 Crore.
 - In case, the eligible work has been executed by a Joint Venture through one or more individual firm(s), then cost of completed

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work shall be distributed among the individual firm(s) in proportion to their share in Joint Venture and that will be considered as work experience for individual firm(s) for pre-qualification in bidding

Similar work shall mean 'Composite work which should include Civil, Public Health and Electrical work all executed under one agreement'.

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

- c. At the time of submission of Bid, contractor uploads Income tax returns and Balance sheets duly audited by the Chartered Accountant & Profit/Loss statement during the last three years ending 31st March of the previous year duly signed by the CA.
- d. Firm(s)/Contractors against whom any criminal proceedings are pending in any court of law relating to any project executed by the firm, shall not be considered for post-qualification.

To become eligible, for e- tendering, the tenderer shall have to furnish an affidavit as per Annexure-I. All the documents shall be duly attested & counter signed by the Bidders.

- e. GST registration Certificate, if already obtained by the bidder.

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

"If work is awarded to me, I/we shall obtain GST registration Certificate as applicable within one month from the date of receipt of award letter or before release of any payment by CHB, 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 CHB or GST department in this regard".

Note: All the documents shall be duly attested & counter signed by the agencies.

- 2. Agreement shall be drawn with the successful Tenderer on the prescribed Format of CPWD Form 7, which is available for sale in the market. Tenderers shall quote their rates as per various terms and conditions of the said form which will form part of the agreement. However the definitions

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contained therein with regard to CPWD Department and other designated authorities may be read as under:-

As per General Conditions of Contract Construction Works 2023	To be read as
CPWD	CHB
President of India	Chairman, CHB
Govt. of India	Chandigarh Housing Board
Director General	Chairman, CHB
Additional Director General	Chief Executive Officer, CHB
Department	Chandigarh Housing Board

For components of E&M works, the eligibility criteria for specialized agencies to be associated by the main contractor after award of work will be as detailed below:

S. No.	Component of Electrical (E & M)- Specialized works	Estimated Cost	Eligibility (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 tender).
1.	Fire Fighting System	Rs. 5,79,427/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs.2.32 Lakh Or Two similar works each costing not less than Rs.3.48 Lakh Or One similar work costing not less than Rs.4.64 Lakh
2.	Fire Alarm System	Rs.92,451/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs.0.37 Lakh Or Two similar works each costing not less than Rs.0.56 Lakh Or One similar work costing not less

			than Rs.0.74 Lakh
3.	CCTV	Rs. 2,78,942/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs.1.12 Lakh Or Two similar works each costing not less than Rs.1.68 Lakh Or One similar work costing not less than Rs.2.24 Lakh
4.	DG Set	Rs. 8,98,664/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs 3.60 Lakh Or Two similar works each costing not less than Rs.5.40 Lakh Or One similar work costing not less than Rs.7.19 Lakh
5.	UPS 10 KVA	Rs. 2,12,026/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs.0.85 Lakh Or Two similar works each costing not less than Rs.1.28 Lakh Or One similar work costing not less than Rs.1.70 Lakh
6.	Solar Power Plant	Rs. 5,50,942/-	Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids: Three similar works each costing not less than Rs.2.21 Lakh Or Two similar works each costing not less than Rs.3.31 Lakh Or One similar work costing not less than Rs.4.41 Lakh

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- i) The main contractor should either himself meet the eligibility criteria as defined in the bid document or he will have to associate with an agency for specialized works and has to submit details of such agencies confirming to the eligibility condition as defined in the bid document in Part C Schedule A,D,E, F along with M.O.U. to Engineer-in-charge of minor component within 60 days from the date of commencement of work. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of minor component within 10 days after submission of complete documents. Within 10 days of approval by the Engineer-in-Charge of the minor component, the contractor shall enter into a tripartite agreement with the associate agency and the Engineer-in-Charge (minor component) failing which a penalty of Rs. 5000/- per day for each day of delay shall be levied and deducted from the dues of the main contractor.
 - ii) 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 minor component. The new agency/agencies shall have also 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.
 - iii) The main contractor has to enter in to agreement with the contractor(s) associated by him for execution of specialized works. Copy of such agreement shall be submitted to EEs in charge of minor component as well as to EEs in charge of. Major component. In case of change of associated contractor, the main contractor has to enter into agreement with the new contractor associated by him.
 - iv) Verifiable completion certificates of the work of registration/ approval documents as the case may be, duly attested by the applicant shall be submitted. Valid Electrical Contractor's license, as the case may be, duly attested by the applicant shall also be submitted.
3. In this document the following words and expressions have the meaning hereby assigned to them:
- EMPLOYER means the Chairman, Chandigarh Housing Board, acting through the Executive Engineer.
- BIDDER/TENDERER/FIRM/ AGENCY/CONTRACTOR/APPLICANT means the individual, proprietary firm, firm in partnership, limited company private or public or corporation or Joint Venture Company.
- "Year" means "Financial Year" unless stated otherwise.
- CHB/ Board means "Chandigarh Housing Board"

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4. The time allowed for carrying out the work will be 9 Months from the date of start as defined in Schedule 'F' of Financial Bid in Part-III of this document or from the first day of handing over of the site, whichever is later in accordance with the phasing, if any, indicated in the Tender Document. In case of non-handing over of any part of site, the extension in time limit for the proportional delay shall be allowed as per the agreement.
5. The Site for the work is available.
6. Bid document consisting of plans, specifications, the schedule of quantities of the various classes of work to be done and the set of terms and conditions of the contract to be complied with by the Contractor whose bid may be accepted and other necessary documents, can be seen in the office of the Executive Engineer-III between 11.00 AM. & 3.00 PM from _____ 2026 to _____ 2026 everyday except on Saturdays, Sundays and Public Holidays.
7. Downloading and submission of Tender including Financial Bid will be done by **e-Procurement process** through the Chandigarh Administration web site: <http://etenders.chd.nic.in/nicgep>.

The agency shall upload Scanned copy of documents (duly attested and counter signed by agency) related to "Earnest Money Deposit" and 'Eligibility Documents'. However, certified copies of all the scanned and uploaded documents specified in the e-tender notice shall have to be submitted by the lowest bidder within week in the office of the tender opening authority.

8. Notice Inviting Tender excluding 'General Condition of Contract Construction Works 2023 with latest amendments (available in market for sale & available on official website of CPWD <http://cpwd.gov.in>) for execution of this work, can be downloaded from Chandigarh Administration web site <http://chandigarh.gov.in>. Bid document shall not be available on Chandigarh Administration website after the stipulated date & time for downloading.
9. Earnest money amount will have to be deposited as mentioned in Detail Regarding Tendering Process in shape as prescribed.
10. The bid submitted shall become invalid if:
 - a) The bidder is found ineligible.
 - b) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
 - c) 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.
 - d) A tenderer does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender,

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

11. The department reserves the right to reject any or all the prospective applications without assigning any reason and/or to restrict the list of qualified contractors to any number as deemed suitable by it, if too many bids satisfying the laid down criteria have been received.
12. The tender can be cancelled by the competent authority as per decision taken after receipt/ opening of bids as the case may be and the cancellation notice of the tender shall be uploaded against the respective tender ID in e-tender portal. However, at the time of the recall of the cancelled tender of same NIT, tender ID of cancelled tender shall have to be mentioned in the name of work.
13. The bidder, whose tender has been accepted, will be required to furnish 'Performance Guarantee' as mentioned in Detail Regarding Tendering Process.
14. The description of the work is as follows:

Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work) with Civil, PH, Elect. Component, specialized works of HVAC Sysytem, fire fighting System, fire alarm System, CCTV Surveillance System, DG SET 125 KVA, UPS 10 KVA & Solar Power Plant

Documents pertaining to the works will be open for inspection by the Tenderers at the office of the concerned EE of CHB. Tenderers are also advised to carefully inspect and examine the site and its surroundings and satisfy themselves, before submitting their tenders, 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 tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not. CHB will not accept any liability arising later on consequent to any misunderstanding or otherwise on the part of the tenderer. The tenderer 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 execution of the work unless otherwise specifically provided for in the contract document. Submission of a tender by a tenderer 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. if any are issued to him by the CHB and local conditions and other factors having a bearing on the execution of the work.

15. The competent authority on behalf of the Chairman, CHB does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without assigning any reason. All tenders in which

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any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer, the same shall be summarily rejected.

16. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.
17. The competent authority on behalf of the Chairman, Chandigarh Housing Board reserves with himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.
18. The contractor shall not be permitted to tender for works in the CHB. (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Chandigarh Housing Board. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
19. 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 Chairman, CHB 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 Chairman, CHB as aforesaid before submission of the bid or engagement in the contractor's service.
20. The tenders for the work shall remain open for acceptance for a period of 75 days from the last date of opening of bids.
 - i. If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the CHB shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - ii. If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the CHB 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. 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.
21. This 'Bid Document' shall form a part of the contract document. The successful tenderer/Bidder/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:
- The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as up loaded at the time of invitation of tender and the rates quoted on line at the time of submission of the Bid and acceptance thereof together with any correspondence leading there to.
 - General condition of contract for Central PWD works 2023, tender form of CPWD 7 as amended from time to time issued up to the last date of receipt of tender or other Standard C.P.W.D. Form as applicable.
22. **For Composite Tenders:**
- 22.1 The Executive Engineer- in- charge of the major component of the work will call tenders for the composite work. The cost of tender document and Earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite tender.
- 22.2 The tender document includes following three components:
- Part A:-** CPWD-6, CPWD-7/8 including schedule A to F for major component of the work, Standard General Conditions of Contract for CPWD 2024 as amended/modified up to last date of receipt of tender.
- 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, (SE in charge of major component shall also be competent authority under clause 2 and clause 5 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.
- The bidders must associate himself, with agencies as per NIT conditions.
- 22.3 The eligible tenderers for major component will quote rates for various items of minor components of work also. It will be obligatory on the part of the tenderer to sign the tender document for all the components (The schedule of quantities, conditions and special conditions etc.).
- 22.4 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 Chairman CHB. After the work is awarded, the main contractor will have to enter into one agreement with EE incharge of major component and has also to sign two

or more copies of agreement depending upon number of EE's/DDH incharge of minor components. One such signed set of agreement shall be handed over to EE/DDH incharge of minor component(s).

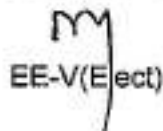
EE of major component will operate Part A and Part B of the agreement. EE/DDH incharge of minor component(s) shall operate Part- C alongwith Part A of the agreement.

- 22.5 The work in General shall be carried out as per CPWD Specifications and other systems and procedures being followed in CPWD with respect to the provisions contained in DSR and CPWD Works Manuals etc.
- 22.6 Entire work under the scope of composite tender including major and all minor components shall be executed under one agreement.
- 22.7 Security deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works. It is further clarified that during the payments of running bills to the agency, respective Divisions of major component & minor component would deduct the stipulated security from the running bills for their component of work done and would maintain books of account in their divisions for management of security deposit as per the condition laid down in the Bid Document till final bill
- 22.8 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 EE-in-charge of the discipline of minor components directly to the main contractor. The record shall be maintained independently by Engineer-in Charge of major and minor components
- 22.9 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.
- 22.10 Final bill of whole work shall be finalized and paid by the EE of major component.

Engineer(s) in charge of the minor components 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

23. The intending bidders are required to update their profile in Chandigarh Administration 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 *0172-2511122(EE-III), e- mail Id info@chbonline, or NIC helpline no. 0120-4711508, 0120-4001002 for technical issue. 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.

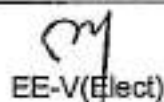
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24. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Executive Engineer, then the bid submitted shall become invalid and the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said Earnest Money as aforesaid. Further the tenderer shall not be allowed to participate in the re-tendering process of the work.
25. Any incorrectness/ deviation if noticed in the documents submitted by the agency, the same shall be viewed seriously and apart from cancellation of the work/tender, forfeiture of EMD, Criminal action will be initiated including suspension of business.
26. i) The tenderer is liable to be blacklisted as per policy of Chandigarh Administration 2009.
ii) The EMD will be forfeited if he has been found to have misled or has furnished false information in the forms / statements / certificates/online information submitted by him as proof in support of qualification requirements or record of performance such as abandoning of work not properly completed in earlier contracts, inordinate delays in completion of the works etc. etc. Further, if this contract has been awarded, the same shall be rescinded including forfeiture of EMD and Performance Guarantee.
27. Any contractor offering lower rates after the opening of tenders shall be liable to be black-listed.
28. Any disputes arising between the parties to this agreement / contract shall be subject to the exclusive jurisdiction of the Court of Chandigarh only.
29. Before the last date for submission of Tenders, the Tender Inviting Officer may modify any of the Contents of the Tender Notice, Tender documents by issuing amendment/ Addendum.
30. Any addendum/ amendments issued by the Tender Inviting Officer shall be part of the Tender Document.
31. To give prospective Tenderer reasonable time to take an addendum into account in preparing their bids, the Tender Inviting Officer may extend if necessary, the last date for submission of tenders.
32. The Executive Engineer will evaluate whether each Tenderer is satisfying the eligibility criteria prescribed in the tender document and declares them as a qualified Tenderer and selected for next stage of opening of Price Bid.
33. If the technical bid of a Bidder is not satisfying any of the eligibility criteria it will be rejected by the Executive Engineer.
34. If any alteration is made by the Bidder in the Bid documents, the conditions of the contract, the drawings, specifications or statements/ formats or quantities the tender will be rejected.
35. Bidder shall be scrutinized in accordance with the conditions stipulated in the Tender document. In case of any discrepancy of non-adherence Conditions the Tender accepting authority shall communicate the same which will be binding

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- both on the tender Opening authority and the tenderer. In case of any ambiguity, the decision taken by the Tender Accepting Authority on tenders shall be final.
36. The Executive Engineer will evaluate and compare the price bids of all the qualified Tenderer.
37. The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information.
38. No information/documents shall be entertained after submission of bid unless it is required to clarify the query raised by employer. No fresh/revised mandatory document is permitted at this stage.
39. The cost incurred by the Bidder in preparing this application, in providing clarifications or attending discussions/ conferences in connection with this document shall be borne by the Tenderer and the Board in no case will be responsible or liable for these costs, regardless of the conduct or outcome of the process.
40. During execution of the work, if found that the contractor had produced false/ fake certificates of experience he will be black listed and the contract will be terminated
41. The department reserves the right to reject any prospective application without assigning any reason.
42. **CBuD MANDATE**

Excavator/Contractor must submit "prior intimation notice" by raising excavation enquiry using the "Call Before u Dig" mobile application" (CBuD App) before the initiation of any type of digging/excavation; otherwise, appropriate action against excavator may be taken".

Executive Engineer-III,
Chandigarh Housing Board
Chandigarh.

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PART-II

DOCUMENT RELATED TO ELIGIBILITY CRITERIA AND OTHER RELATED DOCUMENTS



FORM-A

LETTER OF TRANSMITTAL

From:
(agency name & address)

To

Executive Engineer-III,
Chandigarh Housing Board,
Chandigarh.

Sub: Submission of Bid for the work Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)

Sir/Madam

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

1. I/ we hereby certify that all the statements made and information supplied in the enclosed Forms B and C and accompanying statement are true and correct.
2. I/ we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I / We submit the Following certificates in support of our suitability, technical know how and capability for having successfully completed the following eligible similar works:-

Sr. No.	Name of work/Project and location	Certificate from
1		
2		
3		

Certificate:-

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

Enclosures:

Seal of bidder

Date of submission

SIGNATURE(S) OF BIDDER(S)

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FORM 'C'

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORM "B"

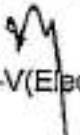
1.	Name of work/Project & Location	
2.	Owner or sponsoring organization	
3.	Agreement No.	
4.	Estimated Cost	
5.	Tendered Cost i. Allotted Amount ii. Actual completed cost	
6.	Date of Start	
7.	Date of completion	
(i)	Stipulated date of completion	
(ii)	Actual date of completion.	
8.	a) Whether case of levy of compensation for delayed has been decided or not.	
	b) if decided, amount of compensation levied for delayed completion if any.	
	c) Litigation/arbitration cases Pending/in progress with details	
9.	Whether the work was done on back to back basis (yes / no)	
10.	Performance Report	
1)	Quality of Work	Outstanding/Very Good/ Good / Poor
2)	Financial soundness	Outstanding/Very Good/ Good / Poor
3)	Technical Proficiency	Outstanding/Very Good/ Good / Poor
4)	Resourcefulness	Outstanding/Very Good/ Good / Poor
5)	General behavior	Outstanding/Very Good/ Good / Poor

Certified that M/s has completed the above work with as per details mentioned above.

Dated:

Executive Engineer or Equivalent

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FORM 'D'

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

I/we undertake and confirm that any building / infrastructure constructed by our firm / 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 CHB, 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 CHB.

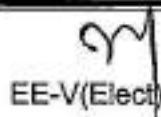
The decision of Engineer-in-Charge or any higher authority shall be final and binding.

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).

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ANNEXURE-I

**SPECIMEN PROFORMA FOR THE AFFIDAVIT TO BE SUBMITTED BY THE
APPLICANT ALONG WITH OTHER DOCUMENTS.**

(On Judicial Stamp paper duly attested by Ist class Magistrate or Notary Public)

I, _____ S/o Sh. _____ authorized
representative of _____ with its office at _____
_____ solemnly affirm and declare as under on behalf of the firm:-

- 1) I/We in the name and style of _____ had applied for the
work **Construction of Exhibition / Multipurpose Hall at Kalagram,
Manimajra, Chandigarh (Composite Work).**
- 2) The undersigned hereby certify that there is no criminal proceedings pending/
ongoing in any court of law regarding any construction project executed by me/us.
- 3) The undersigned hereby certify that all the documents and information submitted
with the tender/Bid are 'True' & I/We stands fully responsible as per law for their
genuineness and correctness.
- 4) I/we undertake and confirm that the 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 the department then I/we shall be debarred for
bidding in CHB in future forever. Also if, such a violation comes to the notice of
the department before date of start of work, the Engineer-in-Charge shall be free to
forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.
(Scanned copy to be uploaded at the time of submission of bid).

Place: _____
Dated: _____

Authorized Signatory of
firm/Deponent

VERIFICATION:

I the above named signatory/deponent do hereby solemnly affirm & declare that
the contents of this affidavit are true to the best of my knowledge & nothing has been
concealed therein.

Place: _____
Dated: _____

Authorized Signatory of
firm/Deponent

ANNEXURE-II

FORMAT FOR POWER OF ATTORNEY- by all individual Applicants

(on judicial Stamp paper duly attested by First Class Magistrate/Notary)

Dated: _____

To whomsoever it may Concern

Know all men by these presents, we _____ (name and registered office address of the Applicant) do hereby constitute, appoint and authorize Mr. _____ (Name of the Person(s)), domiciled at _____ (Address), acting as _____ (Designation and the name of the firm), as Authorized Signatory and whose signature is attested below, as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our request for prequalification work of _____, including signing and submission of all documents and providing information and responses to clarifications/enquiries etc. as may be required by CHB and signing of agreement if awarded the said work.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For _____

(Signature)

(Name, Title and Address)

Accept

(Attested signature of Mr. _____)

(Name, Title and Address of the Attorney) _____

Notes:

- To be executed by the Applicant
- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a resolution / power of attorney in favor of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the executant(s)

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ANNEXURE-III

On non-judicial stamp paper of minimum Rs.100/-

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

**Form of Bank Guarantee for Earnest Money Deposit/Performance
Guarantee/Security Deposit**

1. Whereas the Executive Engineer-III, on behalf of the Chairman, CHB (hereinafter called "The Government") has invited bids under _____ (NIT number) _____ dated for **Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work).**

OR**

Whereas the Executive Engineer _____ (name of division) CHB, Chandigarh on behalf of the Chairman, CHB (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 up to _____ (date)* as **Earnest Money Deposit/Performance Guarantee/Security Deposit** 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

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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 9 Months where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

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

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ANNEXURE-IV

To be signed by the bidder and same signatory competent/ authorised to sign the
relevant contract on behalf of CHB.

INTEGRITY PACT

(Integrity Pact is applicable for all works of estimated cost put to the tender equal to or
more than the threshold value given in Schedule-F)

This Integrity Agreement is made at..... on this day of..... 2026

BETWEEN

Chairman, Chandigarh Housing Board represented by the Engineer-in-Charge (hereinafter
referred to as the Principal, which expression shall unless repugnant to the meaning or
context hereof include its successors and permitted assignees)

AND

(Name and address of the bidder)

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

Preamble

WHEREAS the Principal has floated the tender (NIT No.) (hereinafter
referred to as Tender) and intends to award, under laid down organizational procedure,
contract for **Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra,
Chandigarh (Composite Work)** hereinafter referred to as the "Contract".

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

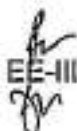
AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into
this Integrity Agreement (hereinafter referred to as Integrity Pact), the terms and
conditions of which shall also be read as integral part and parcel of the Tender/Bid
documents and Contract between the parties.

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

Articles

Article 1: Commitment of the Principal

- 1) The Principal commits itself to take all measures necessary to prevent corruption
and to observe the following principles:
 - (a) No employee of the Principal, personally or through any of his/her family
members, will in connection with the Tender, or the execution of the
Contract, demand, take a promise for or accept, for self or third person, any
material or immaterial benefit which the person is not legally entitled to.

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- (b) The Principal will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during the Tender process, provide to a Bidder(s) the same information and we not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.
- (c) The Principal shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- 2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/ Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

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

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

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behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

- (e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
4. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice, willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.
5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use coercive practices (which shall include the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property) to influence their participation in the tendering process.

Article 3: Consequences of Breach

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

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal. Such exclusion may be forever or for a limited period as decided by the Principal.
2. Forfeiture of Earnest Money Deposit Performance Guarantee/Security Deposit: If the Principal has disqualified the Bidder(s) from the Tender process prior to the award of the contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal apart from exercising any legal rights that may have accrued to the Principal, may in its

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considered opinion forfeit the entire amount of Earnest Money Deposit Performance Guarantee and Security Deposit of the Bidder/Contractor.

3. Criminal Liability: If the Principal obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of PC Act, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1. The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal.
3. If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may, at its own discretion, revoke the exclusion prematurely.

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

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement by any of its Subcontractors/sub-vendors.
2. The Principal will enter into pacts on identical terms as this one with all Bidders and Contractors.

Article 6- Duration of the Pact

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

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

Article 7- Other Provisions

1. This Integrity Pact is subject to Indian Law, place of performance and jurisdiction is the Head quarters of the Division of the Principal, who has floated the tender.
2. Changes and supplements as well as termination notice need to be made in writing.
3. If the Contractor is a partnership or a consortium, this Integrity Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Integrity Pact must be signed by a representative duly authorized by board resolution.
4. Should one of several provisions of this Integrity Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Pact, any action taken by the Principal in accordance with this Integrity Pact or interpretation thereof shall not be subject to arbitration.
6. In view of the nature of integrity pact, the Integrity Pact is irrevocable and shall remain valid even if the main tender/contract is terminated till the currency of the integrity pact.

Article 8- Legal and Prior Rights

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

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

(For and on behalf of Principal)

(For and on behalf of Bidder/Contractor)

WITNESSES:

1

(Signature, name and address)

2

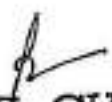
(Signature, name and address)

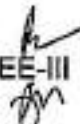
Place:

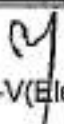
Dated :

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


Supdt.


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EE-V(Elect)


EE-VI(PH)

FORMAT OF INDEMNITY BOND.

(To be furnished in Stamp paper as per Stamp Act)

(At presents not less than Rs.80/-Stamp paper)

This deed of indemnity executed by hereinafter referred to as Indemnifier which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, representative and assignees in favour of Chandigarh Housing Board, hereinafter to as the indemnified which expression shall unless repugnant to the context of meaning thereof, include its successors and assignees witness us to.

Whereas the indemnified herein has awarded to the Indemnifier therein a contract for the 'Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)' terms and conditions set out interalia in contract/Award No. _____ valued at Rs. _____ only)

And whereas the above mentioned contract provides for ' _____ ' as per terms & conditions of the contract.

The indemnifier hereby irrevocably agrees to indemnify the indemnified that he shall be liable for and shall also indemnify the CHB and its employees against all liabilities, losses, claims, demands, proceeding, damages, costs, charges and expenses and further agrees to defend, indemnify and hold the Board and its employees harmless from any penalty whatsoever in respect of any injury or damage to any property of to personals during the execution of work or by the action of any central or state or local authority for violation by the contractor or sub-contractor engaged on the work in respect of his contractual obligations emanated from the contract already referred to the extent of Rs. _____/- Rupees _____ only)

This indemnity shall be in force up to the date of the item from our end.

Name

Designation

WITNESS:

1.

2.

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PART-III

FINANCIAL BID

**Special Conditions and other related
documents for submission of Financial Bid**



INSTRUCTIONS FOR CONTRACTORS

1. Tender to be witnessed at page No. 42 of Tender Documents.
2. The tender/ tenders containing conditions contrary to those specified in this document shall be summarily rejected.
3. In Schedule - 'A' appended to the Tender Documents, the %age rate must be filled both in words and figures. Accordingly, the overall quoted amount of the tender should be worked out.
4. The contractor(s) shall quote the rates keeping in mind, 'General Conditions of Contract Construction Works 2023 as amended from time to time, special contract conditions and particular specifications enshrined under the Bid Document etc.
5. It may be noted that in the present Contract Clause 10CC is Not applicable.

PART- A

Major Component of the work

Standard General Conditions of Contract Construction Works 2023 with latest addition as applicable with all amendments/ modifications	Available in market for sale/ CPWD website.
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C.H.B.-C.P.W.D - 7

CHANDIGARH HOUSING BOARD

STATE	U.T., Chandigarh	CIRCLE	I
BRANCH	Civil	DIVISION	III, CHB
ZONE	Chandigarh	SUB DIVISION	VII,

PERCENTAGE RATE TENDER & CONTRACTS FOR WORKS

Tender for the work of **Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)**

To be opened in presence of tenderers who may be present at _____ Hours
on ___/___/2026 in the office of Executive Engineer-III, Chandigarh Housing Board,
Chandigarh.

Downloaded by _____ (contractor)

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 Chairman, CHB within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

We agree to keep the tender open for Seventy five (75) days from the last day of receipt of bids and not to make any modifications in its terms and conditions.

A sum of Rs.4.51 Lakh has been deposited by bank-to-bank transfer using SBI MOPS or RTGS/ NEFT transfer through <https://etenders.chd.nic.in> portal. A copy of UTR No/ Transaction slip is scanned & uploaded. If I/we, fail to furnish the prescribed performance guarantee within prescribed period, I/we agree that the said Chairman, CHB 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 Chairman, CHB 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, otherwise 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, 12.3 and 12.5 of the tender form.

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[Signature]

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[Signature]

EEVII(PH)
[Signature]

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 the eligible similar works 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 the department then I/we shall be debarred for tendering in CHB in future forever. Also if, such a violation comes to the notice of the department before the date of start of work then the Engineer-in-charge shall be free to forfeit the entire amount of Earnest Money/ Performance Guarantee.

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

Signature of the contractor

Postal Address

Dated _____

Witness: _____

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 Chairman, Chandigarh Housing Board, for a sum of Rs. _____ (Rs. _____)

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

- a)
- b)
- c)

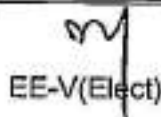
For & on behalf of the Chairman,
Chandigarh Housing Board
Chandigarh.

Signature

Dated

Designation


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EEVII(PH)

PERFORMA OF SCHEDULES

SCHEDULE "A"

Schedule of quantities (as per PWD-3)

Major Component of Work (Civil Work)

Schedule of Quantities for Civil Work (Enclosed) which starts at page -51

SCHEDULE "D"

Extra schedule for specific requirements/ documents for the work if any:-	Nil
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SCHEDULE "E"

	Reference to General Conditions of contract	GCC for Construction Works 2023 with amendments upto date
	Name of Work	Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh (Composite Work)
	Estimated cost of Work	Rs.2,25,47,047/-.
i)	Earnest Money	Rs.4.51 Lakh (to be returned after receiving performance guarantee)
ii)	Performance Guarantee	5% of the tendered value
	A bid will be treated as abnormally low if the quoted bid amount is lesser than 80% of the estimated cost put to tender. Requirement of Additional Performance Guarantee (APG): In case of abnormally low bids as defined above, the bidder Shall be required to submit Additional Performance Guarantee (APG) in addition to the Standard Performance Guarantee (PG). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the of 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be 0.8A-0.7A). The Additional Performance Guarantee (APG) shall be in the prescribed format of Performance Guarantee and has to be submitted within the time frame prescribed for submission of Performance Guarantee. The other terms and conditions of release etc. of APG shall be same as that of PG.	
iii)	Security Deposit	2.5% of tendered value

SCHEDULE "F"

GENERAL RULES AND DIRECTIONS

Officers inviting tender :-	Executive Engineer-III, Chandigarh Housing Board, Chandigarh.
Definitions	
2(vi) Engineer-in charge	Executive Engineer-III,

	Chandigarh Housing Board, Chandigarh.
2(viii) Accepting Authority	Chandigarh Housing Board, Chandigarh.
2(x) Percentage on cost of materials and labour to cover all overheads and profits.	(7.5% CP & 7.5 % OH). 15%
2(x) (b) Standard Schedule of Rates	Delhi Schedule of Rates (DSR) 2023 with correction slips issued up to the last date of submission of bid.
2(xi) Department	Chandigarh Housing Board, Chandigarh
9(ii) Standard CPWD Contract form General Conditions of Contract for Construction Works 2023, CPWD Form 7 as modified & corrected upto	Previous day of the last date of submission of the tender.
Clause 1	
i) Time allowed for submission of Performance Guarantee , programme chart (Time and progress) and applicable labour licenses , registration with EPFO, ESIC and BOCW welfare board or proof of applying there of from the date of issue of letter of acceptance	7 Days
ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above	15 days
Clause 2	
Authority for fixing compensation under clause-2	Superintending Engineer, CHB
Clause 5	
Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given at	15 days
Page No:	85-86
Time allowed for execution of work	9 Months
Authority to decide:	
(i) Authority to convey the decision of shifting of milestone and Extension of time	Executive Engineer

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(ii) Authority to decide rescheduling of mile stone and extension of time			Superintending Engineer, CHB
(iii) Shifting of date of start in case of delay in handing over of site			Superintending Engineer, CHB
Performa of Schedules Clause 5 Schedule of handing over of site			
Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
Part A	Portion without any hindrance	100%	15 Days
Part B	Portions with encumbrances	Nil	-
Part C	Portions dependent on work of other agencies	Nil	-
Clause 6			
Computerised Measure Book (CMB) / Electronic Measurement Book (EMB)			CMB
Clause 7			
Gross work to be done together with net payment/ adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.			Rs.9.00 Lakh subject to one payment per month. (However bill of lesser amount may be paid as per discretion of EIC)
Clause 7A			
Whether Clause 7A shall be applicable.			Yes, Applicable
Clause 8			
Authority to decide compensation on account if contractor fails to submit completion plans			Engineer-in-Charge
Clause 10 A			Applicable
List of testing equipments to be provided by the contractor at site lab.			
Equipments for Testing of Materials & Concrete at Site Laboratory			
All necessary equipment for conducting all necessary tests shall be provided at the site laboratory by the contractor at his own cost. The following minimum laboratory equipments shall be set up at site office laboratory:-			
Sr No	Equipment		Number(Minimum)

	As per (Table-I) attached at page No:49	
Clause 10 B(ii)		
Whether Clause 10B(ii) shall be applicable.	Not applicable,	
Clause 10 C	Not applicable,	
Component of labour expressed as percent of value of work		
Clause 10 CC	Not applicable,	
Clause 11		
Specification to be followed for execution of work.	CPWD Specifications with correction slips upto date.	
Clause 12		
12.2 (c) Deviation Limit beyond which clauses 12.2 (c) shall apply for Building work	100%	
12.4		
(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	100%	
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	100%	
Clause 16		
Competent authority for deciding reduced rates.	Superintending Engineer, CHB of Major Component	
Clause 18		
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site	All Tool & Plants, Safety equipments, ladder etc., required to be deployed by the contractor at site at his own cost	
Clause 19		
Clause 19 C	Rs.500/- penalty for each default.	
Clause 19 D	Rs.500/- penalty for each default.	
Clause 19 G	Rs.500/- penalty for each default.	
Clause 19 K	Rs.500/- penalty for each default.	

Clause 25					
Standard Clause -25 of GCC deleted and replaced as under: Any disputes arising between the parties to this agreement / contract shall be subject to the exclusive jurisdiction of the Court of Chandigarh only					
Clause 32					
Requirement of technical representative(s) and recovery rates					
	Requirement of Technical Staff		Minimum experience (Years)	Designation of Technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
Sr.No	Qualification	Number (of Major + Minor component)			
1	Graduate Engineer or Diploma Engineer Civil & Public Health Electrical	1 1	2 or 5 respectively	Project Manager cum planning/quality/site/billing Engineer	Rs.15000/- per month per person
Assistant Engineer retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.					
Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.					
Clause 38					
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.			
ii)	Variations permissible on theoretical quantities:				
	(a)	Cement For works with estimated cost put to tender not more than Rs.25 lakh For works with estimated cost put to tender more than Rs.25 lakh		3% plus/minus 2% plus/minus	
	(b)	Bitumen All Works		2.5% plus & only & nil on minus side	
	(c)	Steel reinforcement and structural steel section for each diameter, section and category		2% plus/minus	
	(d)	All other materials		Nil	

TABLE-I

LIST OF EQUIPMENT FOR FIELD TESTING LABORATORY

1. Balances
 - (i) 7 kg. to 10 kg. capacity, semi-self indicating type - accuracy 10 gm.
 - (ii) 500 gm. capacity, semi-self indicating type - accuracy 1 gm.
 - (iii) Pan balance- 5 kg. capacity - accuracy 10 gms.
2. Ovens-electrically operated, thermostatically controlled upto 110°C - sensitivity 1°C.
3. Sieves: as per IS 460-1962.
 - (i) I.S. sieves - 450mm internal dia, of sizes 100 mm, 80 mm, 63mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75mm, complete with lid and pan.
 - (ii) I.S. sieves- 200mm internal dia (brass frame) consisting of 2.36mm, 1.18mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns, with lid and pan.
4. Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.
5. Equipment for slump test- Slump cone, steel plate, tamping rod, steel scale, scoop.
6. Dial gauges, 25 mm travel - 0.01 mm/division least count - 2nos.
7. 100 tonnes compression testing machine, electrical-cum manually operated.
8. Graduated measuring cylinders 200 ml capacity - 3 Nos.
9. Enamel trays (for fluorescence test for bricks)-
 - (i) 300 mm × 250 mm × 40 mm- 2 nos.
 - (ii) Circular plates of 250 mm dia - 4 nos.
10. Cube Moulds 150mmx150mmx150mm=18 Nos. Minimum

ABSTRACT OF COST

Name of Work: - Construction of Exhibition / Multipurpose Hall at Kalagram,
Manimajra, Chandigarh (Composite Work)

MAJOR COMPONENT (CIVIL)

Sub Head	Description	Sub Head Total
1	Carriage of Material	29,875.00
2	Earth Work	3,18,086.00
3	Concrete Work	4,95,594.00
4	Reinforced Cement Concrete	76,29,808.00
5	Masonry Work	15,57,635.00
6	Cladding Work	2,19,071.00
7	Wood and PVC Work	10,96,739.00
8	Steel work	12,265.00
9	Flooring	8,17,545.00
10	Roofing	13,80,311.00
11	Finishing	4,16,164.00
12	Dismantling and Demolishing	29,416.00
13	Aluminium Work	2,80,867.00
14	Water Proofing	6,32,783.00
	Total	1,49,16,159.00

Executive Engineer-III,
Chandigarh Housing Board,
Chandigarh

**Schedule of Quantities for the work - Construction of Exhibition / Multipurpose Hall at Kalagram, Manimajra, Chandigarh
(Composite Work). Major Component (CIVIL)**

S.No	Description	Qty	Unit	Rate	Amount	Sub total
Sub Head A Item 1	CARRIAGE OF MATERIALS					
1	By Manual Labour including loading, unloading and stacking for lead less than 0.50 KM					
	Earth (for ~0.2 Km)	65.08	cum	459.05	29875	
	Total Sub Head A					29875
Sub Head B Item 2 to 7	EARTH WORK					
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	492.68	cum	173.56	85510	
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.					

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
4	All kinds of soil. 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.	35.92 cum	cum	254.53	9143	
5	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	463.52 cum	cum	191.65	88834	
6	Supplying chemical emulsion in sealed containers including delivery as specified.	61.73 cum	cum	2076.63	128190	
7	Chlorpyrifos/ Lindane emulsifiable concentrate of 20% Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :	9.23 litre	litre	229.54	2119	
	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc.:					
	With Chlorpyrifos/ Lindane E.C. 20% with 1% concentration	82.09 metre	metre	52.26	4290	
	Total Sub Head B					318086

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
Sub Head C Item 8 to 9	CEMENT CONCRETE (CAST IN SITU)					
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :					
	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources: 8 graded stone aggregate 40 mm nominal size derived from natural sources)	68.95 cum	cum	6660.89	459268	
9	Making plinth protection 50 mm thick of cement concrete 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) 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.	49.58 sqm	sqm	732.68	36326	
	Total Sub Head C					495594
Sub Head D Item 10 to 14	REINFORCED CEMENT CONCRETE					
10	Centering and shuttering including strutting, propping etc. and removal of form for					

S.No	Description	Qty	Unit	Rate	Amount	Sub total
10.1	Foundations, footings, bases of columns, etc. for mass concrete	109.67 sqm	sqm	383.45	42053	
10.2	Suspended floors, roofs, landings, balconies and access platform	301.22 sqm	sqm	906.68	273110	
10.3	Shelves (Cast in situ)	2.09 sqm	sqm	906.68	1895	
10.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers	392.18 sqm	sqm	720.07	282397	
10.5	Columns, Pillars, Piers, Abutments, Posts and Struts	232.99 sqm	sqm	939.98	219006	
10.6	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	2.72 sqm	sqm	383.45	1043	
10.7	Edges of slabs and breaks in floors and walls					
10.7.1	Under 20 cm wide	84.83 metre	metre	203.92	17299	
10.7.2	Above 20 cm wide	5.03 sqm	sqm	859.55	4324	
10.8	Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to pilasters and columns and the like	2.83 sqm	sqm	943.45	2670	
11	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.	10780.00 kg	kg	105.45	1136751	

S.No	Description	Qty	Unit	Rate	Amount	Sub total
12	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.	30283.00 kg	kg	105.45	3193342	
13	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					
13	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					

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
	extra cement.					
	All works upto plinth level					
13.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	88.73 cum	cum	9293.90	824648	
	All works above plinth level upto floor V level					
13.2	Concrete of M25 grade with minimum cement content of 330 kg /cum	163.01 cum	cum	9641.66	1571687	
14	Add for using extra cement in the items of design mix over and above the specified cement content therein.	83.07 quintal	quintal	717.23	59583	
	Total Sub Head D					7629808
Sub Head E Item 15 to 20	MASONRY WORK					
15	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:					
	Cement mortar 1:4(1 cement :4 coarse sand)	31.18 cum	cum	7207.14	224719	
16	Extra for forming cavity 5 cm to 11.5 cm wide in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M.S. ties 300 mm long of 25x3 mm section at not less than 3 ties per sqm as per approved design.	225.62 sqm	sqm	229.01	51669	

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
17	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.					
18	Cement mortar 1:4(1 cement :4 coarse sand) Extra for providing and placing in position 2 Nos 6 mm dia. M.S. bars at every third course of half brick masonry.	328.62 sqm 328.62 sqm	sqm sqm	1098.87 102.48	361111 33677	
19	Brick work with common burnt clay machine moulded modular bricks of class designation 12.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand).					
19.1	From ground level upto plinth level	2.05 cum	cum	6842.17	14026	
19.2	Above plinth level upto floor V level	96.66 cum	cum	8772.09	847910	
20	Extra labour for decorative work in brick masonry of parapet walls, including cutting bricks to required shapes, maintaining line, level and pattern, providing temporary supports during construction, complete as per architectural drawings and direction of Engineer-in-Charge	78.00 Nos	Each	314.40	24523	
	Total Sub Head E					1557635
Sub Head F Item 21 to 24	CLADDING WORK					

S.No	Description	Qty	Unit	Rate	Amount	Sub total
21	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 of edges to give high gloss finish etc. complete at all levels.					
	Granite stone slab of all colour and texture except black, Cherry/Ruby red					
21.1	Area of slab upto 0.50 sqm	0.85	sqm	4078.17	3466	
21.2	Area of slab over 0.50 sqm	10.27	sqm	3763.32	38649	
22	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.	4.00	Nos	956.98	3828	
23	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.					

EE-VI
EE-V(Elect)

EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	Wedge expansion type					
	Fastener with threaded dia 10 mm	25.00 Nos	Each	39.11	978	
24	Providing and fixing 1st quality ceramic glazed wall tiles 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.	138.85 sqm	sqm	1239.83	172150	
	Total Sub Head F					219071
Sub Head G Item 25 to 47	WOOD AND P. V. C. WORK					
25	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).					
	Kiln seasoned and chemically treated hollock wood	0.42 cum	cum	81528.42	34242	

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
26	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 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	16.57 sqm	sqm	2339.57	38767	
27	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	16.57 sqm	sqm	452.09	7491	
28	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).	11.99 sqm	sqm	104.33	1251	
29	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete:					
	Kiln seasoned and chemically treated hollock wood					
	50x12 mm	43.06 metre	metre	181.82	7829	

S.No	Description	Qty	Unit	Rate	Amount	Sub total
30	Providing 40x5 mm flat iron hold fast 400 mm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 300x100x150 mm 1:3:6 mix (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size).	42.00 Nos	Each	223.77	9398	
31	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.	9.00 Nos	Each	961.34	8652	
32	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete					
	250x16 mm	2.00 Nos	Each	254.82	510	
33	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete					
	250x10 mm	4.00 Nos	Each	112.60	450	

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
34	Providing and fixing 50 cm long aluminium kicking plate of size 100x3.15 mm, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete.	2.00 Nos	Each	234.09	468	
35	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 125 mm					
36	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.	4.00 Nos	Each	64.78	259	
37	Twin rubber stopper	7.00 Nos	Each	70.75	495	
	Providing and fixing bright finished brass 100 mm mortice latch and lock, ISI marked, with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS: 1868) aluminium lever handles of approved quality with necessary screws etc. complete.	6.00 Nos	Each	849.67	5098	

EE-III

EE-V(Elect)

EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
38	Providing and fixing partition upto ceiling height consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm(both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre. The boards are to be fixed to the frame work with joints staggered to avoid through cracks, M.S. fixing channel of 99 mm width (0.9 mm thick having two flanges of 9.5 mm each) to be provided at the horizontal joints of two boards, fixed to the					

EE-V(E)ect EE-V(I)(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	studs using metal to metal flat head screws, including jointing and finishing to a flush finish with recommended jointing compound, jointing tape, angle beads at corners (25 mm x 25 mm x 0.5 mm), joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete.					
	75mm overall thickness partition with 12.5 mm thick double skin tapered edged plain Gypsum plaster board conforming to IS: 2095: (part I): 2011 (Board with BIS certification marks)	7.11 sqm	sqm	1777.82	12640	
39	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.					
	1.0 mm thick	33.13 sqm	sqm	877.39	29068	
40	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.	2.00 Nos	Each	8180.56	16361	

EE-III EE-V(Elect) EE-VI(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
41	Providing and fixing factory made uPVC glazed/wire mesh windows/ doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD Specification, uPVC extruded glazing beads, interlocks and inline sash adaptor packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge. Wire mesh / Glazing of plain/ toughened/ laminated/ double glass unit with / without high performance coatings as per design					

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately. Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for (i) Sites with basic wind speed > 45 m/sec as per IS 875 — Part 3 (ii) Sites with structure height more than 20m for all wind speeds					
	Two track two panels sliding window with Aluminium channel for roller track, wool pile, nylon rollers with SS 304 body.					
41.1	Using R4 series with frame (64 mm & above) x (45 mm & above) & sash (44 mm & above) x (55 mm & above) with zinc alloy (zamak) powder coated handle on every panel along with multi-point locking system (Height above 1.8m).	31.47 sqm	sqm	9415.00	296290	
	Fixed window/ ventilator without mullion /transom.					
41.2	Using R3 series with frame (55 mm & above) x (45 mm & above). (Height upto 2.5 metre)	13.38 sqm	sqm	6922.99	92630	
	Fixed window/ ventilator with mullion /transom.					
41.3	Using R4 series with frame (64 mm & above) x (50 mm & above) & mullion (64 mm & above) x (70 mm & above). (Height above 2.5 metre)	3.25 sqm	sqm	6383.97	20748	

EE-III

EE-V(Elect)

EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	Ventilator Casement window single panel with or without fixed panel with S.S. 304 friction hinges as per size and weight of sash, single point locking zinc alloy (zannak) powder coated handles.					
41.4	Using R3 series with frame (55 mm & above) x (45 mm & above) & sash /mullion (55 mm & above) x (65 mm & above). (Height above 1.2 metre)	18.96 sqm	sqm	11655.42	220987	
42	Providing and fixing stainless steel (SS-304 grade) friction hinges to the side/top hung uPVC windows, of approved quality, with necessary stainless steel screws etc. as per direction of Engineer-in-charge.					
	200 x 19 x 1.9 mm					
43	Providing and fixing casement handle made of zinc alloyed (white powder coated) for uPVC casement window with necessary screws etc. complete.	9.00 Nos	Each	372.84	3356	
		9.00 Nos	Each	225.92	2033	
44	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 120 gm/sqm) suitable for mounting 120 minutes Fire Rated Glazed Door Shutters. The frame shall be filled with mineral wool insulation having density minimum 96Kg/sqm. The frame will have a provision of G.I. anchor fasteners 14 nos (5 each on	8.38 metre	metre	2154.03	18051	

EE-III
EE-V(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
45	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 100x89x3 mm for fixing of fire rated glazed shutter. The frame shall be finished with an 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). 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 separately).	5.99	sqm	11751.30	70390	

EE-V(Elect)

EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
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/sqm) 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 accredited 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.	0.56	sqm	42708.72	23917	

EE-III
EE-VI(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
47	Providing & fixing Toilet Cubicle made of compact laminate panels with following dimensions (Thickness 12mm, Door 600x1785, Divider Height 1820, Overall Height 1995, Depth 1500, Width 1070). Finish of compact laminates should be suede finish which includes door, pilasters and intermediate panels finished with approved texture/shades as per IS 2046. This also includes providing and fixing in position necessary hardware made out of Stainless steel / aluminium as per manufacturer's specifications like door stopper, top rail, U channel, adjustable foot, concealed hinge, door knob, thumbturn lockset, etc. Colour of the laminate panel shall be got approved from the Engineer-in-Charge.	4.00 Nos	Each	43839.45	175358	
Total Sub Head G						
Sub Head H (Item 48)	STEEL WORK					1096739

EE-III
EE-V(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
48	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-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	16.24 kg	kg	755.26	12265	
	Total Sub Head H					12265
Sub Head I Item 49 to 52	FLOORING					
49	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement: 5 coarse sand) with joints finished flush.					
	Red sand stone	113.33 sqm	sqm	1251.71	141856	

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
50	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.					
50.1	Glazed vitrified floor tiles polished finish of size Size of Tile 800 x 800 mm	311.96 sqm	sqm	1690.45	527353	
50.2	Glazed Vitrified tiles Matt/Antiskid finish of size Size of Tile 800 x 800 mm					
51	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	35.27 sqm	sqm	1686.15	59471	

EE-III EE-V(Elec) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	& matching pigments etc. complete.					
52	Size of Tile 800x800 mm Providing and laying plaster of paris on floor 5mm to 7mm thick to protect the existing tile flooring for any type of damage during execution of work and removal / disposal of plaster of paris on final completion of work complete in all respects to the entire satisfaction of Engineer-in-charge.	9.85 sqm 347.23 sqm	sqm sqm	1915.00 201.60	18863 70002	
	Total Sub Head I					817545
Sub Head J Item 53 to 59	ROOFING					
53	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75 mm deep chase					
54	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 x 1 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.	80.26 metre 13.00 Nos	metre Each	298.38 291.64	23948 3791	

EE-III EE-V (Elec) EE-VII (PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
55	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.	67.38 metre	metre	369.03	24865	
56	110 mm diameter 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. Bend 87.5°					
57	110 mm bend 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	13.00 Nos	Each	147.01	1911	

EE-III

EE-V(Elect)

EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	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 0.30mm 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.	34.93	sqm	1860.74	64996	
	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 I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending					

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
58	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 1200x600 mm 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 from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size 24x24x3000 mm 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 calcium silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors	308.81	sqm	2110.27	651672	

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
	etc., wherever required. Main 'T' runners to be suspended from ceiling using al. 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 with galvanised 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.					

EE-III
EE-V(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
59	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner.	365.59	sqm	1666.15	609128	
	Total Sub Head J					1380311
Sub Head K Item 60 to 67	FINISHING					
60	12 mm cement plaster of mix: 1:4(1 cement: 4 fine sand)					
61	Finishing walls with textured exterior paint of required shade:	642.26	sqm	339.35	217951	
62	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :	67.79	sqm	218.64	14822	

EE-III EE-V(Elec) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
63	Two or more coats on new work 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.	12.02 sqm	sqm	152.44	1832	
64	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.	574.47 sqm	sqm	152.59	87658	
65	Two coats Providing and fixing GI chicken wire mesh at junctions of RCC and brick work while plastering work including nailing/fixing, to the entire satisfaction of the Engineer-in-Charge.	574.47 sqm	sqm	139.64	80219	
		47.26 sqm	sqm	289.50	13682	
Sub Head L Item 66 to 68	Total Sub Head K					416164
66	Dismantling and Demolishing Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar					
		9.41 cum	cum	2014.50	18956	

EE-III
EE-V(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
67	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	29.65 sqm	sqm	260.54	7725	
68	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	10.60 cum	cum	258.10	2735	
Total Sub Head I						29416
Sub Head M Item 69 to 74	ALUMINIUM WORK					
69	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.					
	Powder coated minimum thickness 50 micron aluminium tubular handle bar	8.00 Nos	Each	617.54	4940	

EE-III EE-V(Elect) EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
70	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).	8.64 sqm	sqm	5207.75	44995	
71	Providing and fixing glazing in aluminium / uPVC 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: With float glass panes of 8 mm thickness (weight not less than 20 kg/sqm)	11.38 sqm	sqm	1513.05	17219	
72	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	40.66 sqm	sqm	4695.70	190927	

EE-III
EE-V(Elect)
EE-VII(PH)

S.No	Description	Qty	Unit	Rate	Amount	Sub total
73	Providing and fixing 12 mm thick fixed toughened glass panel with powder coated aluminium U channel, EPDM gasket, structural silicone and necessary hardware complete.	3.34	sqm	4320.85	14432	
74	Providing and fixing heavy-duty stainless steel lock for 12 mm thick frameless toughened glass door shutter, comprising SS patch lock body, lock cylinder, keys, strike box/keeper plate, necessary cut-outs in glass, screws, accessories and all fixing arrangements complete as per manufacturer's specifications and direction of Engineer-in-Charge.	2.00	Nos	4176.85	8354	
	Total Sub Head M					
Sub Head N	WATER PROOFING					280867
75	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 (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					

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
	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. 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. (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) (e) The whole terrace so finished shall be flooded with					

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S.No	Description	Qty	Unit	Rate	Amount	Sub total
	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.	384.15	sqm	1647.23	632783	
	Total Sub Head N					632783
	Total				14916159	14916159

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**Mile stone Programmer
(In Physical Terms)**

S. No.	Description of Milestone (Physical)				Time allowed in Days (from date of start)	Amount to be with-held in case on non achievement of respective milestone.
1	1st Quarter					
	S.No	Description	During the quarter	Cumulative	67 Days	0.625% of tendered amount of Civil Component
	1	Foundation	100%	100%		
	2	Reinforced Cement Concrete	13%	13%		
	3	Miscellaneous	9%	9%		
2	2nd Quarter					
	S.No	Description	During the quarter	Cumulative	135 Days	1.249% of tendered amount of Civil Component
	1	Foundation	-	100%		
	2	Reinforced Cement Concrete	42%	55%		
	3	Masonry Work	18%	18%		
	4	Joinery	12%	12%		
	5	Flooring	10%	10%		
	6	Miscellaneous	-	9%		
3	3rd Quarter					
	S.No	Description	During the quarter	Cumulative	203 Days	1.876% of tendered amount of Civil Component
	1	Foundation	-	100%		
	2	Reinforced Cement Concrete	30%	85%		
	3	Masonry Work	82%	100%		
	4	Joinery	38%	50%		
	5	Flooring	58%	68%		
	6	Roofing	58%	58%		
	7	Finishing	60%	60%		



	8	Miscellaneous	-	9%		
4	4th Quarter					
	S.No	Description	During the quarter	Cumulative	270 Days	0.1.251% of tendered amount of Civil Component
	1	Foundation	-	100%		
	2	Reinforced Cement Concrete	15%	100%		
	3	Masonry Work	-	100%		
	4	Joinery	50%	100%		
	5	Flooring	32%	100%		
	6	Roofing	42%	100%		
	7	Finishing	40%	100%		
	8	Water Proofing	100%	100%		
	9	Miscellaneous	91%	100%		

Part B

I - General/Specific Conditions, Specifications

General/Specific Conditions for Major and Minor Component of work as applicable.

Note: The order of preference in case of any discrepancy may be read as the following:-

- a. Nomenclature of items as per schedule of quantities.
- b. Particular specification and General/Specific condition, if any.
- c. CPWD specifications.
- d. Architectural Drawings.
- e. Indian standard specifications of B.I.S.
- f. Sound Engineering Practice.
- g. GCC for Construction Works 2023
- h. CPWD Manual.

1.0 General

- 1.1 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 "CPWD Specifications. Wherever CPWD Specifications are silent, the latest IS Codes/ Specifications shall be followed and the rates should be all inclusive
- 1.2 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The Contractor shall keep at his own cost all such publications including relevant Indian Standard applicable to the work at site.
- 1.3 The work shall be executed and measured as per metric dimensions given in the Schedule of Quantities, drawings etc. (FPS units wherever indicated are for guidelines only).
- 1.4 The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. The contractor shall ensure proper co-ordination of various disciplines viz. sanitary & water supply, horticulture & electrical etc.
- 1.5 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested before covering.
- 1.6 Samples including brand/ quality of materials and fittings to be used in the work shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.
- 1.7 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 list of approved laboratories for testing is as under:-

S. No.	Type of tests	Name of laboratories
I.	All tests	Government labs and NABL certified labs

- 1.8 The contractor, his agents/ representative, workman etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.

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- 1.9 Contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.
- 1.10 The tenderer shall see the approaches to the site. In case any approach from main road is required at site or, existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost.
- 1.11 Contractor shall take all precautionary measure to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.
- 1.12 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. Contractor shall ensure that no hindrances shall be caused to traffic during the execution of the work.
- 1.13 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.
- 1.14 The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.
- 1.15 Contractor shall provide permanent bench marks, flag tops 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.
- 1.16 The work 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 of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work, nomenclature of items. Specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall supersede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account.

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- 1.17 The contractor should submit the shop drawing 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.
- 1.18 Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets; conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.
- 1.19 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
- 1.20 All material shall only be brought at site as per program finalized with the Engineer-in-Charge.
- 1.21 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.
- 1.22 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting/ shifting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.
- 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
- 1.23 The contractor shall be responsible for the watch and ward/ guard of the, buildings, safety of all fittings and fixtures including sanitary and water

- supply fillings 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.
- 1.24 The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.
 - 1.25 For construction works which are likely to generate malba/ rubbish to the tune of more than a tempo/ truck load, contractor shall dispose off malba, rubbish & other unserviceable materials and wastes at his own cost to the notified specified dumping ground and under no circumstances these shall be stacked/ dumped even temporarily, outside the construction premises.
 - 1.26 For construction works which are likely to generate malba / rubbish contractor shall dispose off malba (after segregation in to 5 streams i.e. concrete, bricks and mortar, soil, steel, wood & plastic) at waste processing plants presently located at Industrial area Phase-I, Chandigarh or any other designated location, either with their own conveyance or by requesting machinery from MCC. (at Toll free No. 0172-2787200) by paying requisite charges as per C&D waste Management Policy 2022 of Chandigarh Administration.
 - 1.27 Contractor shall use processed materials as well as their by products casted from C&D waste for their works allotted to contractor. However, in case of non availability of processed material at C&D plants, non availability certificate will be obtained by the contractor before resorting to purchase of material from open market.
 - 1.28 The excavated surplus earth of the building shall be disposed off by the contractor for all leads and lifts free of cost within Campus. Dumping site/ premises shall be got approved from Engineer in Charge. The contractor will not be permitted to take the surplus earth outside the Campus without the permission of the Engineer-in-charge.
 - 1.29 The contractor shall take all necessary measures for the safe flow of traffic during construction including providing/ maintaining such barricades all around construction area without hindering free flow of traffic as per directions of Engineer in Charge. Nothing extra shall be payable on account of providing and maintaining the barricading in good condition. The contractor shall be responsible for all damages and accidents caused due to negligence on his part.
 - 1.30 Nothing extra shall be paid for making drip of any shape, size.
 - 1.31 Nothing extra shall be paid for making groove/ cut of any kind in the item/ items of plastering work except Fascia Pattern groves.



- 1.32 In case of lowering of subsoil water level/ wet earth work is required as per site condition, the same will be done by the contractual agency and the rate for the same will be allowed as per agreement.
- 1.33 The contractor shall use the white cement with pigment to match the shade of flooring/ dado and for installation of P.H./ Electrical fixtures where ever required without claiming any thing extra.
- 1.34 No hand grinding shall be permitted and grinding of stone/ marble wherever required shall be only through mechanical grinders.
- 1.35 In case the depts supplies 'Recron fibers' for mixing in the mortar of Plaster of top storey and external Plaster, nothing extra shall be paid.
- 1.36 The rates for all items of work shall unless clearly specified, include the cost of labour, materials and other inputs involved in the execution of the items.
- 1.37 Where the earth for filling is to be supplied by the Contractor/ Agency, the rate to be quoted should include all leads and lifts whatsoever. The Contractor/ Agency will arrange earth from its own source, in case the Board does not specify the source.
- 1.38 The contractor shall responsible for the implementation of all the provisions under Rule 4 of Chandigarh Municipal Corporation (Sanitation and Public Health) Bye Laws, 1999 and bear all the fines, penalties and prosecutions in case of failures. CHB reserves the right to recover any damages/penalties imposed from the payments due to the contractor.
- 1.39 Justified amount (X) shall be worked out by the Board at the time of award of work while analyzing the bids received. The allotment amount (excluding escalation) (Y) shall be at a %age $O = (Y-X)/X$ above or below the said justified amount which will be called 'original %age above or below' as the case is.
- Revised justified amt (X'), on the same parameters as worked out at the time of award of work, shall be worked out at the time of every bill with the actual quantities. The actual amount of work (excluding escalation) (Y') at the time of every Bill shall be at a %age $A = (Y'-X')/X'$ above or below the said revised justified amount which will be called "actual %age above or below" as the case is.
- Suitable reduction will be made in the running/final bill, in case the "actual %age" (A) exceeds the "original %age" (O) so that the "actual %age remains at par or with in the "original %age".
- 1.40 The competent authority on behalf of CHB reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.
- 1.41 The Board reserves its right to bifurcate the work between one or more agencies and further reserves its right to withdraw a part of a work of a



particular item at any stage during the execution of work without prejudice to the right of the Board to recover, liquidated damages under various provisions of the contract agreement.

- 1.42 The quantities of various items and the number of houses can be increased or decreased at any stage unless and otherwise specified. No claim on account of such changes will be entertained. However the payment to the contractor under running/final bills shall be governed by actual quantities of the various items executed at site at the rate prescribed in the DNIT plus or minus quoted percentage by the agency.
- 1.43 The contractor shall be liable for and shall also indemnify the CHB and its employees against all liabilities, losses, claims, demands, proceeding, damages, costs, charges and expenses and further agrees to defend, indemnify and hold the Board and its employees harmless from any penalty whatsoever in respect of any injury or damage to any property of to personals during the execution of work or by the action of any central or state of local authority for violation by the contractor or sub-contractor engaged on the work.
- 1.44 The work during its progress and subsequently at any stage can also be inspected by the Chief Vigilance Officer/Chief Technical Examiner on behalf of the Engineer-in-Charge and agency shall be responsible for compliance of the observation raised by Chief Vigilance Officer/Chief Technical Engineer and including any recoveries proposed thereof.
- 1.45 The work during its progress and subsequently at any stage shall be open for Inspection by Third Party/ Quality Assurance Independent Agency appointed by CHB for Technical Examination/Audit on behalf of Engineer-In Charge and agency shall be responsible for compliance of the observation raised by it and including any compliance /recovery proposed thereof. In case of non compliance in 15 days further payment would be stopped.
- 1.46 **Supply of Water and Electric Power:** Unless otherwise provided elsewhere in the Contract, the Contractor shall be responsible for making arrangements at his own cost for obtaining supply of water and/or electrical power, necessary for the execution of the works. If the agency arranges temporary water connection from MC, Chandigarh for construction purpose, the recovery of water charges shall be made as per Chandigarh Gazette notification issued on 28 September 2006 with latest amendments. If the contractual agency arranges water through water tanker from MC, Chandigarh in case of non-availability of water supply lines at the site by the MC, then he will produce bill/payment receipt of water charges and such no water charges will be deducted provided the agency submit no objection certificate from the MC, Chandigarh in this regard. Further, it is clarified that if, receipts of water charges submitted are less than 1.5%, then the recovery of 1.5% will be made after adjusting the amount of receipt. If the contractual agency uses the water from the



public stand post, through private tanker or any of the existing sources, panel rate recovery shall be made from the running bills/final bill. In the event the CHB is in a position to supply water or electrical power, or both, required for works, such supply shall be given only at one point. The cost of making necessary arrangements to the Engineer's distribution system and laying of necessary pipe line, specials, valves, meters etc. for water supply or the laying of underground/overhead conductor, circuit protection, electric power meters and transmission structures in case of electric power shall be borne by the Contractor. The Contractor shall also bear the running cost of water and power supplied, the rates for which shall be determined and notified by the Competent Authority. Presently the water charges @ 1.5% of the project cost which shall be deducted from bills of the agency instead of 1% as defined in Clause-31A (i) GCC. Any increase in water/power tariff by supplying agencies shall also be borne by the Contractor. The decision of CHB on such cost shall be final and binding. Before the release of security, the contractor will submit no due certificate from Electricity department.

- 1.47 In addition to the conditions laid down in the 'General Condition of Contract Document of Chandigarh Housing Board' for release of security deposit, the contractor shall have to make compliance of the following:-
- (i) To produce no due certificate from Electricity department.
- 1.48 Deduction on account of Income Tax shall be made at the rate prescribed by law from the gross payment due to the contractor in accordance with section 194 C of Income Tax Act 1961 with latest amendments, in force.
- 1.49 For the materials other than mentioned in the list of the approved makes in this Document, preference will be given to the ISI marked materials.
- 1.50 The items for which more than one Make/ Brand has been specified in the list of 'Approved Makes' in the document and if during execution of the work, for some reason or the other, it is found that only one make remains available in the market, the Chief Engineer, CHB shall be competent to approve other makes of equivalent quality for such The items of work. His decision in this regard shall be final & binding on the part of the contractor.
- 1.51 Nothing extra shall be paid for any local carriage and re-handling of material irrespective of lead and lift.
- 1.52 All T&P required for the labour will have to be arranged by the agency.
- 1.53 Any material left at the site one month after completion of work shall be become the property of the department and no payment shall be made to the contractor for the material.
- 1.54 The agency would be responsible for submission of any document(s) required for obtaining "Occupancy Certificate" from the Estate office, "Fire clearance Certificate" form the office of Chief Fire Officer UT Chandigarh

- and "Consent to Opreate" from CPCC, UT Chandigarh etc., and in case, any observation is made by any such department, then the agency would also carry out requisite rectification after which the final completion of work will be accepted by CHB. However, statutory fees, if any, will be borne by CHB.
- 1.55 All the bidders are required to submit the undertaking on structural stability and soundness as per form 'D' given in Tender Document.
 - 1.56 If the Engineer-in-Charge receives any information about structural failure, of any building/infrastructure constructed by the bidde(s) during last 25 (twenty-five) years, making it unfit for intended use, then EE or any team as decided by NIT approving authority shall inspect the building/infrastructure. The inspection report alongwith the recommendations shall be submitted to the NIT approving authority.
 - 1.57 The bid/agreement can be cancelled/terminated and EMD/PG/SDS (as applicable) can be forfeited as per undertaking given by the bidde(s), within 7 working days of receiving the report. Further on the recommendation of SE/CE, the CEO, CHB will take decision for debaring the bidder forever for tendering in the CHB and send the intimation to enlistment authority of concerned department.
 - 1.58 In case the lowest tendered amount (estimated cost $\pm$ 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 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.
 - 1.59 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).
 - 1.60 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).

2.0 Unless otherwise specified in the schedule of quantities, the rates for respective items shall be all inclusive and apply to the following: -

- i. The rates quoted by the applicants in the Financial Bid should be inclusive of GST and all other taxes/levies and Cess as per Building & other construction Workers Welfare Cess ACT 1996 as extended to Chandigarh vide notification dated 17.09.2009 with latest amendments. Nothing extra on this account shall be paid.
Further, 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.
- ii. All lifts & all heights, floors including terrace, leads and depths.
- iii. All labour, material, tools and plants and other inputs involved in the execution of the item.
- iv. Any of the conditions and specifications mentioned in the tender documents.
- v. Pumping/ bailing out surface water/ rain water, if necessary for any reason.
- vi. Providing sunk flooring in Bath-rooms, kitchen, etc.
- vii. Any legal or financial implications resulting out of disposal of earth, if any.
- viii. Payment of Royalty at the prevailing rates, if any, on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities.
- ix. Performance test of the entire installation(s) before the work is finally accepted.
- x. All incidental charges for cartage, storage and safe custody of materials brought to site.

3.0. TESTING OF MATERIAL:

3.1 Testing of Materials: When required by the Engineer -in -Charge, the contractor shall supply, for the purpose of testing, samples of all materials proposed to be used in the works. Samples submitted either to govern bulk supplies or required for testing before use shall be provided free of charge by the contractor. All testing charges shall be borne by the contractor. All mandatory test as per specification shall be carried out at laboratories as directed by Engineer- in- Charge.

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

3.2 However, if any ultrasonic pulse velocity/ load testing or special testing is to be done for concrete whose strength is doubtful, the cost of the same shall be borne by the contractor.

3.3 In case there is any discrepancy in frequency of testing as given in list of mandatory tests and that in individual sub-heads of work as per CPWD

Specifications higher of the two frequencies of testing shall be followed and nothing extra shall be payable on this account.

3.4 FIELD LABORATORY

The contractor has to establish field laboratory at site including all necessary equipments and skilled manpower for the Field Tests at his own cost to have proper quality control.

For performing the above tests, the Field Testing Equipments and Instruments are to be arranged and maintained by the contractor.

- 3.5 The contractor shall ensure quality construction in a planned and time bound manner. Any substandard 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.

Laboratory/ Field equipment referred in the CPWD works Manual/ MORTH is to be arranged and maintained by the contractor at the site of work. In case the equipment required for any test is not available at site, the department shall get the test conducted from the third party. However in that event, besides providing free materials of sample, the cost of taking of sample, packing, transportation, testing charges etc. shall be borne by the contractor irrespective of the results.

4.0 SECRECY

- 4.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have notice that the Indian Official Secrets Act 1923 applies to them & will continue so to apply even after the execution of such works under the contract.
- 4.2 The contract is confidential and must be strictly confirmed to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers as necessary) and to the purpose of the contract.
- 4.3 All documents, copies thereof & extracts there from furnished to the contractor shall be returned to the Engineer-in-Charge on the completion of the work/works or the earlier determination of the contract.

5.0 SAMPLE OF MATERIALS:-

- 5.1 All materials and fittings 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. If a particular brand of material is specified in the Bid Document, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand/ quality of material are not specified in the Bid Document, ISI Marked materials and fittings shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material/ fittings are not available, the contractor shall submit samples of materials/ a fitting manufactured by firms of repute conforming to relevant Specifications or IS codes for the approval of Engineer-in-Charge.

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5.2 To avoid delay, contractor should submit samples as stated above well in advance so as to give timely orders for procurement. 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.

5.3. BIS marked materials except otherwise specified shall also be subjected to quality test besides testing of other materials as per the specifications described for the item/ material. Wherever BIS marked materials are brought to the site of work, the contractor shall furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfies the provisions of specifications relevant to the material and/ or the work done.

BIS marked items (except cement & steel for which separate provisions have been made in the Tender Document) required on the work shall be got tested, for only important tests, which govern the quality of the product, as decided by the Engineer-In-Charge. The frequency of such tests (except the mandatory test) shall be 5% of the frequency as specified in BIS. For mandatory test, frequency shall be as specified in the CPWD Specifications

5.4 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications & BIS, then tests shall be carried out as per decision of Engineer-in-Charge.

6.0 CEMENT & STEEL REINFORCEMENT (IF NOT STIPULATED TO BE SUPPLIED BY THE DEPARTMENT). SPECIAL CONDITIONS FOR CEMENT AND STEEL

Contractor has to produce manufacturers test certificate for each lot of Cement & Steel Reinforcement procured at site.

6.1 CONDITIONS FOR CEMENT

6.1.1 Cement required for the work shall be procured by the contractor.

6.1.2 The contractor shall procure PPC conforming to IS: 1489 (Part-I)/ OPC conforming to IS:8112 as per List of Preferred Makes for Civil Works.

6.1.3 The supply of cement shall be taken in 50 kg bags/ or in bulk for storage in cement silos for batching plant 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 relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to theirlevant BIS codes, the same shall stand rejected, and it 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. Supply of cement shall be taken in 50 kg bags bearing manufacturer's name, or his registered trademarks if any and grade and type of cement as well as ISI marking.

- 6.1.4 The cement shall be brought at site in bulk supply of approximately 20 tonnes or more as decided by the Engineer-in-Charge.
- 6.1.5 One No. cement godown of the capacity to store a minimum of 2000 bags of cement shall be constructed by the contractor at site of batching plant for which no extra payment shall be made.
- 6.1.6 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 keys 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.
- 6.1.7 The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of cost the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor.
- 6.1.8 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained. The theoretical consumption of cement shall be worked out as per procedure prescribed in Clause 38 of the General Condition of Contract 2023 and shall be governed by conditions laid there in. In case the cement consumption is less than theoretical consumption including permissible variation, work shall liable to be rejected. In case of excess consumption no additional payment shall be made.
- 6.1.9 The cement brought to the 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.
- 6.1.10 The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.
- 7.0 CONDITIONS FOR STEEL REINFORCEMENT.**
- 7.1 The contractor shall procure ISI marked TMT Bars of Fe 500D/ 550D grade as per preferred brand list mentioned in this Bid Document from the steel manufacturer having valid BIS License for IS 1786-2008 with latest amendments Or their authorized dealer. If TMT bars of any dia of above mentioned make is not available in market at any time then the contractor on producing non availability certificate from the manufacturers may procure TMT bars of that dia from Steel manufacture as per the following guidelines:
- 7.2 The CE, CHB shall approve the steel manufactures subject to the guidelines for eligibility criteria and other technical parameters given below.
 Credentials for eligibility criteria & other technical parameters for steel manufacturer: The manufacturer should meet the following eligibility criteria:
 a) The Steel manufacture should have following documentary evidence:

- i. Certificate of incorporation.
- ii. Memorandum of articles of Association.
- iii. Credit rating of the company from CARE/ CRISIL/ ICRA (the grading should not be C/D grade for minimum last 3 years).
- b) The Steel manufacturer must have following licenses and certificates:
 - i. ISI certificate for billets (IS2830:2012).
 - ii. ISI certificate for TMT Bars IS1786:2008 (with latest amendments).
- c) The Steel manufacturer should also preferably have the following licenses:
 - i. ISO9001:2015.
 - ii. ISO 14001:2015.
 - iii. OHSAS 18001:2007.
- d) The steel manufacturer should be using iron ore as the basic raw material. The entire gamut of iron and steel production is owned by the same company or its subsidiary company (ies) and the iron making capacity is sufficient matching the steelmaking capacity, adopting any of the refining technologies for manufacturing steel & TMT Bars as given under are eligible:
 - i. BF-BOFRoute.
 - ii. COREX-BOFRoute.
 - iii. DRI-EAFRoute (Each Electric Arc Furnace should be 100 MT or more).
 - e) Billets produced must be ISI marked (IS2830:2012).
 - f) The TMT bars produced must be ISI marked (IS1786:2008).
 - g) The steel manufacturer should have the following in house testing facilities (NABL Accredited):
 - i. Computerized Universal Testing Machine.
 - ii. Spectrometer.
 - iii. Bend Re-bend facility as per IS: 1786:2008 (with latest amendments).
 - iv. Raw material laboratory: Arrangement for testing Carbon, Sulphur & Phosphorous etc.
 - v. Other testing facilities as specified in IS: 1786:2008 & IS :2830:2012.

7.3 Steel can also be procured from any particular steel manufacturer who has been suo motto approved by the CE, CHB.

7.4 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.

- 7.5 The steel reinforcement bars shall be brought to the site in bulk supply of 40 tonnes or more, or as decided by the Engineer-in-Charge.
- 7.6 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 7.7 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 the 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	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- 7.8 The contractor shall supply free of charge the required steel bars for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.

- 7.9 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained. The theoretical consumption of steel shall be worked out as per procedure prescribed in Clause 38 of the contract and shall be governed by conditions laid therein. 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 rate so prescribed shall be made after ensuring structural soundness and stability. In case of excess consumption no adjustment shall be made.

- 7.10 Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer-in-Charge.

- 7.11 The standard sectional weights referred to shall be as given in Table 5.4 in para 5.3.4 in CPWD Specification 2019 Vol.-I and will be considered for conversion of length of various sizes of TMT Bars in to standard weight. Record of actual sectional weights shall also be kept dia. and lot wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each

diameter of steel received at site of work 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 terms as Derived Actual Weight.

- a) If the derived weight is less than the standard weight, then the Derived Actual Weight shall be accepted if it is within the following tolerances specified in IS:1786-2008, otherwise whole lot will be rejected. However, deductions shall be made for the difference in derived actual weight and standard weight at the rate Rs.6833/- per Quintal for TMT-500D/ 550D reinforcement bars. Tolerance on nominal mass shall be in accordance with Table 5.4A of CPWD Specification 2019.
- b) If the derived actual weight is found more than the standard weight, then nothing shall be paid extra for the difference in derived actual weight and standard weight.

7.12 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be used in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the CHB Site staff and Copy of Original vouchers and Original test report shall be kept on record in the site office

8.0 SPECIAL CONDITION FOR CEMENT CONCRETE:

- 8.1 The contractor has to arrange at site sufficient centering /shuttering before start of work. Only M.S. centering / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor as approved by the Engineer-in-charge.
- 8.2 Nothing extra shall be paid for the centering & shuttering, circular in shape where the form work is having a mean radius exceeding 6m in plan.
- 8.3 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering & casting for which nothing extra shall be paid to the Contractor.
- 8.4 As per general engineering practice, level of floors in toilet/ bath, balconies, shall be kept 12 to 20mm as required lower than general floors, shuttering should be adjusted accordingly.
- 8.5 Drip course or moulding shall be provided in projected surfaces wherever specified.

8.6 The lean concrete, to be used in foundations base shall be mixed with mechanical mixtures.

9.0 PARTICULAR SPECIFICATIONS FOR RCC WORK: -

9.1 The RCC work shall be done with Design Mix Concrete. Wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. The Design Mix Concrete will be designated based on the principles given in IS: 456, 10262 & SP 23. The Conditions & Specifications stated herein shall have precedence over all conditions & specifications stated in relevant I.S. Codes/ CPWD Specifications. The concrete mix shall be designed for the specified target mean compressive strength in order to ensure that work test result do not fall below the acceptance criteria specified for the concrete mix. The Contractor shall design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting the requirements specified.

- (a) The contractor has to submit design mix with the use of admixtures.
- (b) Admixture to be added (by maintaining the minimum cement content & maximum W/C ratio as given under Para 9.3) to meet the Workability/ slump & requirement. Quoted rate will include the cost of admixtures used in the concreting work. Nothing extra shall be paid to the contractor on account of addition of admixtures.

9.2 The source of course aggregate, fine aggregate, water, admixture & cement to be used in concrete work shall be identified by the contractor & he will satisfy himself regarding their confirming to the relevant specifications and their availability before getting the approved from the Engineer-in-Charge.

- a) Coarse Aggregate As per CPWD Specifications
- b) Fine Aggregate As per CPWD Specifications
- c) Water It shall conform to requirements laid down in IS: 456-2000 (Para 5.4) or CPWD Specifications.
- d) Cement The contractor shall use 43 Grade Ordinary Portland Cement and/or Portland Pozzolona Cement of brand/make/source as specified in Tender Document for production of concrete. However, if the contractor uses higher grade of cement nothing extra shall be paid.
- e) Admixture/ Plasticizer The admixture shall conform to IS: 9103 Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture/Plasticizer shall be payable.

- 9.3 Grade of Concrete: - The compressive strength of various grades of concrete with various parameters shall be as follows: -

GRADE DESIGNATION	COMPRESSIVE STRENGTH ON 15 CM CUBES min. 7 Days (N/mm ²)	SPECIFIED CHARACTERISTICS COMPRESSIVE STRENGTH AT 28 DAYS (N/mm ²)	MINIMUM CEMENT CONTENT (Kg. per cum)	MAXIMUM WATER CEMENT RATIO	SLUMP
(i) M-25	As per design	25	300	0.50	25-75
(ii) M-30	As per design	30	320	0.45	25-75

NOTE:-

- In the designation of a Concrete mix letter M refers to the mix and the number of the specified characteristic compressive strength of 15 cm - Cube at 28 days expressed in N/mm².
- It is specifically highlighted that in addition to the above requirements, the maximum cement content for any grade shall be limited to 530 kg./cubic metre.
- In case the quantity of cement use is less than the quantity as specified in the respective items of design mix concrete in 'Schedule of Quantities; then the necessary recovery shall be made for less use of cement.**

- 9.4 The Contractor shall engage one of the following approved laboratories/ test house for designing the concrete mix in accordance with relevant IS Code and to conduct laboratory tests to ensure the target strength & workability criteria for a given grade of concrete: -

- Punjab Engineering College, Chandigarh.
- NIT, Jalandhar. (Formerly known as REC, Jalandhar.)
- IIT, New Delhi.
- Chandigarh Engineering College, Sector 26, Chandigarh.
- National Institute of Technical Teacher Training and Reserch, Sector 26, Chandigarh.

The various ingredients for mix design/laboratory tests shall be sent to the lab/ test houses through the Engineer-in-charge and the samples of such aggregates shall be preserved at site by the department.

In the event if all the five laboratories are unable to carry out the requisite design/ testing, the contractor may have it done any other laboratory with prior approval of the Chief Engineer.

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- 9.5 The contractor shall submit the report on design 'mix from any of above approved laboratories for approval of Engineer in Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the design mix is approved. In case of White Portland Cement and the likely use of admixtures 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.
- 9.6 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, the contractor as per the directions of the Engineer-in-charge shall submit a revised laboratory mix design report conducted at laboratory established at site.
- 9.7 All cost of mix designing and testing, connected therewith, including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix whenever required & as directed by Engineer-in-Charge.
- 9.8 The mix design for a specified grade of concrete shall be done for a target mean compressive strength $T_{ck} = F_{ck} + 1.65s$
Where F_{ck} = Compressive strength at 28 days.
S = Standard deviation which depends on degree of quality control.
The standard deviation for different grades of concrete shall be as follows:
- | GRADE OF CONCRETE | STANDARD DEVIATION |
|-------------------|--------------------|
| M-25 | 4 |
| M-30 | 5 |
- 9.9 TRIAL BATCHES
- (a) The designed mix proportions shall be checked for target mean compressive strength by means of trial batches.
 - (b) Minimum three sets of separate preliminary tests shall be carried out for each trial batch of concrete mix. Each test shall comprise of six specimens and only one test-set of six specimens shall be made on any particular day.
 - (c) The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.
 - (d) The workability of trial mix No.1 shall be measured and mix be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.
 - (e) With the modified Water Content, the mix proportions shall be recalculated by keeping Mix water cement ratio unchanged. The mix proportion, as modified, shall form the trial mix No. 2 and tested for the specified strength and workability.
 - (f) In addition, trial mix No.3 and 4 shall be designed by keeping water contents same as determined as per trial mix No. 2 but



varying the water cement ratio by $\pm 10\%$ of the specified value and tested for their designed characteristics.

- (g) Out of the six specimen of each set, three shall be tested at 7 Days & remaining three at 28 Days. The preliminary tests at 7 Days are intended only to indicate the strength to be attained at 28 Days, while the design mix shall be approved only on the basis of test strength at 28 Days.

9.10 APPROVAL OF DESIGN MIX

The design mix shall be considered satisfactory and approved if at least three preliminary test-sets individually satisfy the following strength and workability criteria:

- (a) The average strength of each test-set is not less than the specified target mean compressive strength (T_{ck}).
- (b) The strength of any specimen cube is not less than $0.85 T_{ck}$.
- (c) The concrete mix is of required degree of workability and acceptable concrete finish.

9.11 BATCHING & MIXING:-

- a) All design mix concrete shall be done using fully automatic/semi-automatic batching plant ~~installed at site of work~~ conforming to IS: 4925 of minimum 6 cum per hour capacity. The automatic/semi automatic batching plant shall be charged by devices when actuated by a single starter switch, will automatically start the weighing operation of each material (i.e. stone aggregate, sand, cement, water, admixture etc.) and stop automatically when designated weight of each material has been reached and also it should have rated capacity (in terms of concrete in a single batch). It shall have control panel for operation of the batching plant complete with printing facility.
- b) All measuring equipment shall be maintained in a clean and serviceable condition and their accuracy shall be checked at least once a month.
- c) Only single sized good quality stone aggregate shall be brought to site of work from the approved source. The grading of the stone aggregate shall be controlled by blending the aggregate of different sizes in the required proportions at site of work. The aggregate of different sizes shall be stock-piled separately, preferably a day before use. The grading of coarse and fine aggregates shall be checked as frequently as possible and as directed by the Engineer-In-Charge to ensure that the specified grading and quality of aggregate is maintained.
- d) It is important to maintain the Water Cement Ratio constant at its specified or approved value by making adjustment for the moisture contents of both fine and coarse aggregates. The



moisture contents in the aggregate shall be determined as frequently as possible in keeping with the weather conditions and as per the provisions of IS:2386 (Part-III).

- 9.12 Equipment like concrete pump excavators/Transit mixer etc. shall be allowed to be moved away from the site when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.
- 9.13 The contractor may note that adequate Transit Mixers and Pumps shall have to be deployed for carrying out the RCC work.
- 9.14 The contractor shall establish a laboratory at site of batch mix plant to test the coarse aggregate, fine aggregate, water, sand, cement etc. Contractor is also required to depute technical personnel specifically for running of Batch Mix Plant and for quality control of mix produced.
- 9.15 All incidental expenditure on security, construction of cement go down, access roads, arrangement of water, electricity etc. to be incurred or anticipated by the agency for arranging, installing and operation of Batch Mix Plant shall be deemed to have been included in his quoted rates and no claim whatsoever will be tenable on this account.
- 9.16 With each Running Bill, the details of test carried out shall be submitted by the contractor as per Performa.
- 9.17 **OTHER OPERATIONS: -**

All other operations in concreting work like mixing, slump, laying, placing of concrete, compaction, curing etc, not mentioned in this particular specification for Design Mix Concrete shall be as per CPWD Specifications.

9.18 **SAMPLING:-**

- a) Samples from fresh concrete shall be taken as per IS 1199-1959 and the test cubes shall be made, cured and tested in accordance with IS: 516-1959
- b) Each test sample shall comprise of six test cubes (specimen), three of which shall be tested at 7 days and remaining for tests at 28 days.
- c) **FREQUENCY OF SAMPLING: -**

- (i) A random sampling procedure shall be adopted to ensure that the sampling is spread-over the entire period of concreting and cover all mixing units. The concrete work shall be notionally divided into lots as under for the purpose of sampling conditions.

- Footings, rafts etc
- Columns and walls at all levels
- Beams at all levels
- Slabs at all levels

- (ii) At least one test sample shall be taken for each lot of concrete work.

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- (iii) Each grade of concrete shall form different lot for testing,
- (iv) The minimum frequency of sampling of concrete of each grade shall be in accordance with the following: -

**QUANTITY OF CONCRETE NUMBER OF SAMPLES
IN THE WORK, CUBIC
METRE PER DAY.**

1-5	1
6-15	2
16-30	3
31-50	4
51 & Above	4 Plus one additional sample for each additional 50 Cum or part thereof.

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

- (i) The concrete work shall be assessed on day to day basis & samples shall be taken as specified.
- (ii) Work strength test shall be conducted in accordance with IS: 516 on random sampling.

9.19 TEST RESULTS OF SAMPLES:

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than $\pm 15\%$ percent of the average. If variation is more, the test results shall be treated as invalid. Around 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in any other laboratory (as directed by the Engineer-in-Charge).

9.20 STANDARD OF ACCEPTANCE:-

- i) In case the test results of all the samples are above the characteristic compressive strength, the concrete shall be accepted.
- ii) In case the test result of one or more samples fails to meet the requirement (i) above, it shall be accepted if it meets the requirement as laid down in CPWD Specification.
- iii) Concrete of each grade shall be assessed separately.
- iv) Concrete is liable to be rejected, if it is porous or honeycombed or its placing has been interrupted without providing a proper construction joint or the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met.

9.21 MEASUREMENT

- (i) As per CPWD Specifications.

- (ii) In respect of all projected slabs at all levels including cantilever, canopy, the payment for the RCC work shall be made under the item RCC slabs. The payment for shuttering at the edges shall be made under item of centering and shuttering for RCC slabs. Nothing extra shall be paid for the side shuttering at the edge of these projected balconies/ projected verandah slabs.
- 9.22 **TOLERANCES** - As per CPWD/MORT&H Specifications.
- 9.23 **RATES:-**
- (i) The rate includes the cost of materials, labour and T&P, including mixing, placing, transportation involved in all the operations described above except for the cost of centering, shuttering & reinforcement which will be paid for separately.
- (ii) In case of rejection of concrete on account of unacceptable compressive strength, governed by para "Standard of Acceptance" as above, the work for which samples have failed shall be redone at the cost of contractor. However, the Engineer-in-charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure or part of structure, etc) to be carried out at the cost of contractor to ascertain if the portion of structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The Contractor shall take remedial measures necessary to retain the structure as approved by the Engineer-in-charge without any extra cost. However, for payment, the basis of rate payable to contractor shall be governed by the 28 days. cube test results and reduced rates shall be regulated in accordance with CPWD Specifications.
- 10.0 **BRICK WORK & HOLLOW CONCRETE BLOCKS :-**
- 10.1 The brick work shall be carried out with good quality FPS/machine moulded modular bricks well burnt bricks of class designation 7.5/12.5 as per item description and CPWD Specifications. In view of the over size of local bricks available, the thickness of the course shall be 8 cm assuming consumption on average of 460 bricks per cum of brick work. In case consumption of bricks is more or less than 460 bricks per cum, it will be paid/ recovered accordingly at the rate mention as under:-
- Bricks - Rs.7610/- per thousand
This would be without any effect on the consumption of the standard cement consumption factor.
- 10.2 The rate shall also include for leaving chases/ notches for dowels/ cramps for all kinds of cladding to come over brick work.

10.3 In case of non availability of the bricks, fly ash/concrete bricks of equivalent strength can be used with the permission of Engineer-in-Charge. Nothing extra on this account shall be made.

10.4 **Hollow Concrete Blocks of A Grade:-** Technical Specifications of Hollow Concrete Blocks of A Grade having compressive strength of 7.0N/mm² at 28 days confirming to IS:2185 (part 1):2005

11.0 ENGAGING SPECIALISED AGENCIES FOR WORKS: -

11.1 The Specialized agency for executing the following items of the work and/ or any other items of work where specialized firm is required to be engaged, as per condition No: 2 of NIT:-

- i) HVAC Sysytem.
- ii) Fire fighting System.
- iii) CCTV Surveillance System
- iv) DG SET 125 KVA
- v) UPS 10 KVA
- vi) Solar Power Plant
- vii) Fire Alarm System

12.0 Written guarantee for various materials

Before the release of payment, the contractor shall arrange a written guarantee from the manufacturer (with its certified address) for various material as detailed below that it conforms to the prescribed specifications. In case, any manufacturing defect is observed before/after the fixing during next five years in the said material, the defective material shall be replaced without any charges free of cost on lodging a complaint to it. The decision of the Engineer- in-Charge in this regard will be final and binding to the Contractor. In case of failure to do so, manufacturer and contractor shall be black listed in CHB.

- 1. Flush door Shutters/Window shutters
- 2. Vitrified , Glazed & Ceramic Tiles
- 3. Acrylic emulsion
- 4. Water proofing treatment
- 5. PH fixtures and fittings
- 6. Modular Switches & Sockets
- 7. HPSV Street Light Fittings & HPSV lamp.
- 8. MCB's, ELCB's & MCCB's

13.0 DEFECT/ WATCH & WARD LIABILITY:

The contractor's liability during the defect liability period be read as 5 years instead of one year from the final date of completion as per Clause-17 shall be limited to rectification of defects including replacement as follows which in the opinion of Engineer-in-Charge are not man made. The agency shall be responsible for watch and ward of constructed building for the period upto the 'Defect liability Period' or till the physical possession is handed over to the respective allottee whichever is earlier. Nothing extra shall be payable on this account.

S. No.	Description	Defect Liability of the items, if executed under this contract.
(i)	Anti termite	Termites found if any till guarantee period to be rectified through post ATT.
(ii)	Concrete	a) Rectification of structural/ superficial/ non-structural cracks. (b) Rectification of dampness/ seepage in roof slab/ junctions & sunken portion. (c) Rectification of cracks in beam, shade, column.
(iii)	Brick work	(a) Rectification of cracks in panel wall/ portion. (b) Cracks/ settlement of walls. (c) Rectification of efflorescence .
(iv)	Joinery	(a) Replacement of warped joinery. (b) Cracks in panels, rails/ styles etc.
(v)	Builders' Hardware.	(a) Repairs Replacement of loosened/ pre-mature failure of fittings. (b) Tightening/ Replacement of sag in mosquito proofing.
(vi)	Steel & Iron work	(a) Rectification/ Replacement of defective part of rolling shutter (b) Redoing of defective portion in fabrication welding including Painting. (c) Steel windows, Grills, gates etc. - defects to be rectified.
(vii)	Roof treatment	Rectification of leakage/ seepage of roof slab including covering at junction till Guarantee

		period.
(viii)	Plastering	(a) Rectification of structural superficial cracks if any.
		(b) Rectification of protruding/ peeling off plaster if any.
		(c) Rectification of efflorescence
(ix)	Flooring	(a) Rectification of sinking portion of plinth protection including saucer drain.
		(b) Settlement of foundation & floors.
		(c) Removal of broken/chipped tiles
		(d) Rectification of Slopes, uneven joints by relaying.
(x)	Plumbing/Sanitary fittings	(a) Making good of leakage through soil/ waste pipe & joints.
		(b) Replacement of looking mirror if found wavy.
		(c) Rectification of leakage of over head tanks.
		(d) Leakage/ seepage of sunken floor, blockage of taps/ pipes, Non-functioning of cistern.
(xi)	Finishes	Making good of defective dissimilar patches of painting to match with remaining surfaces.
(xii)	Internal Water Supply	(a) Repairs/ Replacement of defective taps/ fittings.
		(b) Repair to leakage of GI water pipe lines including joints.
		(c) Removal of blockage at GI pipe lines.
(xiii)	Pavement/ approach ramps	Repair of sinking portions & potholes, if any
(xiv)	Sewage	(a) Rectification of slope/ system if found defective during use.
		(b) Rectification of major blockage in Sewer lines.
		(c) Cracks & settlement of sewage lines.

		(d) Settlement of ICs & GTs.
(xv)	Drains	(a) Repair to Drains.
		(b) Settlement of Drains
(xvi)	External Water Supply	(a) Repairs of leaking GI pipes/specials including joints
		(b) Removal blockages of GI pipes
		(c) Rectification of settlement/ damage of Water Meter Chambers.
(xvii)	Electrical installation	All manufacturing defects of electrical switches/ sockets, wires/ cables, accessories, MCBs fittings & panels etc.
(xviii)	General	(a) All manufacturing defects of structures/ fixtures/ fittings/ equipments other than listed above.
(xix)	Street lighting	All manufacturing defects of Street Light fittings, Lamps, wires/ cables, MCB's panels etc.

14.00 FOR COMPLIANCE UNDER ENVIRONMENT PROTECTION ACT 1986.

- i. All the top soil excavated during construction activities should be stored for use in horticulture/ landscape developments with the project site. The excavated soil except top soil shall be used for top cover of at dumping ground.
- ii. Water demand during construction shall be reduced by use of premixed concrete, curing agents and other best practices.
- iii. It is recommended to use Tertiary treated water during construction phase, as much as possible.
- iv. Permission to draw and use ground water for construction work shall be obtained from competent authority prior to construction/operation of the project.
- v. All required sanitary and hygienic measures including portable toilets/ septic tank, first aid room etc. for labour should be in place before starting construction activities and to be maintained through the construction phase.
- vi. Adequate drinking water facility should be provided for construction workers at the site. The safe disposal of waste water and solid wastes generated during the construction phase should be ensured.
- vii. Disposal of muck including excavated material during construction phase should not create any adverse effects on the neighbouring communities and be disposed-off taking the necessary precautions for general safety and health aspects of people.
- viii. Diesel power generating sets used during construction phase should be of "enclosed type" to prevent noise and should conform to rules made under Environment (Protection) Act, 1986, prescribed for air and noise emission standards
- ix. Ambient noise levels should conform to standards both during day and night at the site as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase.
- x. Vehicles hired for bringing construction material at site should be in good condition and should have valid "pollution under check" (PUC) certificate and conform to applicable air and noise emission standards. These should be operated only during non-peak hours.
- xi. Construction spoils including bituminous material and other hazardous materials must not be allowed to contaminate water courses and the dump sites for such material must be secured so that they should not leach into the ground water.
- xii. Any hazardous waste generated during construction phase should be disposed of as per applicable Rules & norms with necessary approvals of the Chandigarh Pollution Control Committee.

- xiii. The diesel required for operation DG set shall be stored in underground tanks and if required, clearance from the Chief controller of Explosives shall be taken.
- xiv. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase so as to avoid disturbance to the surroundings.
- xv. The environmental safeguards contained in the documents should be implemented in letter and spirit.
- xvi. Activities regarding the Environment Management Plan & Environment & Social Responsibility, as proposed in the EIA/EMP report of the project should be implemented in letter and spirit.
- xvii. Reports including that of air and noise shall be submitted for compliance to environmental conditions, every 6 months. A display board shall also be provided at the gate of the unit showing date of granting of consents and its validity and key pollution related parameters for the information of the general public as per the guidelines given by CPCC.
- xviii. Storm water control and its reuse should be as per Central Ground Water Board and BIS standards for various applications.
- xix. Officials from the Regional Office of MoEF&CC, Chandigarh who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the contractor during their inspection.
- xx. A First Aid Room will be provided at the project site both during construction and operation of the project.
- xxi. In case any penalty is imposed by any Hon'ble Court, NGT or any other authority due to noncompliance of any statutory order, or law or guidelines or pollution control or environmental norms, the same will be borne by the contractor.



PART-C

Schedule A to F for Minor Components of the
work, General/specific conditions,
specifications and schedule of quantities
applicable to Minor Component(s) of the work

PUBLIC HEALTH COMPONENT

(SE in charge of Major Component shall also be
competent authority under Clause 2 and Clause 5 as
mentioned in schedule A to F for Major
Components)

PROFORMA OF SCHEDULES - FOR MINOR COMPONENT I.E. PUBLIC HEALTH

(Operative Schedules to be supplied separately to each of the intending tenderer)

SCHEDULE "A"

Schedule of Quantities for Work (Enclosed) which starts at page -123

SCHEDULE "D"

Extra schedule for specific requirements/documents for the work if any	Nil
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SCHEDULE "E"

Reference to General Conditions of contract of 2023 with amendments upto date

i)	Name of Work	CONSTRUCTION OF EXHIBITION/MULTIPURPOSE HALL AT KALAGRAM, MANIMAJRA, CHANDIGARH (COMPOSITE WORK)
ii)	Estimated cost of PH Work	19,10,378.60
iii)	Earnest Money (Composite amount)	As per major Component.
iv)	Performance Guarantee	As per major Component.
v)	Security Deposit	As per major Component.

SCHEDULE "F"

Reference to General Conditions of Contract	GCC-2023 (Construction work) with latest amendments
GENERAL RULES AND DIRECTIONS	
Officers inviting tender : -	Executive Engineer-III Chandigarh Housing Board, Chandigarh.
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2, 12.3	100%
Definitions	
2(vi) Engineer-in charge	Executive Engineer-VII(PH.) Chandigarh Housing Board, Chandigarh.
2(viii) Accepting Authority	Chandigarh Housing Board, Chandigarh.
2(x) Percentage on cost of materials and labour to cover all overhead and profit	15% (CP 7.5% & OH 7.5 %)
2(x)(a) Standard Schedule of Rates	Delhi Schedule of Rates DSR 2023
2(xi) Department	Chandigarh Housing Board, Chandigarh
9(ii) Standard CPWD Contract	Previous day of the last date of submission of

Form General Conditions of Contract Construction Works 2023, CPWD Form 7 as modified & corrected upto		the tender.	
Clause 1			
i) Time allowed for submission of Performance Guarantee, Programme chart (Time and progress) and applicable labour licenses , registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance		As per Major Component	
ii) Maximum allowable extension beyond the period provided in (i) above. Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above		As per Major Component	
Clause 2			
Authority for fixing compensation under clause-2		Superintending Engineer of Major Component	
Clause 5			
Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given		As per Major Component	
SI. No.	Description of *Milestone (Physical)	Time Allowed in days (from date of start)	Amount to be with-held in case of non-achievement of milestone
Refer milestone at page No. -144-146			
(i)	Time allowed for execution of work	9 Months	
Authority to decide:-			
(i)	Authority to convey the decision of shifting of milestone and Extension of time	Executive Engineer of Major Component	
(ii)	Authority to decide rescheduling of mile stones and extension of time.	Superintending Engineer of Major Component	
(iii)	Shifting of date of start in case of delay in handing over of site	Superintending Engineer of Major Component	
PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site			
Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
Part-A	Portion without any hindrance	100%	As per Major Component



Part-B	Portions with encumbrances	NIL	-
Part-C	Portions dependent on work of other agencies	NIL	-
Clause 6			
Computerised Measure Book (CMB) / Electronic Measurement Book (EMB)			CMB
Clause 7			
Gross work to be done together with net payment/ adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.			Rs.2.00 Lakh subject to one payment per month(however bill of lesser amount may be paid as per the discretion of EIC)
Clause 7A			
Whether Clause 7A shall be applicable Clause 7A			Yes, applicable
Clause 8			
Authority to decide compensation on account if contractor fails to submit completion plans			Engineer-in-Charge
Clause 10 A			
List of testing equipment to be provided by the contractor at site lab			Testing equipments will be arranged by the agency as required at site.
Clause 10 B (ii)			
Whether Clause 10 B (ii) shall be Applicable			Not Applicable.
Clause 10 C			
Component of labour expressed as percent of value of work			
Clause 10 CC			
			Not Applicable
Clause 11			
Specification to be followed for execution of work.			CPWD Specifications with correction slips upto date.
Clause 12			
Clause-12			
12.2 (c) Deviation Limit beyond which clauses 12.2 (c) shall apply for Building work			100%
12.4			



(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)		100%			
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items		100%			
Clause 16					
Competent authority for deciding reduced rates.		Superintending Engineer, CHB of Minor Component.			
Clause 18					
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		All Tool & Plants, Safety equipments, ladder etc., required to be deployed by the contractor at site at his own cost			
Clause 19 C		Rs.500/- penalty for each default.			
Clause 19 D		Rs.500/- penalty for each default.			
Clause 19 G		Rs.500/- penalty for each default.			
Clause 19 C		Rs.500/- penalty for each default.			
Clause 25 Standard Clause -25 of GCC deleted and replaced as under: Any disputes arising between the parties to this agreement / contract shall be subject to the exclusive jurisdiction of the Court of Chandigarh only					
Clause 32					
Requirement of technical representative(s) and recovery rates					
	Requirement of Technical Staff		Minimum experience (Years)	Designation of Technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
Sr. No	Qualification	Number (of Major + Minor component)			
1	Graduate Engineer or Diploma Engineer Civil & Public Health Electrical	1 1	2 or 5 respectively	Project Manager cum planning /quality/site/billing Engineer	Rs.15000/- per month per person
	Assistant Engineer retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.				



	Diploma holder with minimum 10 year relevant experience with a reputed construction co. ca be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.		
Clause 38			
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.	
ii)	Variations permissible on theoretical quatities:		
	(a)	Cement For works with estimated cost put to tender not more than Rs.25 lakh For works with estimated cost put to tender more than Rs.25 lakh	3% plus/minus 2% plus/minus
	(b)	Bitumen All Works	2.5% plus & only & nil on minus side
	(c)	Steel reinforcement and structural steel section for each diameter, section and category	2% plus/minus
	(d)	All othe materials	Nil

ABSTRACT OF COST – PH COMPONENT

Sr. No.	Description	Building Works (PH Work)	Rainwater Disposal System
		Part-A Sub Head Total	Part-B Sub Head Total
1	Earth Work	24404.40	61507.09
2	Concrete work	32472.30	64897.27
3	Reinforced Cement Concrete	25519.90	176150.86
4	Masonry work	10954.85	107098.10
5	Finishing	6993.56	133071.99
6	Sanitary Installations	704950.77	169580.66
7	Water Supply	392776.85	--
8	Drainage	--	61507.09
	Total	1198072.63	712305.97
	Grand Total (Part-A +B)	19,10,378.60	


Executive Engineer-VII (PH)
Chandigarh Housing Board
Chandigarh

**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF EXHIBITION/MULTIPURPOSE HALL AT
KALAGRAM, MANIMAJRA, CHANDIGARH (COMPOSITE WORK)**
PART-A: PUBLIC HEALTH (PH) BUILDING WORKS

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
Sub Head A Item No. 1-2	Earth Work					24404.40
1	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.	9.03 cum	cum	254.53	2298.41	
2	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.					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	64.2 metre	metre	344.33	22105.99	
Sub Head B Item No. 3	Concrete work					32472.30
3	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) : 4 graded stone aggregate 20 mm nominal size)	1.89 cum	cum	7703.73	14560.05	
	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)	0.65 cum	cum	7132.88	4636.37	
	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	1.84 cum	cum	6660.89	12256.04	
	1:5:10 (1 Cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	0.16 cum	cum	6374.00	1019.84	
Sub Head C Item No. 4-5	Reinforced Cement Concrete					25519.90

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
4	Centering and shuttering including strutting, propping etc. and removal of form for all heights :					
	Suspended floors, roofs, landings, balconies and access platform.	1.69 sqm	sqm	906.68	1532.29	
	Columns, Pillars, Piers, Abutments, Posts and Struts,	9.45 sqm	sqm	939.98	8882.81	
	Edges of Slabs and Breaks in floor and wall					
	Under 20 cm wide	24.2 metre	metre	203.92	4934.86	
5	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.	96.443 kg	kg	105.45	10169.94	
Sub Head D Item No. 6	Masonry work					10954.85
6	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 : 4 (1 cement : 4 coarse sand)	1.52 cum	cum	7207.14	10954.85	
Sub Head E	Finishing					6993.56

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
Item No. 7 - 8						
7	12 mm cement plaster of mix :					
	1 : 4 (1 cement : 4 fine sand)	12.15 sqm	sqm	339.35	4123.10	
8	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.					
	12 mm cement plaster	6.53 sqm	sqm	439.58	2870.46	
Sub Head E Item No. 9-32	Sanitary Installations					704950.77
9	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :					
	Kitchen sink with drain board					
	510x1040 mm bowl depth 225 mm	1 No	each	7347.95	7347.95	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
10	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.	5Nos	each	341.41	1707.05	
11	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	5Nos	each	1011.84	5059.20	
12	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	7Nos	each	116.90	818.30	
13	Providing and fixing toilet paper holder					
	C.P. Brass	5Nos	each	785.87	3929.35	
14	Providing and fixing soil, waste and vent pipes :					
	100 mm dia					
	Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	94.2 metre	metre	1154.55	108758.61	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
15	Providing and fixing plain bend of required degree. 100 mm dia					
	Sand cast iron S&S as per IS - 1729	11 Nos	each	460.01	5060.11	
16	Providing and fixing heel rest sanitary bend 100 mm dia					
	Sand cast iron S&S as per IS - 1729	11 Nos	each	571.29	6284.19	
17	Providing and fixing terminal guard : 100 mm dia					
	Sand cast iron S&S as per IS - 1729	6 Nos	each	432.20	2593.20	
18	Providing and fixing collar : 100 mm dia					
	Sand cast iron S&S as per IS - 1729	11 Nos	each	453.07	4983.74	
19	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings				4754.20	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	100 mm dia	44 Nos	each	608.69	26782.36	
20	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					
	Sand cast iron S&S as per IS: 3989	10 Nos	each	1952.21	19522.10	
21	Providing and fixing push-button type soap dispenser of 0.80 litre capacity of approved make, made of ABS material, fixed to the wall with suitable cleats and C.P. brass screws, including cutting, drilling, and making good the wall wherever required, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	5 Nos	each	2403.00	12015.00	
22	Providing and fixing fully automatic touch-free infrared hand dryer of approved make, having stainless steel body, carbon brush motor, and rated power of 1150 W, including all necessary mounting accessories, electrical connections, fixing, testing, and commissioning, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	3 Nos	each	14086.00	42258.00	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
23	Providing and fixing single-piece white vitreous china Water Closet of size 370x670x720 mm (European Type - EWC) of approved make, with integrated dual-flush cistern, UF soft-close slim seat cover, stainless steel hinges, all internal cistern fittings, fixing accessories, connection accessories, and accessory set, including cutting and making good the walls and floors wherever required, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	5 Nos	each	27336.00	136680.00	
24	Providing and fixing white vitreous china flat-back half-stall urinal of size 385x325x635 of approved make, complete with C.P. brass spreader, fixing accessories, waste fittings, and all other necessary fixtures and fittings, including cutting and making good the wall wherever required, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	6 Nos	each	13247.00	79482.00	
25	Providing and fixing curved-shaped urinal partition made of 8 mm thick frosted glass of size 900 mm x 450 mm, fixed with expandable anchor fasteners, C.P. brass bolts and washers, embedded in wall and set in cement concrete, including cutting and making good the walls wherever required, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	5 Nos	each	5686.00	28430.00	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
26	Providing, fixing, testing and commissioning of automatic flushing system for urinals, comprising concealed-type sensor-operated flushing valve complete with installation box and control cock, suitable for both electric and battery operation, of approved make. The system shall automatically flush the urinal after each use. The item shall include all necessary fittings, fixtures, accessories, electrical and plumbing connections, testing, and commissioning, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	6Nos	each	17942.00	107652.00	
27	Providing and fixing White Vitreous China Table Top Wash Basin of size 625 mm x 410 mm x 120 mm of approved make, including 32 mm dia C.P. brass waste coupling of approved standard pattern, making good the counter slab wherever required, complete in all respects and to the satisfaction of the Engineer-in-Charge.					
	White Vitreous China table top Wash Basin Size 625 mm x 410 mm x 120 mm	5 Nos	each	12054.00	60270.00	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
28	Providing and fixing P-Type Floor Trap of size 100 mm x 100 mm, of approved make complete with all necessary fittings, connections, testing and commissioning, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	5 Nos	each	1329.00	6645.00	
29	Providing and fixing wall-mounted handicapped grab bar/support rail made out of 32 mm dia SS 304 grade stainless steel tubing of minimum 1.2 mm thickness with satin finish, complete with concealed type stainless steel flanges, nylon sleeves, anchor fasteners, screws and all necessary fixing accessories, firmly fixed to wall/floor as required, including drilling holes and making good the damaged surface, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	1 No	each	1896.00	1896.00	
30	Providing and fixing C.P. brass pillar tap with auto-closing system and 65 mm extension body, of approved make and quality, including all necessary fittings, connections, testing and commissioning, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	5 Nos	each	4872.00	24360.00	
31	Providing and fixing C.P. towel ring (round type) of approved make, including all necessary fittings and fixtures, complete in all respects and to the entire satisfaction of the	1 No	each	1701.00	1701.00	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	Engineer-in-Charge.					
32	Providing and fixing beveled-edge mirror looking glass (bevelled edge, including making holes) of size 1.0 m x 1.0 m, of 5.5 mm thick superior-quality glass of approved make, fixed to the wall with 4 Nos. stainless steel studs and spacers by making necessary holes, complete in all respects, as per the drawing or as directed by the Engineer-in-Charge, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	3.54 sqm	sqm	3027.00	10715.58	
Sub Head F Item No. 33-48	Water Supply					392776.85
33	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge Internal work - Exposed on wall.					
	32 mm dia nominal bore	9.6 metre	metre	507.24	4869.50	
	40 mm dia nominal bore	4.8 metre	metre	687.36	3299.33	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
34	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and 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 dia nominal bore	28.50 metre	metre	525.67	14981.60	
	25 mm dia nominal bore	30.58 metre	metre	613.33	18755.63	
35	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					
	32 mm dia nominal bore	11.20 metre	metre	652.20	7304.64	
	40 mm dia nominal bore	16.20 metre	metre	793.89	12861.02	
36	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc. External work					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	40 mm dia nominal bore	30 metre	metre	603.36	18100.80	
37	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :	1 No.	each	453.76	453.76	
38	Providing and fixing uplasticised PVC connection pipe with brass unions :					
	45 cm length					
	15 mm nominal bore	12 Nos.	each	95.58	1146.96	
39	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :					
	32 mm nominal bore	2 Nos	each	478.20	956.40	
	40 mm nominal bore	1 No.	each	617.29	617.29	
40	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.					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	5000 Ltr.	25000 litre	Per litre	10.75	268750.00	
41	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.					
	15mm nominal bore	7Nos	each	781.22	5468.54	
42	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.					
	15 mm nominal bore	5Nos	each	655.58	3277.90	
43	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931					
	15 mm nominal bore	15 Nos	each	561.56	8423.40	
44	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.	22 Nos	each	73.14	1609.08	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
45	Providing and fixing brass stop cock of approved make of nominal bore, including all necessary fittings, testing and commissioning, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.					
	(i) 32 mm nominal bore	2Nos	each	2582.00	5164.00	
	(ii) 40 mm nominal bore	1 No	each	2721.00	2721.00	
46	Providing and fixing G.I. Readymade Tank Nipple of nominal bore (ISI marked) of standard size, complete with check nut and rubber washer, including all necessary fittings and jointing materials, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.					
	(i) 32 mm nominal bore	10Nos	each	395.00	3950.00	
	(ii) 40 mm nominal bore	2Nos	each	549.00	1098.00	
47	Providing and fixing cockroach trap made of heavy-quality Salem stainless steel, 5" (125 mm) diameter, weight 280 gms, including all necessary fittings and fixtures, complete in all respects and to the entire satisfaction of the Engineer-in-Charge.	9Nos	each	719.00	6471.00	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
48	Providing and fixing in position Gun Metal ferrule (ISI Marked) with C.I. mouth cover including boring and tapping the main complete in all respects to the entire satisfaction of Engineer-in-Charge:					
	(i) 20 mm nominal bore	1 No	each	2497.00	2497.00	
	TOTAL				11,98,072.63	
	PART-B: RAINWATER DISPOSAL SYSTEM					
Sub Head A Item No. 1 & 2	EARTH WORK					61507.09
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.					
	All kinds of soil	68.70 cum	cum	173.56	11923.57	
2	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	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.	144 metre	metre	344.33	49583.52	
Sub Head B Item No. 3	CONCRETE WORK					64897.27
3	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 : 4 graded stone aggregate 20 mm nominal size)	2.0518 cum	cum	7703.73	15806.51	
	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	7.37 cum	cum	6660.89	49090.76	
Sub Head C Item No. 4 to 6	REINFORCED CEMENT CONCRETE					176150.86

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
4	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	4.52 cum	cum	8845.09	39979.81	
5	Centering and shuttering including strutting, propping etc. and removal of form for : Suspended floors, roofs, landings, balconies and access platform Edges of slabs and bricks in floors and walls Under 20cm wide	12.98 sqm.	sqm.	906.68	11769.29	
6	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars	407.86 mtr	mtr	203.92	83170.81	
Sub Head D Item No. 7	MASONRY WORK	391 kg	kg	105.45	41230.95	107098.1
7	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	Cement mortar 1:4 (1 cement : 4 coarse sand)	14.86 cum	cum	7207.14	107098.10	
Sub Head E Item No. 8	FINISHING					133071.99
8	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)	309.83 sqm.	sqm.	429.50	133071.99	
Sub Head : F Item No. 9 to 13	DRAINAGE					169580.66
9	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	79 metre	metre	544.10	42983.90	
	250 mm dia. R.C.C. pipe	22 metre	metre	879.84	19356.48	
	300 mm dia. R.C.C. pipe	43 metre	metre	972.24	41806.32	
10	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia	6 Nos.	each	541.42	3248.52	

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.					
11	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	8 Nos.	each	2076.68	16613.44	
12	Providing and laying non-pressure NP2 class (light duty) reinforced cement concrete (R.C.C.) pipes of 400 mm diameter with collars, jointed with stiff cement mortar 1:2 (1 cement:2 fine sand), including testing of joints, excavation support as required, alignment, laying to correct gradient, and all incidental works complete in all respects and to the entire satisfaction of the Engineer-in-Charge.					

S. No.	DESCRIPTION OF ITEM	QTY.	Unit	Rate	Amount	Sub Head Total
	400 mm dia. R.C.C. pipe	30 metre	metre	1467.00	44010.00	
13	Making connection of drain or sewer line for 400 mm dia pipe with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :					
	For pipes 400 mm diameter	1 No.	each	1562.00	1562.00	
	Total				7,12,305.97	7,12,305.97

Executive Engineer-VII(PH)
Chandigarh Housing Board,
Chandigarh

Mile stone Programmer (PH Component)

(In Physical Terms)

PART-A: PUBLIC HEALTH (PH) BUILDING WORKS

Description of Milestone (Physical)				Time allowed in Days (from date of start)	Amount to be with-held in case on non-achievement of respective milestone.
1 ST Quarter					
S. No	Description	During the quarter	Cumulative	68 Days	0 % of Tendered Amount of PH Component
1	Earth Work	0%	0%		
2	Concrete Work	0%	0%		
3	Reinforced Cement Concrete	0%	0%		
4	Masonry work	0%	0%		
5	Finishing	0%	0%		
6	Sanitary Installations	0%	0%		
7	Water Supply	0%	0%		
8	Drainage	0%	0%		
2 ND Quarter					
S. No	Description	During the quarter	Cumulative	135 Days	1.50 % of Tendered Amount of PH Component
1	Earth Work	50%	50%		

2	Concrete Work	50%	50%		
3	Reinforced Cement Concrete	50%	50%		
4	Masonry work	40%	40%		
5	Finishing	10%	10%		
6	Sanitary Installations	10%	10%		
7	Water Supply	50%	50%		
8	Drainage	30%	30%		
3 RD Quarter					
S. No	Description	During the quarter	Cumulative	203 Days	2.25 % of Tendered Amount of PH Component
1	Earth Work	50%	100%		
2	Concrete Work	50%	100%		
3	Reinforced Cement Concrete	50%	100%		
4	Masonry work	50%	90%		
5	Finishing	40%	50%		
6	Sanitary Installations	40%	50%		
7	Water Supply	50%	100%		
8	Drainage	50%	80%		
4 TH Quarter					
S.	Description	During the	Cumulative	270 Days	



No		quarter			1.25 % Tendered Amount of PH Component
1	Earth Work	0%	100%		
2	Concrete Work	0%	100%		
3	Reinforced Cement Concrete	0%	100%		
4	Masonry work	10%	100%		
5	Finishing	50%	100%		
6	Sanitary Installations	50%	100%		
7	Water Supply	0%	100%		
8	Drainage	20%	100%		

General/Specific Conditions for Minor Component (Public Health) Part-C of work as applicable.

A: General/Specific Conditions for Major Component of work is also be applicable to Minor work.

Note: The order of preference in case of any discrepancy may be read as the following:-

- a. Nomenclature of items as per schedule of quantities.
- b. Particular specification and special condition, if any.
- c. CPWD specifications.
- d. Architectural Drawings.
- e. Indian standard specifications of B.I.S.
- f. Sound Engineering Practice.
- g. GCC.
- h. CPWD Manual.

B: General/Specific Conditions for Public Health Component in addition to S. No. A above.

1. General

- 1.1. General/Specific Conditions for major Component of work shall be applicable to the Public Health component.
- 1.2. Water tanks, taps: sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws of Municipal Body / Corporation where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested by the Municipal Body/ Corporation authorities wherever required at his own cost.
- 1.3. The contractor shall use the white cement with pigment to match the shade of flooring/ dado and for installation of P.H. fixtures where ever required without claiming anything extra.
- 1.4. On completion of work, the contractor shall submit at his own cost four prints of "as built" drawings to the Engineer-in-Charge. These drawings shall have the following information.
 - a) Run off of all piping and 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 out fall.
 - c) Run off of all water supply lines with diameters, location of control valves, access panels etc.

In case the contractor fails to supply "as built drawing" aforesaid within 30 days of the date of completion, then the recovery @ RS.10,000/- each for such set of drawings shall be made from the contractor's final bill.

- 1.5. All china ware to be used on the work shall be of first quality.

- 1.6. The layout of sanitary can be changed at any stage if required by the concerned Executive Engineer and no claim in this connection will be entertained. However, the payment shall be made as per actual work done.
- 1.7. Pre-cast concrete G.T./ I.C. covers and frames shall have CHB logo and brand name engraved on them.
- 1.8. All the hidden items such as water supply lines, drainage pipes, sewers etc. are to be properly tested before covering.
- 1.9. A copy of plumber's license will be supplied by the firm at the time of allotment of work.
- 1.10. M.S. hooks shall be provided for CPVC pipes/G.I. pipes/PE-AL-PE composite pipe in chase wherever required as directed by E.I.C. and nothing extra shall be payable on this account.

PROFORMA OF SCHEDULES - FOR MINOR WORK (ELECTRICAL COMPONENT)

SCHEDULE "A" Minor Work Electrical Work

Schedule of Quantities (as per PWD-3)

Electrical Work

Schedule of quantities for Electrical Work (Enclosed) which starts at page -156

SCHEDULE "D"

Extra schedule for specific requirements/documents for the work if any	Nil
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SCHEDULE "E"

Reference to General Conditions of contract of 2023 with amendments upto date

	Reference to General Conditions of contract	GCC for E.I. Works with amendments upto date.
	Name of Work	Construction of Exhibition/ Multipurpose Hall at Kalagram, Chandigarh - Electrical Component
	Estimated cost of Electrical Work	Rs.57,20,510/-
vi)	Earnest Money (Composite amount)	As per major Component.
vii)	Performance Guarantee	5% of tendered value
	A bid will be treated as abnormally low if the quoted bid amount is lesser than 80% of the estimated cost put to tender. Requirement of Additional Performance 5 Guarantee (APG): In case of abnormally low bids as defined above, the bidder Shall be required to submit Additional Performance Guarantee (APG) in addition to the Standard Performance Guarantee (PG). The amount of Additional Performance Guarantee (APG) shall be equivalent to the difference between the of 80% amount of ECPT and quoted amount. (e.g. if ECPT is A and quoted amount is 0.7A then the amount of APG shall be 0.8A-0.7A). The Additional Performance Guarantee (APG) shall be in the prescribed format of Performance Guarantee and has to be submitted within the time frame prescribed for submission of Performance Guarantee. The other terms and conditions of release etc. of APG shall be same as that of PG.	
viii)	Security Deposit	2.5% of tendered value

SCHEDULE "F"

Reference to General Conditions of Contract	GCC-2023 (Construction work) with latest amendments
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GENERAL RULES AND DIRECTIONS	
Officers inviting tender : -	Executive Engineer-V(Elect.) Chandigarh Housing Board, Chandigarh.
Definitions	
2(vi) Engineer-in charge	Executive Engineer-V(Elect.) Chandigarh Housing Board, Chandigarh.
2(viii) Accepting Authority	Chandigarh Housing Board, Chandigarh.
2(x) Percentage on cost of materials and labour to cover all overhead and profit	(7.5% CP & 7.5 % OH). 15%
2(x) (b) Standard Schedule of Rates	Delhi Schedule of Rates DSR (E & M)-2025
2(xi) Department	Chandigarh Housing Board, Chandigarh
9(ii) Standard CPWD Contract Form General Conditions of Contract Construction Works 2023, CPWD Form 7 as modified & corrected upto	Previous day of the last date of submission of the tender.
Clause 1	
i) Time allowed for submission of Performance Guarantee, Programme chart (Time and progress) and applicable labour licenses , registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance	7 Days
ii) Maximum allowable extension beyond the period provided in (i) above. Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above	15 Days
Clause 2	
Authority for fixing compensation under clause-2	Superintending Engineer, CHB of Major component
Clause 2A	



Applicable clause 2/ Clause 2A		No	
Clause 5			
Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given		15 Days 210-211	
Time allowed for execution of work		90 Days	
Authority to decide:-			
i) Authority to convey the decision of shifting of milestone and Extension of time		Executive Engineer of Major Component	
ii) Authority to decide rescheduling of mile stone and extension of time		Superintending Engineer of Major Component	
(iii) Shifting of date of start in case of delay in handing over of site		Superintending Engineer of Major Component	
PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site			
Part	Portion of site	Description	Time Period for handing over reckoned from date of issue of letter of intent.
Part-A	Portion without any hindrance	100%	15 Days
Part-B	Portions with encumbrances	NIL	-
Part-C	Portions dependent on work of other agencies	NIL	-
Clause 6			
Computerized Measure Book (CMB) / Electronic Measurement Book (EMB)		CMB	
Clause 7			
Gross work to be done together with net payment/ adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.		3.00 Lakh subject to one payment per month. (However bill of lesser amount may be paid as per discretion of EIC)	
Clause 7A			
Whether Clause 7A shall be applicable Clause 7A		Yes, applicable	
Clause 8			
Authority to decide compensation on account, if Contractor fails to submit completion plans.		Executive Engineer in Charge of Major Component.	

Clause 10 A		Applicable
List of testing equipment to be provided by the contractor at site lab		
1. Vernier Calliper	2. Clamp Tester	3. Earth Megger
4. LUX Meter	5. Multimeter	
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		Not Applicable.
Clause 10 C		Not Applicable
Component of labour expressed as percent of value of work		
Clause 10 CC		Not Applicable
Clause 11		
Specification to be followed for execution of work.		CPWD Specifications with correction slips upto date.
Clause 12		
12.2 (c) Deviation Limit beyond which clauses 12.2 (c) shall apply for Electrical work		100%
12.4		
(iii) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)		100%
(iv) Deviation Limit for items mentioned in earth work subhead of DSR and related items		100%
Clause 16		
Competent authority for deciding reduced rates.		Superintending Engineer, CHB of Minor Component.
Clause 18		
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		All Elect. Tool & Plants, Safety equipments, ladder etc., required to be deployed by the contractor at site at his own cost
Clause 19 C authority to decide penalty for each default		Rs. 500/- penalty for each default
Clause 19 D.....authority to decide penalty for each default		Rs. 500/- penalty for each default

Clause 19 G.....authority to decide penalty for each default			Rs. 500/- penalty for each default		
Clause 19 K.....authority to decide penalty for each default			Rs. 500/- penalty for each default		
Clause 25 Standard Clause -25 of GCC deleted and replaced as under: Any disputes arising between the parties to this agreement / contract shall be subject to the exclusive jurisdiction of the Court of Chandigarh only					
Clause 32 Requirement of Technical representatives and Recovery rates					
	Requirement of Technical Staff		Minimum experience (Years)	Designation of Technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
S. No	Qualification	Number (of Major + Minor component)			
1	Graduate Engineer or Diploma Engineer Civil & Public Health Electrical	1 1	2 or 5 respectively	Project Manager cum planning/ quality/ site/ billing Engineer	Rs.15000/- per month per person
	Assistant Engineer retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.				
	Diploma holder with minimum 10 year relevant experience with a reputed construction co. ca be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of Degree Engineers.				
Clause 38					
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.			
ii	Variations permissible on theoretical quantities:				
	(a)	Cement For works with estimated cost put to tender not more than Rs.25 lakh For works with	3% plus/minus 2% plus/minus		



		estimated cost put to tender more than Rs.25 lakh	
	(b)	Bitumen All Works	2.5% plus & only & nil on minus side
	(c)	Steel reinforcement and structural steel section for each diameter, section and category	2% plus/minus
	(d)	All other materials	Nil

ABSTRACT OF COST
Construction of Exhibition/Multipurpose Hall at Kalagarm, Chandigarh.
Electrical Component

S. No.	Description of Items	Total
1	SUB HEAD -I : ELECTRICAL INSTALLATION	5,93,591.00
2	SUB HEAD-II : (HVAC)	25,14,467.00
3	SUB HEAD-III : (FIRE FIGHTING SYSTEM)	5,79,427.00
4	SUB HEAD-IV : (FIRE ALARM SYSTEM)	92,451.00
5	SUB HEAD-V : (CCTV SURVELLIANCE SYSTEM)	2,78,942.00
6	SUB HEAD VI : (DG SET 125 KVA)	8,98,664.00
7	SUB HEAD -VII : (UPS 10 KVA)	2,12,026.00
8	SUB HEAD -VIII : (SOLAR POWER PLANT)	5,50,942.00
	G. Total	57,20,510.00


EE-V(Elect.)
CHB, Chandigarh.

**SCHEDULE OF QUANTITIES FOR THE WORK OF CONSTRUCTION OF EXHIBITION/MULTIPURPOSE HALL
AT KALAGARM, CHANDIGARH - ELECTRICAL COMPONENT**

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	SUB HEAD -I: ELECTRICAL INSTALLATION					
	Chapter-1: Wiring					
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 piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.					
i	Group C	40	point	2109.17	84367.00	
2	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.					
i	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	86	meter	375.55	32297.00	
ii	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	149	meter	420.21	62611.00	
3	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3pin 5/6 A modular socket outlet and 5/6A modular switch, connection and 5/6A modular switch, connections etc. as required.	6	Nos.	553.18	3319.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
4	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.	7 Nos.	each	668.89	4682.00	
5	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.					
i	Group C	51 Nos.	point	1264.69	64499.00	
6	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. (For light plugs to be used in non residential buildings).	16 Nos.	each	768.36	12294.00	
	Total Chapter-1 Wiring					264069
	Chapter-2 MCCB, MCB & DB's					
7	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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	incomer) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)					
i	12 way (4 + 36), Double door	1 No.	each	13714.68	13715.00	
8	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.					
i	Single pole	36 Nos.	each	289.28	10414.00	
ii	Triple pole and neutral	1 No.	each	1320.52	1321.00	
9	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current 30mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
i	63 A	1 No.	each	3650.96	3651.00	
	Total Chapter-2 MCCB, MCB & DB's				29101	
	Chapter-5 : Earthing					
10	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 Meter long etc. (but without charcoal/ coke and salt) as required.	2 Set.	set	13939	27878.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
11	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	6 Mtr	meter	1662.57	9975.00	
12	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	30 Mtr	meter	1264.69	37941.00	
13	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	30 Mtr	meter	141.09	4233.00	
	Total Chapter-5 Earthing					80027
	Chapter -8: LED Light					
14	LED Down lighter (SMD Type) (System lumen efficacy $\geq 120 < 135 \text{lm/Watt}$) Supplying, installation, Testing & Commissioning of LED Recessed/surface Down lighter (Round/ square/Rectangular) 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, frequency 50/60 Hz, Operating temp range -5°C to 40°C centigrade, internal surge protection of 2.5 KV with Short & Open circuit protection, THD $< 10\%$, P. F ≥ 0.95 , IP20, CRI > 80 , UGR (Unified GlareRating) < 19 , Flicker free (flicker should be below 5%), life time (LED, Driver & electrical circuitry), lifetime of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin),					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i	SDCM(Standard Deviation Color 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 $\geq 120 < 135$ 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 . 8 - 10 watt	50 Nos.	each	633.36	31668.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
15	LED Down lighter (SMD Type) (System lumen efficacy >135lm/Watt) Supplying, Installation, Testing & Commissioning of LED Recessed/surface Down lighter (Round /square/Rectangular) 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, 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), life time 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 Color Matching) < 3, Maximum power consumption should not more than the specified rating					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
16	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/HFPR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy >135 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 . 18 watt	7 Nos.	each	1004.00	7028.00	
	LED Panel light 2x2 ft., (System lumen efficacy >135 lm/Watt) Supplying, installation, Testing & Commissioning 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 , CCT 3000°K /					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i	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 >135 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)	30 Nos.	each	3634.72	109042.00	
17	22 watt LED Batten light (System lumen efficacy ≥120 <135 lm/Watt). Supplying, installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 0C to 40 0C, internal surge protection of 2.5 KV with Short & Open circuit protection , THD < 10% ,					

S.No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i	P.F.≥0.95, IP20, CRI >80, Flicker free (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing, complete in all respect i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥120 <135 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 aluminum housing such that LED junction temperature shall not rise above 90°C).	7	Nos.	each	771.4	5400.00
18	36 watt LED Flood Light, powder coated pressure die cast aluminum (System lumen efficacy ≥105 <120 lm/Watt). Supplying, Installation, Testing & Commissioning of Flood Light, powder coated pressure die cast aluminum body with built in					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	or separate driver as per the requirement with Driver efficiency >85%, Input voltage: 140-270 Volt AC, frequency 50/60 Hz, Operating temp range -5 0C to 50 0C, 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, MI-EMC as per CISPR -15, lenses for beam angle 30 deg-120deg as per the application and the project requirement., suitable tilt able fitting, 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 Color Matching) <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/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 aluminum housing such that LED junction temperature shall not rise above 90°C).					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i	70 watt	4 Nos.	each	2145.71	8583.00	161721
	Total Chapter-8 LED Light					
	Chapter -19 : Façade Lighting					
19	RGB LED Strip Supplying Installation, Testing and Commissioning of LED RGB/RGBWW/ RGBNW/ RGBW/RGBW suitable for exterior use having IP68 rating (as per site requirement). Flexible light strip of 5 mtr standard length with 12-15 Watt per meter. Luminaire shall be capable of producing dynamic colour changing light for with 16 million colours by DMX/Ethernet based control. Minimum System lumens 450 lumens/meter and System Lumen Efficacy > 30lm/w. Luminaire light beam spread - 100-110°, The Strip should have IP 68 protection and is offered IP 68 rated connectors to join the LED Strips in continuity. The luminaire must be offered with Aluminium channel for mounting the strip lights. The product should be complete with all accessories and Driver. Lifetime of complete luminaire (LED, Driver, Electrical & control circuitry) shall be at least L70:50000 burning hours at 50°C. Luminaire shall be conforming to BIS (IS 10322) with dully R Number marked. Luminaire shall be complete with replaceable driver and capable of operating at line voltage without any separate power supply from 24 V DC. Fixture shall be suitable to operate at an ambient temperature range of -10°C to +50°C. The successful bidder shall submit the following certifications/reports for approval before supply of	5 Nos.	each	9689.00	48445.00	



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	materials: product data sheets, LM79. report from NABL accredited lab, illuminance diagram, polar curve & LM80 report issued by LED manufacturer & RoHS Compliance along with CE certificate.					
20	Supply, Installation, Testing and Commissioning of exhaust fan heavy duty of 15" sweep (450 mm), 900 RPM complete with motor blades and louvers to be installed in the existing hole in wall/glazing with suitable arrangement. The rates include all the labour, carriage to site, connection, testing, commissioning etc. as required.	4 Nos.	each	2557.00	10228.00	
	Total Chapter-19 Façade Lighting					58673
	SUB HEAD-II (HVAC)					
	Chapter-1: Wiring					
21	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. 2 x 1.5 sq. mm					
22	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.	350 Mtr	Meter	78.16	27356.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i)	20 mm	350 Mtr	Meter	153.27	53645.00	
ii)	32 mm	30 Mtr	Meter	212.14	6364.00	
iii)	40 mm	40 Mtr	Meter	260.86	10434.00	
	Total Chapter-1 (Wiring)					97799
	Chapter -4 Cable Trays					
23	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, fastener, etc. as required.					
i)	225 mm width X 50 mm depth X 1.6 mm thickness	30 Mtr	Meter	1005.87	30176.00	
ii)	300 mm width X 50 mm depth X 1.6 mm thickness	40 Mtr	Meter	1077.93	43117.00	
	Total Chapter -4 Cable Trays					73293
	Chapter -10 MV Cable Laying					
24	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required					
	Upto 35 sq. mm (clamped with 1mm thick saddle)	50 Mtr	Meter	64.96	3248.00	
	Total Chapter -10 MV Cable Laying					3248
	Chapter -11 MV Cable Jointing and End Termination					
25	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.					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	4 X 10 sq. mm (25mm)	8 Nos.	Each	329.88	2639.00	2639
	Total Chapter -11 MV Cable Jointing and End Termination					
	Chapter -30 Plumbing & Ducting					
26	Supplying, installation, balancing and commissioning of fabricated at site GSS sheet metal rectangular/ round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports, bends, transitions, reducers, end caps, collars etc as required complete in all respect in confirmation with IS : 655 and approved drawings and specifications of following sheet thickness complete as required.					
i)	Thickness 0.63 mm sheet	150 Sqm	Sqm	1231.2	184680.00	
ii)	Thickness 0.80 mm sheet	50 Sqm	Sqm	1436.23	71812.00	
27	Supplying, Fixing, installation, testing and commissioning of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers in confirmation to SMACNA/IS and as per specifications complete etc. as required.	4 Sqm	Sqm	9767.35	39069.00	
28	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete in confirmation to SMACNA/IS and as	8 Sqm	Sqm	6379.28	51034.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	per specifications complete etc. as required.					
29	Supplying, fixing acoustic lining on wall and ceiling of AHU rooms with 50mm thick, density 32 kg/cu.m resin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25X50X50X50X25 mm made out of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80 mm perforated aluminium sheet etc. complete as required and as per specifications.	50 Sqm	Sq.m	1072.86	53643.00	
30	Supplying and fixing of following thickness duly laminated aluminium foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.					
	19 mm	150 Sqm	Sq.m	822.15	123323.00	
	Total Chapter -30 Plumbing & Ducting					523561
	Chapter -31 VRV/VRF					
31	Supplying, Installation, Testing & Commissioning of Modular Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling/heating having 100% hermetically sealed inverter type twin					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	Rotary/Scroll Compressor(s), minimum two compressors (with individual separate PCB) for above 14HP modules, microprocessor based Controller, top discharge type condensing unit(s), with R-410-A Refrigerant or equivalent, vibration Isolators with suitable foundation etc. complete as required. To have better efficiency condenser fan shall be capable to operate at different speed with respect to load. The unit shall deliver the rated capacity and in confirmation as per IS 18728:2024 and CPWD Specifications and work even at 50°C ambient temperature without tripping. The system shall be able to deliver 100% of the rated capacity upto 39 °C. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply and BMS compatible. The unit shall be filled with first charge of the refrigerant and ready for use as required. The condenser should be coated with a hydrophilic film to prevent water accumulation on the surface of the heat exchanger, enhance water dispersion, and reduce the risk of degradation, thereby improving overall performance and durability. The Indian Seasonal Energy Efficiency Ratio (ISEER) of the unit shall be as per Energy Conservation and Sustainable Building Code (ECSBC) 2024 as below and complete as per CPWD specification, connections, inter connections etc. as required. (For capacity 40 and 70 ISEER 6.6 for ECSBC+ Building) For Cooling or Heating or Both					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	14 HP to 22 HP (2 Units of 20 HP)	40 HP	Per HP	20690.78	827631.00	
32	Supplying, Installation, Testing and Commissioning of following minimum capacity Single way wall/corner VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 $^{\circ}$ C DB and 19 $^{\circ}$ C WB temperature. (Make will be same as of Outdoor)					
	1.6 TR	1 No	Each	42960.89	42961.00	

EE-III
EE-V(Elect.) EE-VII(PH)

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
33	Supplying, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted mid high static ductable type Indoor unit equipped with washable synthetic media pre filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 OC DB and 19 OC WB temperature. (Make will be same as of Outdoor) High Static Ductable units (minimum 49 to 77 pascal external static pressure)	1	No	46686.96	46687.00	
	4.0 TR					
34	Supplying, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted high ductable type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump.					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The cooling capacity of indoor unit will be at air inlet conditions of 27 OC DB and 19 OC WB temperature. (Make will be same as of outdoor)					
i)	6.6 TR	2 Nos.	Each	79235.98	158472.00	
ii)	8.0 TR	2 Nos.	Each	86468.87	172938.00	
35	Supplying, Installation, Testing and Commissioning of Y/T/Multi Joints. Joints shall be of same Original Equipment Manufacturer (OEM) make as of ODU's and IDUs					
i)	Indoor Units	2 Nos.	Each	4603.03	9206.00	
ii)	Outdoor Multi Joint	2 Nos.	Each	8219.47	16439.00	
36	Supplying, Installation, testing and commissioning including vacuumization 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, joining/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 :					
i)	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	15 Mtr	Meter	259.84	3898.00	
ii)	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	150 Mtr	Meter	351.19	52679.00	
iii)	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	15 Mtr	Meter	494.31	7415.00	



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
iv)	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	75 Mtr	Meter	624.23	46817.00	
v)	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	50 Mtr	Meter	750.09	37505.00	
vi)	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	50 Mtr	Meter	917.56	45878.00	
vii)	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	30 Mtr	Meter	1174.36	35231.00	
37	Drain Providing and fixing rigid PVC piping with fittings and supports, as per specifications as per direction of Engineer-in-charge & specifications enclosed as reqd					
	32 MM Thick	100 Mtr	Meter	110.00	11000.00	
	40 MM Thick	20 Mtr	Meter	140.00	2800.00	
38	HVAC MAIN OUTDOOR PANEL-1 (TERRACE) Supply, installation, testing and commissioning of dust, damp and vermin proof cubicle free floor, indoor type suitable for operation on $415 \pm 10\%$ volts, 50 Hz AC 3 phase 4 wire supply system fabricated out of Form 4b compartmentalized design and covered with CRCA/Aluzinc sheet steel of 2mm thick for frame work and 1.6mm thick for doors/ covers, 3mm thick for gland plates, Partition/mounting plate, vertical section shall be of 2.0mm /1.6mm Aluzinc sheet i/c cleaning & finishing complete with 9 tank process for powder coating in approved shade, having extensible type 4P Aluminium bus bars of high conductivity of min. 56-57% of IACs with E-91 grade aluminium.	1 No.	Each	183270.00	183270.00	
	INCOMER 1 NO					
	MCCB 250 Amp FP, 36 KA, WITH O/C, S/C & E/F, 1 No					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	METERING, RELAYS & INDICATION					
	PHASE INDICATING LIGHT R,Y,B 230V AC 3 Nos.					
	DIGITAL METER CTR /5A, CL-0.5,230Vac Aux WITH V,A, KVA, KWH 1 No.					
	METERING CFS 250/5A,15VA,CL-1.0 CAST RESIN 3 Nos.					
	2A SP MCB 10KA, TYPE 'C' CURVE 3 Nos.					
	BUSBAR: Electrolytic high conductivity aluminium three phase and neutral busbars rated at 415V, 200 amps, 50kA, insulated with heat shrinkable coloured PVC sleeves					
	OUTGOINGS:					
	40 AMP. FP MCCB + E/L RELAY 8 Nos.					
	Rotary operating for 40 Amp. MCCB 17 Nos.					
	EARTH LEAKAGE RELAY/5 AMP WITH CBCT AUX, 230 VOLT AC 17 Nos.					
	2A SP MCB, 10 KA TYPE 'C' CURVE 17 Nos.					
	20AMP Neutral Link 17 Nos.					
	Rotary operating for 25 Amp. MCCB 2 Nos.					
39	Supply of XLPE insulated PVC sheathed armoured copper conductor cable of 1.1 KV grade of size 4 core 10 sqmm to be laid in existing pipe or loose for connections.	65 Mtr	Meter	1740	113100.00	
	Total Chapter -31 VRV/VRF					1813927
	SUB HEAD-III (FIRE FIGHTING SYSTEM)					
	Chapter -27 Wet Riser & Sprinkler System					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
40	Supplying, installation, testing and commissioning of electric driven terrace pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required: (Terrace Pump) (b) Horizontal type, multistage centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal as required. (c) 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 forenclosure, horizontal foot mounted type with Class-F insulation, conforming to IS-12615:2018. (d) M.S. fabricated common baseplate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads.					
	450 lpm at 35 m Head	1 No.	Each	92754.76	92755.00	
41	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 1239/Class -II of IS: 3589 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 :					
i)	25 mm dia	62 Mtr	Meter	933.8	57896.00	
ii)	40 mm dia	10 Mtr	Meter	1277.89	12779.00	
iii)	65 mm dia	26 Mtr	Meter	1984.33	51593.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
iv)	100 mm dia	25 Mtr	Meter	3123.16	78079.00	
42	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					
	Single headed Gunmetal	1 No.	Each	8331.12	8331.00	
43	Supplying and fixing Single headed external yardhydrant valve with 1 No. 63 mm dia instantaneous FM Gunmetal/Stainless Steel coupling and cast iron wheel, ISI marked, conforming to IS 5290 (type A) with blank Gunmetal/Stainless Steel cap and chain as required :					
	Single headed Stainless steel	1 No.	Each	6731.48	6731.00	
44	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 :					
i)	65 mm dia	1 No.	Each	4782.68	4783.00	
ii)	100 mm dia	4 Nos.	Each	7380.07	29520.00	
45	Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS:5312 complete withrubber gasket, GI bolts, nuts, washers etc.as required :					
	100 mm dia	3 Nos.	Each	12030.8	36092.00	
46	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	GI wire, rivets etc. conforming to IS 636 (type-A) as required					
	: Stainless Steel (Grade 304)	3 Nos.	Each	4737.01	14211.00	
47	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: (a) 20 mm nominal internal dia water hose/thermoplastic (Textile reinforced) type -2 as per IS:12585(b) 20 mm nominal internal dia gun metal globe valve & nozzle. (c) Drum and brackets for fixing the equipments on wall. (d) Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket. 30 m	1 No.	Each	9581.6	9582.00	
48	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:	1 No.	Each	1782.34	1782.00	
49	Stainless Steel (Grade 304) Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as required for suitable dia MS pipe connection conforming to IS 904 as required: 2 way-100 mm dia M.S. Pipe	1 No.	Each	7370.93	7371.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
50	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 No.	Each	19693.03	19693.00	
51	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 OC with required accessories :					
	Pendent Sprinkler	22 Nos.	Each	607.99	13376.00	
52	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	1 No	Each	1695.05	1695.00	
53	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required.					
	100 mm dia	1 No.	Each	8190.04	8190.00	
54	Supplying, installation, testing & commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stock bar of following sizes complete as required.					
	700 mm	22 Nos.	Each	1517.43	33383.00	
55	Supply and fixing of ABC type dry powder stored pressure Fire Extinguisher 6 kg as per IS: 15683:2006 ISI Marked to	2 Nos.	Each	4092.00	8184.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	be fixed in existing MS enclosures fitted on wall with anchor fasteners).					
56	Supply and erection of FBC panel box of size 600mmx 600 mmx 450mm. The box shall be fabricated of MS sheet of 16G with hinged door having glass of size 350mmx350mm fixed in front door. The box shall be painted pure white from inside and post office red on out side. The box shall be installed on existing 65mm dia MS pipe flange.	1 No.	Each	5230.00	5230.00	
57	Supply and installation of suitable size 350g hammer as approved by the engineer in charge complete in aspects	1 No.	Each	606.00	606.00	
58	Supplying, installation, testing and commissioning of weather proof M.S cabinet door size 1200 mm x 2100 mm fabricated from 2.00 mm thick M.S. sheet and M.S angle 40mmx40mmx6mm complete with two portions of equal size glass 6mm thick with rubber gasket and locking arrangement. The door shall be painted powder coated, post office red colour after applying primer. The door shall be provided with solid hold fasts on both sides for firmly fixing on wall.	1 No.	Each	11223.00	11223.00	
59	Providing and fixing weather proof lockable cabinet of size not less than 0.9 x 0.6 x 0.5 mtr made out of MS sheet 2mm thick having central opening and 6 mm thick glazed glass doors (Two nos.) suitably marked on the outside with the letters "FIRE HOSE" including necessary locking arrangement and shall be painted with one coat of primer and two coats of synthetic enamel paint of approved shade as	1 No.	Each	8109.00	8109.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	required as per specifications.					
60	Supply and installing ISI marked (IS:15683) Fire Extinguisher, Carbon-di-oxide type capacity 4.5 Kgs.flat base including valve, discharge hose of not less than 10mm dia., 1M long and complete in all respects including initial fill with CO2 gas conforming to IS:307-1966 filled to a filling rate of not more than 0.667 and wall suspension bracket.					
	4.5kg capacity cylinder	2 Nos.	Each	6078.00	12156.00	
61	Electrical Control Panel					
	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control panel for automatic/manual control through suitable switch gear enclosed in 14 gauge CRCA sheet Cabinet with suitable angle support / sections as required. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anti corrosive process before painting with 2 coats of red oxide primer and finally with Siemens grey paints 2 Nos. Earthing Terminals shall be provided for 3 phase, 4 wire 50 Hz supply system	1 No.	Each	46077.00	46077.00	
	S/LT/C of MCCB 4 Pole 63 Amp. /415 Volts 50 Hz					
	Direct On Line (DOL) Starter, suitable for 7.5 HP Fire pump					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	motor with Digital Ammeter (0-50Amps.) and digital volt meter -500 volts) and coloured indicators, single phase preventer Minilec Make and allied items suitable for operation on Manual/Automatic mode on through existing pressure switch					
	This job includes erection of Panel at site which include fixing of panel, making power connections, starter wiring and earthing connections etc. testing and commissioning of panel with Fire pump.					
	Total Chapter -27 Wet Riser & Sprinkler System					579427
	SUB HEAD-IV (FIRE ALARM SYSTEM)					
	Chapter -28 Fire Detection and Alarm System					
62	FIRE DETECTION AND ALARM SYSTEM (CONVENTIONAL)					
i)	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	11 Nos.	Each	1241.35	13655.00	
ii)	Supplying, installation, testing & commissioning response indicator on surface/recess MS box having two LEDs metallic cover complete with all connections etc. as required.	3 Nos.	Each	225.33	676.00	
iii)	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in A.B.S. box with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	3 Nos.	Each	537.95	1614.00	

EE-III

EE-V (Elect.) EE-VII(PH)

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
iv)	Supplying, installation, testing & commissioning sector panel suitable for following zones, complete with visual indications for short circuit fault, open circuit fault, fire condition and all other standard facilities as per IS:2189 with mimic diagram for all area/zone covered, complete with all connections, interconnections as required.	1 No.	Each	9955.12	9955.00	
63	INTELLIGENT FIRE ALARM SYSTEM					
	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	3 Nos.	Each	4123.95	12372.00	
64	PUBLIC ADDRESS SYSTEM					
	Supplying, installation, testing & commissioning of 1.5/3/6W ceiling speaker complete as required.	4 Nos.	Each	1040.38	4162.00	
65	CABLING & WIRING					
i)	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.	104.50 Mtr	Meter	391.79	40942.00	
ii)	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.					
	speaker cable Single pair, 2-core, 1.5 sqmm	60 Mtr	Meter	61.92	3715.00	



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
66	Supply, Installation, Testing & Commissioning of LED Exit Signage with battery backup.	2 Nos.	Each	2680.00	5360.00	
	Total Chapter -28 Fire Detection and Alarm System					92451
	SUB HEAD-V (CCTV SURVEILLANCE SYSTEM)					
	Chapter -39 LAN					
67	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. 128Gbps and packet forwarding rate of 95Mbps or higher, 16K MAC table. Console Port, USB port, Stacking support of min. 4units 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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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, SSH, 6 kV surge protection on all Gigabit Ethernet ports and on all GE RJ-45 access ports. Certifications: FCC, CE marked UL/EN, RoHS relevant MTCTE, (TEC) BIS compliance /certification as applicable etc. complete as required.	1	No.	127273.9	127274.00	
68	24 port PoE Layer 2 Network Switch with PoE Support of 370W or higher with each copper port supporting 802.3at PoE+ min. 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	20	Nos.	9.14	183.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
69	Supplying, drawing, Testing and commissioning of Cat6A UTP 4 pair, 23 AWG solid copper cable in existing conduit/ on surface, U/FTP, LSZH, NonPlenum, Horizontal (solid) Cable suitable for high speed data networking application supporting upto 10Gbps over a 100 meter channel. The 4 Unshielded Twisted Pairs (UTP) cable with color coded insulation for easy identification should have FLAME PROPERTIES i.e. Flammability Test - IEC 60332-1, Smoke Density - IEC 61034, LSZH standards compliance: ANSI/TIA-568 C.2, ISO/IEC 11801, IEEE 802.3an, RoHS. Delay Skew should be < 45NS. The outer Cable Diameter should be 7.5 + 2 mm. Cable should have been tested and verified by UL/ ETL.					
	1 Run of cable	136 Mtr	Meter	62.93	8558.00	
	Total Chapter -39 LAN					136015
	Chapter 40 CCTV Camera System					
70	Supplying Installation Testing and Commissioning of 2MP IP IR Dome Camera having following specifications, type of lens and features etc :- 1) Signal System: PAL/NTSC, Signal to Noise Ratio:>50 dB, Camera should display Camera title, Date & Time in live & recorded video 2) Image Sensor: 1/2.8" or better progressive ScanCMOS to get color image even at nightcondition (Minimum Illumination: 0.006 Lux@ F1.4, AGC ON, 0 lux with IR or better) True Day & NightHigh Performance Mechanical IR cut filter with autoswitch, Integrated IR Source (Auto.					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	Manual)- Inbuilt IR LED's with effective distance upto 50 meter or better and 30 meter for colour view in night, Imaging: 1/3s to 1/30000s electronic shutter support, Auto Gain Control, White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking.) Compression (Minimum):- Video:- H.265 or better, H.264H, H.264, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723 4) Wide Dynamic Range:- WDR (120dB or more) 5) Digital Noise Reduction:- DNR (3D) On/Off 6) Video Streaming & Frame Rates :- Triple streaming, configurable (Main stream: 2MP (1920 × 1080)@25/30 fps, Sub streams minimum: 720P@25/30 fps). 7) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser, Edge Analytics: Tripwire, intrusion, Motion Detection 8) Cyber Security: AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, syslog, video encryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot. 9) 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.					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	10) Recording Management: Format SD, overwrite storage management, video to NAS device 11) Alarm Trigger : Motion/tampering detection; audiodetection; network disconnection detection; IP conflict detection; memory card state detection; memoryspace detection 12) Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP,NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE,NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS,unicast 13) System Capability: ONVIF, Camera shall supportopen source VMS 14) Ethernet: 1 RJ 45 10/100 Ethernet port15) Audio : It should support 1 x Built-In Mic and 1/1Alarm In/ Out for External Mic. and Speakers as persite requirement. 16) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE (802.3af)—to ensure continuous operation in the event of a failure in one power source. 17) Power Requirement: 12VDC/24 V DC/PoE (802.3af/ePoE 18) Housing/Enclosure:- IP67 weather proof, IK10,Metallic body 19) Operating Condition:- Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing)20) IR life: 40000 hours or higher 21) Video Bit rate: 32 KBPS - 8 MBPS or better 22) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS	5 Nos.	Each	8168.72	40844.00	
	2MP (@ 25/30fps@1080P (1920x1080)) IP IR Dome Camera with 2.8/ 3.6mm fixed lens					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
71	Supplying Installation Testing and Commissioning of 2MP Fixed Lens IP IR Outdoor Bullet Camera having following specifications and features etc :- 1) Signal System: PAL/NTSC, Signal to Noise Ratio: >50 dB, Camera should display Camera title, Date & Time in live & recorded video 2) Image Sensor: 1/2.8" or better progressive ScanCMOS to get color image even at night condition (Minimum Illumination: 0.006 Lux @ F1.4, AGC ON, 0 lux with IR or better) True Day & Night High Performance Mechanical IR cut filter with auto switch, Integrated IR Source (Auto, Manual) - Inbuilt Smart IR LED's with effective distance upto 50 meter or better and 30 meter for colour view in night, Imaging: 1/3s to 1/30000s electronic shutter support, Auto Gain Control, White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking, 3) Compression (Minimum):- Video:- H.265 or better, H.264H, H.264, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723.4) Wide Dynamic Range:- WDR (120dB or more) 5) Digital Noise Reduction:- DNR (3D) On/Off 6) Video Streaming & Frame Rates :- Triple streaming, configurable (Main stream: 2MP (1920 x 1080) @ 25/30 fps Sub streams minimum: 720P @ 25/30 fps).					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	7) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser, Edge Analytics: Tripwire, Intrusion, Motion Detection,8) Cyber Security: AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, syslog, videoencryption, IP/MAC filtering, HTTPS, trusted upgrade, trusted boot. 9) Onboard Storage: Camera should support built-in Micro SD /SDHC /SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memoryCard.10) Recording Management: Format SD, overwrite, storage management, video to NAS device,11) Alarm Trigger : Motion /tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection12)Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP,NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE,NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS,unicast,13) System Capability: ONVIF, Camera shall support open source VMS14) Ethernet: 1 RJ 45 10/100 Ethernet port 15) Audio : It should support 1 x Built-In Mic and 1/1 Alarm In/ Out for External Mic. and Speakers as per site requirement.16) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE (802.3af)—to ensure continuous operation in the event of a failure in one power source.17) Power Requirement: 12V DC/24 VDC/PoE(802.3af)/PoE 18) Housing/ Enclosure:- IP67 weather proof, IK10,Metallic					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	body 19) Operating Condition:- Ambient Temperature:- (-) 05°C to 50°C, humidity 95% (max) (non-condensing) 20) IR life: 40000 hours or higher 21) Video Bit rate: 32 KBPS - 8 MBPS or better 22) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS					
	2MP @ 25/30fps@1080P (1920x1080) Outdoor Bullet Camera with 2.8/ 3.6mm fixed lens.	4 Nos.	Each	7876.4	31506.00	
72	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 for number of channels of NVR to record per NVR and to provide a live view, storage and simultaneously Multi-channel playback of all IP, IR camera or more and must be ONVIF with minimum support of 256Mbps incoming Bandwidth.2) NVR should support H.265 or better, H.264,MJPEG, MPEG4 support 3) Must support 1 channel Input, 1 channel Output, RCA for Two-way Talk 4) Intelligent auto power on when power resumes after power outage.5) Storage: It should support minimum 2 SATA Slots with 16TB capacity/ Slot.6) Connectivity Interface : 1 Nos. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS232 7) Backup Interface : Its should have 2					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	Nosx USB port (1x USB3.0, 1xUSB2.0)8) Video Output Ports: 1x HDMI and 1 VGA 9) Alarm Ports: It should have 4/1 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, tempering, 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, UDP,NTP, DHCP, DNS, SMTP, UPnP, 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 and BIS Certified 14) Power Supply : Should support 12VDC, 4Amp or AC100-240V, 50/60Hz Power supply.15) Operating Condition : Ambient Temperature (-5°Cto 50°C), humidity 90% (max) (non-condensing)16) The VMS, NVR application shall support all the features & functionalities of the offered cameras. 17) VMS should consist of Base license and Channel Licenses. 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,					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	enabling remote monitoring and playback of cameras/NVR footage.19) The OEM must provide its own DDNS serverhosted in India, eliminating the need for a public IP address for remote monitoring over the Internet.20) Must support Resolution: 7680x4320 (8K).3840*2160, 1920x1080, 1280x1024,1280x720,1024x768 21) Must support recording resolution upto 32MP 22) Must support Continuous, Alarm, Motion, Instant, Panic Recording Mode 23) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoringpage to view the alert details. The snapshot function is supported on monitoring and playback page 24) 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 anycombination 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 25) It should support Network Support: HTTP, TCP/IP,SMTP, DHCP, DNS, DDNS, FTP, NTP, UPnP, Multi IP Setting. Convert multiple recording files to one avi/MP4 file. 26) 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. 27) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection,					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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 28) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email 29) 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 30) 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. 31) 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. 32) 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. 33) 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 34)					
	Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs,					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	presets and email. 35) 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. 36) Smart playback function: Should support smart search for the selected area in the video and smart playback to improve the playback efficiency 37) VCA (Video Content Analytic): Should support multiple video content analytics based on camera analytics.					
	16 Channel Network Video Recorder (NVR) having display split :- Main screen: 1/4/8/9/16, 2nd screen: 1/4/8/9/16	1	No.	12990.99	12991.00	
73	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, BSML, ICES-003/NNB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, ULcertification.					
	6TB (Terabytes)	1	No.	16621.64	16622.00	
	Total Chapter 40 CCTV Camera System					101963
	Chapter -42 Access Control System					



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S.No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
74	LED Display Supplying, Installation, Testing and Commissioning of following size 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 No.	Each	40183.85	40184.00	
75	32 inch or larger Supplying, Installation, Testing and Commissioning of HDMI cable for LCD display 5 MTR as required at side to entire satisfaction of engineer in charge	1 No.	Each	780.00	780.00	
	Total Chapter -42 Access Control System					40964
	Sub Head VI (DG Sct 125 KVA)					
	Chapter -29 Generator					
76	Supplying, 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 phasesystem & 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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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 0C, 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 dis Plate 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,					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	3 phase 50 Hz, AC supply with 0.8 lagging power factor at 40 OC, 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 litres 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 converter.(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					



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S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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 by-pass, 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 Reactive Hour (KVARH), KVA (Phase & Total), KW & provision for overload, short circuit, restricted earth fault, under frequency, power (aluminium) 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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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 switch3. 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 P 10 accuracy for protection and 15 VA class-I for metering5. Energy analyser unit to indicate current, Voltage(LN & L_L), kW, kVA (Phase & Total), Frequency, KWH, PF.6. LED Indicating lamps for load on mains and load on set7. Fuse/ MCB for instruments8. 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 monitor10. Supply failure timer11. Restoration timer12. 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 indicator15. 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 warning16. Protection for over/under Frequency, Loss of AC sensing, Over Current, Unbalancing load with suitable number of relays and accessories17. Maintenance notification based on Engine Run Hour & due date.18. Load Management through PLC to achieve auto opening and closing of incomer					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
i	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. 125KVA	1	No.	898663.75	898664.00	
	Total Chapter -29 Generator					898664
	SUB HEAD -VII (UPS 10 KVA)					
	Chapter -26 UPS					
77	Online UPS- Input supply: Three Phase, Output supply: Three Phase. Supplying, installation, Testing & Commissioning of following capacity at full load (Unity Power Factor) at operating temperature 0 to 40 °C, 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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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 deep discharge protection, 10KV surge. UPS must comply with low voltage electromagnetic compatibility (EMC) achieved as per EN 6204, EN6204 Part 1 and Part 2, it shall 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 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.					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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-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(THD) 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					
i	10KVA (Each Power module shall be < 10 KVA)	1	No.	212026.40	212026.00	
	Total Chapter -26 UPS					212026
	SUB HEAD -VIII (SOLAR POWER PLANT)					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
78	Chapter -17 Solar PV Power Generation 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	10	kWp	55094.20	550942.00	

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	not be less than 23% at STC with temperature coefficient of P_{max} 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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	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.					

S. No.	Description of items	Qty.	Unit	Rate	Amount	Sub Head Total
	h) DC Distribution Board And AC Distribution Panel Board: IP65, free standing, metal clad, having copper bus bar, having required protection and control gears, connection- interconnection, etc. as required					
	Total Chapter -17 Solar PV Power Generation				5720510.00	550942
	G. Total					


Executive Engineer-V(Elect)
Chandigarh Housing Board,
Chandigarh

Mile stone Programmer

(In Physical Terms)

Construction of Exhibition/Multipurpose Hall at Kalagarm, Chandigarh – Electrical Component.

S. No.	Description of Milestone (Physical)				Time allowed in Days (from date of start)	Amount to be with-held in case on non-achievement of respective milestone.
1	1 st Quarter					
	S. No	Description	During the quarter	Cumulative	68.8 days	0.03% of tendered amount of Electrical component
	1	Electrical Installation	5%	5%		
	2	HVAC	-	-		
	3	Fire Fighting System	-	-		
	4	Fire alarm system	-	-		
	5	CCTV Surveillances System	-	-		
	6	DG Set 125 KVA	-	-		
	7	UPS 10 KVA	-	-		
	8	Solar Power Plant	-	-		
2	2 nd Quarter					
	S. No	Description	During the quarter	Cumulative	134 days	0.468% of tendered amount of Electrical component.
	1	Electrical Installation	25%	30%		
	2	HVAC	12.5%	12.5%		
	3	Fire Fighting System	12.5%	12.5%		
	4	Fire alarm system	-	-		
	5	CCTV Surveillances System	-	-		
	6	DG Set 125 KVA	-	-		
	7	UPS 10 KVA	-	-		
	8	Solar Power Plant	-	-		
3	3 rd Quarter					
	S. No	Description	During the quarter	Cumulative	202.4 days	
	1	Electrical Installation	37.5%	67.5%		
	2	HVAC	37.5%	50%		
	3	Fire Fighting System	37.5%	50%		



	4	Fire alarm system	12.5%	12.5%		
	5	CCTV Surveillances System	12.5%	12.5%		
	6	DG Set 125 KVA	12.5%	12.5%		
	7	UPS 10 KVA	12.5%	12.5%		
	8	Solar Power Plant	-	-		
4	4th Quarter					
	S. No	Description	During the quarter	Cumulative		
	1	Electrical Installation	32.5%	100%		
	2	HVAC	50%	100%		
	3	Fire Fighting System	50%	100%		
	4	Fire alarm system	87.5%	100%		
	5	CCTV Surveillances System	87.5%	100%		
	6	DG Set 125 KVA	87.5%	100%		
	7	UPS 10 KVA	87.5%	100%		
	8	Solar Power Plant	100%	100%		
					270 days	3.136% of tendered amount of Electrical component

General/Specific Conditions for Electrical (E&M) Component to be read in conjunction with General/Specific conditions of Major components of work as applicable:-

1. If the main contractor does not have authorization/ electrical license for carrying out the electrical work as per Government of India norms then main contractor have to associate or carry out the same from authorized electrical licensed contractor.
2. All the hidden items such as conduits etc. are to be properly tested before covering.
3. Contractor shall have to check the Site Order Book regularly for any instructions of the Engineer-in charge or his authorized representative and sign the site order book. He shall be bound to ensure compliance with the instructions recorded therein.
4. Routine type tests for the various items of equipment shall be performed at the Manufacturer works and tests certificates furnished.
5. All tools, instruments, plants and labour/operating personnel for the site test shall be provided by the contractor at his own cost.
6. **WARRANTIES/GUARANTEE:** All equipments shall be guaranteed for a period of 12 months during the Defects Liability Period to be considered from the date of overall completion of the project against unsatisfactory performance and /or break down due to defective design, workmanship of material. The equipment's of components, or any part thereof, so found defective during guarantee period shall be forth with 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.
7. The successful tenderer should furnish well in advance copy each of detailed instructions and manuals of manufactures for all items of equipments regarding installation, adjustments operation and maintenance.
8. All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works covered by specification.
9. The contractor shall have to produce all the relevant records to ascertain the genuine equipment from the manufactures has been supplied and erected.
10. Contractor shall provide appropriate cover for all Electrical Panels etc. to protect them from rust/damages, during execution of work till the work is actually completed and handed over to the department.
11. All concealed work and earthing shall be done in the presence of the Engineer-In-Charge or his authorized representative.
12. The Contractor shall provide all incidental items not shown or specified in particular but necessary for proper execution of works in accordance with the drawing, specification and schedule of items.
13. The electrical Installation work shall be carried out in accordance with Indian Standard Code of Practice. It shall also be in conformity with the current Indian

Electricity rules and regulations and requirements of the Local Electricity Supply Authority and Fire Insurance regulations, so far as these become applicable to the installation.

14. Electrical work in general shall be carried out as per CPWD's general specification for Electrical Works Part-I Internal 2013 & Part-II (External) 1994, with up to date correction /amendments, relevant Indian Electricity Rules and as per directions of Engineer-in-charge. For electrical panels, CPWD General Specifications for Electrical Works Part - IV shall be applicable. In case of variation, nothing extra shall be paid on account of these additional specifications & conditions as the same are to be read along with schedule of quantities for the work.
15. All Electrical installation shall comply with the requirements of Indian Electricity rules 1956 and Indian Electricity Act-1910 as amended up to date and bye laws of authority of State Government or any other department.
16. All electrical and other works will conform to various Indian Codes as listed in the Technical Specifications.
17. For the items not covered under any of the specifications stated above, the work shall be executed as per Manufacturer's specifications/ General Engineering Practice and / or as per direction of Engineer in Charge.
18. The bidder should note that the specifications furnished in the tender is of general nature only and it is the responsibility of the bidder to design, supply, install and commission the equipment and services required for the satisfactory performance of the installation. All the items of equipment required for the safe and satisfactory operation of the installation shall be supplied and installed by the bidder.
19. The term complete installation shall not only mean major items of the plant and equipments covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation. However, major equipment not covered in the scope of the work and required subsequently as an additional feature, not covered in the contract specifications, shall be paid extra. The decision of the Engineer-In-Charge in the matter shall be final and binding upon the contractor.

CODES AND STANDARDS

20. In addition to the requirements the design, manufacture, inspection and testing of the piping, fittings, valves and specialties covered under this specification shall conform, in general, to the standards and codes (latest edition) mentioned below:

IS : 694 - 1990	PVC insulated Electric cable for working voltage upto and including 1100 volts.
IS : 732 - 1989	Code of practice for electrical wiring and installation
IS : 1255 - 1983	Code of Practice for installation and maintenance of Power Cables upto and including 33 KV rating (Second Revision)
IS : 1258 - 1987	Bayonet lamp holders(Third revision)
IS : 1293 - 1988	Three pin plugs and sockets outlets rated voltage upto and including 250 volts and rated current upto and including 160 amps.
IS : 1554 - 1988 (Part - I)	PVC insulated (Heavy Duty) electric cables for working voltages upto and including 1100 volts.



IS : 1646 - 1982	Electrical installation fire safety of buildings (general) Code of practice.
IS : 1651 & 1652 - 1991	Stationary cell and batteries, lead acid type
IS : 1885 - 1971	Glossary of items for electrical cables and conductors
IS : 2309 - 1989	Protection of building and allied structures against lightning
IS : 2551-1982	Danger notice plate.
IS : 3043 - 1987	Code of practice for earthing.
IS : 3480 - 1966	Flexible steel conduits for electrical wiring.
IS : 3837 - 1976	Accessories for rigid steel conduit for electrical wiring.
IS : 4146 - 1983	Application guide for voltage transformers
IS : 4615 - 1968	Switch socket outlets.
IS : 5133 - 1969(Part-I)	Boxes for the enclosure of electrical accessories.
IS : 5216 - 1982(Part-I)	Guide for safety procedures and practices in electrical work.
IS : 5578 & 11353-1985	Marking and arrangement of bus bars
IS : 8623 - 1977 (Part -I)	Factory built assemblies of switchgear and control gear for voltages upto and including 1000 V AC and 1200 V D C.
IS : 8623 - 1980(Part -II)	Bus Bar trunking system
IS : 8828 - 1996	Miniature Circuit Breakers
IS : 9537 - 1981	Rigid Steel Conduits for electrical wiring (Second Revisions)
IS : 10810 - 1988	Methods of test for cables.
IS : 12640 - 1988	Earth Leakage Circuit Breakers
IS : 13947-1989	Moulded Case Circuit Breakers
IS : 13947 - 1993	General requirement for switchgear and control gear for voltage not exceeding 1000 Volts.
IS 1248 - 1968	Elect. indicating instruments.
IS 2705 - 1981	Current transformers
IS 3156 - 1965	Voltage transformers.
IS 3231 - 1965	Protective relays

Special Conditions for Specialized Jobs-

HVAC Works

1. The contractor shall inspect the site and existing installation before commencement of work and shall acquaint himself fully with the site conditions and existing services.
2. The HVAC system/equipment shall be supplied, installed, tested and commissioned complete in all respects as per the approved specifications, drawings and BOQ.
3. All HVAC equipment, materials, accessories and components supplied shall be of approved make and conforming to the specified technical requirements.

4. All equipment shall be installed strictly in accordance with the manufacturer's instructions, approved drawings and applicable standards/codes.
5. All necessary accessories required for satisfactory operation of the HVAC system, as specified in the BOQ/specification, shall be supplied and installed by the contractor.
6. The contractor shall carry out necessary pressure testing, leak testing, insulation testing, electrical testing and functional testing, as applicable to the HVAC system.
7. The contractor shall carry out complete testing and commissioning of the HVAC system and submit the test/commissioning reports to the Engineer-in-Charge.
8. The contractor shall ensure proper functioning of all controls, thermostats, sensors, safety protections, interlocks and other control arrangements, wherever applicable.
9. Refrigerant piping, drainage piping, insulation, supports, electrical connections and other associated works shall be executed as per the approved specifications and manufacturer's recommendations, wherever included in the scope.
10. All refrigerant piping shall be properly tested for leakage and evacuated before charging with refrigerant, wherever applicable.
11. The contractor shall ensure proper vacuuming, refrigerant charging and commissioning of the system as per the manufacturer's recommendations.
12. All electrical connections associated with the HVAC equipment shall be properly terminated, tightened, labelled and tested before commissioning.
13. The contractor shall provide necessary earthing for HVAC equipment as per the approved design/specification and applicable requirements.
14. The contractor shall provide operation & maintenance manuals, manufacturer's literature, test certificates, warranty certificates and as-built drawings, wherever applicable, after completion of the work.
15. The contractor shall provide necessary training to the Department's designated personnel regarding operation and basic maintenance of the HVAC system.
16. The complete HVAC installation shall be covered by the warranty/guarantee period specified in the tender. Any defect arising due to defective material, manufacturing defect or workmanship during the warranty period shall be rectified/replaced by the contractor without additional cost to the Department.
17. Any equipment/material found defective or not conforming to the approved specifications shall be rejected and replaced by the contractor at his own cost.
18. The contractor shall comply with all applicable Indian Standards, statutory requirements and safety provisions relevant to the work.
19. The contractor shall be responsible for satisfactory installation, testing and commissioning of the complete HVAC system, including all incidental works necessary for its proper functioning.
20. On successful completion and commissioning, the contractor shall hand over the complete HVAC system to the Department along with all relevant documents, test reports, warranty certificates and manuals.

Fire Fighting work :

1. Fire fighting installation shall be in conformity with the regulation of local fire department and National Building Code.
2. In general, Fire fighting work shall be carried out as per CPWD's specifications; Part V Wet Riser & Sprinkler Systems - 2023 with up to date correction /amendments, relevant Indian Electricity Rules, as per the requirement of local concerned authority and as per directions of Engineer-in-charge. In case of variation, nothing extra shall be paid on account of these additional specifications & conditions as the same are to be read along with schedule of quantities for the work.
3. The contractor shall be responsible for obtaining the approval of local fire department for installation done under the scope of work. The work will not be considered a complete unless the NOC from local fire department is provided which has to be arranged by the contractor except the official fee/charges for conducting inspection by the departments if any shall be borne by the department.
4. The installation must be tested both on electricity / diesel pump. Diesel and generator for the testing have to be arranged by the contractor.

CODES AND STANDARDS

5. In addition to the requirements the design, manufacture, inspection and testing of the piping, fittings, valves and specialties covered under this specification shall conform, in general, to the standards and codes (latest edition) mentioned below:

IS : 780	Specification for sluice valves for water works purposes (50 mm to 300 mm size).
IS : 5312 (Part 1)	Specification for swing check type reflux (non return) valves: part 2 Multi door pattern.
IS : 5312 (Part 2)	Specification for swing check type reflux (non return) valves: part 2 Multi door pattern.
IS : 12992 (Part 1)	Safety relief valves, spring loaded : Design
IS : 13095	Butterfly valves for general purposes.
TAC	Tariff Advisory Committee fire protection manual Part-I.
TAC	Rules of Tariff Advisory Committee for automatic sprinkler system.
NFPA : 12 , 1993	Standards on Carbon Dioxide Extinguishing System
IS : 636	Non-percolating flexible fire fighting delivery hose.
IS : 884	Specification for first aid hose reel for fire fighting.
IS : 901	Specification for couplings, double male and double female, instantaneous pattern for fire fighting.
IS : 902	Suction hose couplings for fire fighting purposes.
IS : 903	Specification for fire hose delivery couplings, branch pipe, nozzles and nozzle spanner.
IS : 904	Specification for 2-way and 3-way suction collecting

	heads for fire fighting purposes.
IS : 907	Specification for suction strainers, cylindrical type for fire fighting purposes.
IS : 908	Specification for fire hydrant, stand post type.
IS : 909	Specification for underground fire hydrant, sluice valve type.
IS : 1648	Code of practice for fire safety of building (general): Fire fighting equipment and its maintenance.
IS : 2171	Specification for portable fire extinguishers dry powder (cartridge type)
IS : 2190	Selection, installation and maintenance of first aid fire extinguishers – Code of practice.
IS : 2871	Specification for branch pipe, universal, for fire fighting purposes.
IS : 2878	Specification for fire extinguishers, carbon dioxide type (portable and trolley mounted).
IS : 3844	Code of practice for installation and maintenance of internal fire hydrants and hose reel on premises.
IS : 5290	Specification for landing valves.
IS 5714	Specification for coupling, branch pipe, nozzle, used in hose reel tubing for fire fighting.
IS : 8423	Specification for controlled percolation type hose for fire fighting.
IS : 10658	Specification for higher capacity dry powder fire extinguisher (trolley mounted).
IS : 1309	External hydrant systems – Provision and maintenance – Code of practice.
IS : 1520	Specification for horizontal centrifugal pumps for clear cold fresh water.
IS : 8418	Specification for horizontal centrifugal self priming pumps.
IS : 1239 (Part 1) & (Part 2)	Mild steel, tubes, tubular and other wrought steel fittings: Part 1 Mild Steel tubes. Part 2 Mild Steel tubular and other wrought steel pipe fittings.
IS : 4711	Methods for sampling steel pipes, tubes and fittings.
IS : 6392	Steel pipe flanges

Fire Alarm System

1. Fire Alarm Control Panel (FACP):

The Fire Alarm Control Panel shall be installed at the approved location and shall be properly configured for all connected detection, alarm and monitoring devices. All zones/loops/devices shall be properly identified and labelled.

2. Detection & Alarm Devices:

Smoke detectors, heat detectors, manual call points, hooters/sounders, flashers and other devices shall be installed at the locations shown in the approved drawings

and as per the manufacturer's recommendations. Proper coverage of the protected area shall be ensured.

3. Fire Alarm Cabling:

Fire alarm cables shall be of suitable type and size as specified and shall be properly routed, supported, terminated and labelled. Cabling shall be segregated from power cables wherever required and all connections shall be properly secured.

4. Loop/Zone Testing:

Each detection loop/zone and every connected device shall be individually tested for proper operation. Open circuit, short circuit, earth fault and device fault monitoring shall be checked wherever applicable.

5. Alarm & Indication Test:

The operation of smoke/heat detectors and manual call points shall be tested by actual activation. Proper operation of hooters/sounders, visual indicators, fire alarm panel indications and corresponding zone/device identification shall be verified.

6. Battery & Power Supply:

The Fire Alarm System shall be provided with the specified power supply and standby battery arrangement. Mains failure, battery operation, battery charging and associated fault indications shall be tested and verified.

7. Testing, Commissioning & Handover:

The complete Fire Alarm System shall be tested and commissioned by the contractor/manufacturer's authorized engineer. The contractor shall submit test/commissioning reports, approved drawings/as-built drawings, device/loop details, configuration details, O&M manuals and warranty documents at the time of handover. Any defect observed during testing and commissioning shall be rectified by the contractor at no extra cost.

8. Make/Model & Specification:

The make, model and technical specifications of FACP, detectors, manual call points, hooters/sounders, modules and other major components shall be as approved. No change in make, model or specification shall be made without prior approval of the Engineer-in-Charge.

CCTV SYSTEM

1. Camera Installation & Coverage:

All CCTV cameras shall be installed at the locations shown in the approved drawings/layout. Proper field of view, coverage and camera orientation shall be ensured so that the required area is effectively covered without obstruction.

2. Cabling & Connectivity:

CCTV network/data cables, power cables, connectors, patch cords, glands, conduits, cable trays and other accessories shall be properly installed, supported, terminated and labelled as per approved layout and manufacturer's recommendations. Cable routing shall be neat and protected from damage.

3. NVR/VMS & Camera Integration:

All IP cameras shall be properly integrated with the NVR/VMS. The contractor shall ensure proper communication between cameras, network switches, NVR and monitoring stations. All cameras shall be configured with the required IP address, recording parameters and user settings.

4. Storage & Recording Test:

The complete recording system shall be tested for continuous recording, playback, search, backup/export and retrieval of recorded footage. Recording capacity shall be verified as per the approved technical specifications.

5. Network & Communication Test:

Communication between all cameras, PoE/network switches, NVR/VMS and monitoring systems shall be tested. Any packet loss, communication failure, abnormal video, time synchronization issue or network-related fault observed during commissioning shall be rectified by the contractor.

6. Camera Performance & Functional Test:

Each camera shall be tested for live view, image quality, day/night operation, IR illumination, motion detection and other specified features. Where applicable, PTZ movement, zoom, preset and auto functions shall also be tested.

7. Testing, Commissioning & Handover:

The complete CCTV system shall be tested and commissioned by the contractor/manufacturer's authorized engineer. The contractor shall submit the final camera layout, IP address details, configuration details, test reports, O&M manuals, warranty documents and other required documents

at the time of handover. Any defect noticed during testing/commissioning shall be rectified at no extra cost.

DG SETS

1. The AMF panel should be of the same make as that of DG set.
2. The DG set manufacturer quoted by the firm should have authorized service center in Chandigarh or 20 KMs radius from Chandigarh.
3. The DG sets shall be confirming to the latest emission norms fixed by Ministry of Environment & Forest vide notification No. 595, dated 11.12.2013.
4. The work shall be carried out as per CPWD specifications for Electrical works Part-VII (DG Sets) 2022. If any item is not available in the CPWD specifications, relevant ISI specifications shall be followed.
5. All the connections to the BDB'S / IC, switches and earthing of metallic cases shall be made with thimbles/lugs duly crimped with proper crimping tools. The DG. Set. shall be guaranteed for a period of 12 months from the date of commissioning, testing and handing over. The guarantee covers, unsatisfactory performance and breakdown due to defective design, workmanship or material. All the equipments or components or any part thereof so found defective during the guarantee period shall be forthwith repaired/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, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer In charge in this regard shall be final.
6. The DG Sets shall be got inspected in the presence of the representative of the CHB at the manufactures premises before dispatch of the same to site. The firm will also submit test reports for the main parts of the DG sets. The firm will arrange inspection by one Engineer at factory premises including travel and stay expenses.
7. The DG sets and AMF panels of specified makes are procured from OEM/OEA only
8. Inspection and testing of DG set and AMF panel before dispatch shall be carried out in the works of OEM/OEA only.
9. The contractor shall submit written commitment from OEM/OEA to supply the DG sets and delivery schedule as per requirement.

10. The contractor shall submit written commitment from OEM/OEA or authorized provider of engine manufacturer for satisfactory installation and commissioning of the work.
11. The contractor shall submit written commitment from OEM/OEA that required Guarantee of DG set from OEM/OEA in favor of Engineer-in-Charges to cover defect liabilities.
12. The contractor shall submit written commitment that an under taking that mandatory free service shall be carried out during the Guarantee period by the authorized service provider of Engine manufacture.
13. The agency shall submit the Test Report of DG Set from the manufacture /OEM of the DG Set.

UPS System

1. The UPS system shall be supplied, installed, tested and commissioned complete in all respects as per the approved specifications, drawings and BOQ.
2. All equipment and materials supplied shall be new, unused, of approved make and conforming to the specified technical requirements.
3. The UPS shall be suitable for the required load and shall be capable of satisfactory operation under the specified input and output conditions.
4. The contractor shall provide all necessary cables, connectors, lugs, glands, supports, hardware, accessories and other incidental items required for complete installation, wherever included in the BOQ/specification.
5. The UPS shall be installed strictly in accordance with the manufacturer's installation instructions and approved drawings.
6. The contractor shall ensure proper operation of all UPS modes, alarms, protections, bypass arrangement, battery charging system and associated controls, as applicable to the specified UPS.
7. Battery bank, battery rack/cabinet, interconnecting cables and associated accessories shall be supplied and installed as per the approved specifications, wherever included in the scope.
8. All electrical connections shall be properly terminated, tightened, labelled and tested before commissioning.
9. The contractor shall provide earthing connections for the UPS system as per approved design/specification and applicable requirements.

10. The contractor shall provide necessary operation & maintenance manuals, manufacturer's literature, test certificates, warranty certificates and as-built drawings after completion of the work.
11. The contractor shall provide training to the Department's designated personnel regarding operation, basic troubleshooting and routine maintenance of the UPS system.
12. The complete UPS installation shall be covered by the warranty/guarantee period specified in the tender. Any defect due to defective material, manufacturing defect or workmanship during the warranty period shall be rectified/replaced by the contractor without additional cost to the Department.
13. The contractor shall be responsible for satisfactory installation, testing and commissioning of the complete UPS system, including all incidental works necessary for its proper functioning.
14. After successful commissioning, the contractor shall hand over the complete UPS system to the Department along with all relevant documents and certificates.

Solar Photovoltaic Power Plant

1. Solar Power Plant shall be installed strictly as per CPWD & MNRE guidelines/specifications with up to date correction /amendments, Indian Electricity Rules and as per directions of Engineer-in-charge. In case of variation, nothing extra shall be paid on account of these additional specifications & conditions as the same are to be read along with schedule of quantities for the work.
2. The SPV Plant shall be guarantee for One year including which the agency will ensure upkeep of the system for initial one year after commissioning/ handing over.

Annexure 'A'

(To be executed On Judicial Stamp paper worth Rs.100/- between Contractor, Manufacturer & Engineer-in-charge of the work)

GUARANTEE BOND

This agreement made this ____ day of ____ between M/s. ____ & M/s. ____ (hereinafter called the Guarantors which expression shall include where the context so admits the representative successors or his/its assignees of the one part) and the Engineer-in-charge on behalf of Chandigarh Housing Board, Chandigarh constituted under Section -III of the Haryana Housing Board Act, 1971 as extended to the Union Territory, Chandigarh having its principal office at 8 Jan Marg, Sector 9-D, Chandigarh (hereinafter called the Board which expression shall unless repugnant to the context or meaning thereof including its successor and assignees of the other part).

Whereas this agreement is supplementary to the contract (hereinafter called the Sub Contract) dated----- made between the Guarantors of the one part and Board of the other part, whereby the contractor & manufacturer, inter alia, undertook to render the buildings and structures and supply of ____ (Name of item) (As per the list/items of products/ material appended) conforming to the prescribed specifications. Wherein, the material in question have been used in between Block No. ____ Unit No. ____ at ____ (Location) during the period between ____ to ____ at the site of work.

And whereas the Guarantors agreed to give a guarantee to the effect that the said material will remain defect free for the next five years to be reckoned from the date of completion of the work under the contract Agreement No. ____ dated ____.

During this period of guarantee, the Guarantors shall make good all manufacturing defects and for that matter, shall replace at his risk and cost such defective material(s) as observed to the satisfaction of the Engineer-in-charge, and shall commence the works of such rectification within seven days from date of issuing 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/ manufacturer at the Guarantor's cost and risk, and in the later case the decision of the Engineer-in-charge as to the cost recoverable from the Guarantors shall be final and binding.

That if the Guarantors fails to replace the defective material(s) or commits breaches hereunder then the Guarantors will indemnify principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the Guarantor in performance and observance of this supplemental agreement. As to the amount of loss and/or damage and/or cost incurred by the Board, the

EE-III

EE-V(Elect)

EE-VII(PH)

decision of the Engineer-in-charge will be final and binding on the parties. In case of failure to replace the defective material, in addition to the recovery, stated here, the Guarantors and the Contractor shall be black listed.

In witness whereof these presents have been executed by the Obligor _____ and by _____ for and on behalf of the Chairman, CHB on the day, _____ month and year first above written.

Signed, sealed and delivered by OBLIGOR in the presence of

1.

2. (Contractor)

2. (Manufacturer)

Signed for and on behalf of The Chairman, CHB by EE _____ in the presence of.

1.

2.

Note:- This Guarantee Bond shall be signed by the manufacturers individually, if the manufacturer of _____ are different agencies.

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EE-VII(PH)

**LIST OF MAKES OF VARIOUS ITEMS (WHEREVER PRESCRIBED) FOR USE
UNDER THIS CONTRACT
(CIVIL COMPONENT)**

Sr. No.	Item	BRANDS
1	Cement	ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & JK CEMENT
2	Reinforcement Steel (TMT Steel)	SAIL, TATA STEEL LTD. RINL, JINDAL STEEL & POWER LTD- PANTHER AND JSW STEEL LTD.
3	Structural Steel/M.S Tube	SAIL, RASHTRIYA ISPAT NIGAM, TATA, JINDAL STEEL & POWER LTD, JSW STEEL LTD
4	Plasticizer, super plasticizer, admixtures, other construction chemicals	M.C, BAUCHEMIE, FOSROC, SIKKA, CICO, PIDILITE, BASF
5	Hardware/ Fittings (SS)	DORMA, HETTICH, GODREJ, EVERITE, DORSET
6	Hardware/ Fittings (Aluminium) ISI Marked	CLASSIC, NULITE AND CROWN.
7	Premium arcylic emulsion paints	DULUX- WEATHER SHIELD, NEROLAC EXCEL, ASIAN APEX PAINTS, BERGER-WEATHER COAT
8	Wall Putty	BIRLA WALL CARE, JK WHITE, SAINT GOBAIN, FERROUS CRETE
9	Acrylic Distemper	BERGER- BISON, ASIAN-TRACTOR, DULUX- PROMISE, NEROLAC-BEAUTY
10	Steel/ Wood Primer	AKZONOBEL (DULUX) NEROLAC, ASIAN PAINTS, BERGER, JENSON & NICHOLSON
11	Synthetic Enamel paint	AKZONOBEL (DULUX), ASIAN (APCOLITE), KANSAI NEROLAC (SYNTHETIC ENAMEL),

		BERGER-LUXOL.
12	Expansion/ Rebar/ Anchor Fastener	HILTI, FISCHER, DASH, ANCHOR, BOSCH, FISHER
13	Aluminum Sections	INDIAN ALUMINIUM CO., HINDUSTAN ALUMINIUM JINDAL, BHARUKA
14	Tile Joint Filler	ROFF RAINBOW TILE MATE' OF ROFF CONSTRUCTION CHEMICALS PVT. LTD., WINSIL 20, SILICON SEALANT OF GE BAYER SILICON, MATRIX GROUP.
15	Silicon Sealants	G.E. BAYER DOW CORNING, WACKER
16	Mortice Locks	DORMA, HETTICH, GODREJ, EVERITE, DORSET
17	Flush Door Shutters / Factory made paneled door shutters	Archid / Century / Green / Merino / Duro
18	Plywood / Veneer / Laminate	Archid / Merino / Greenlam / Century / Duro
19	False Ceiling - Gypsum	Saint Gobain / Boral / Lafarge / India Gypsum
20	False Ceiling - Metal	Saint Gobain / Armstrong / Hunter Douglas
21	Gyp Board	Saint Gobain / Lafarge / Boral
22	Ceramic tile (Glazed)	Kajaria / Somany / NITCO
23	Stainless steel hollow section	Tata / Jindal
24	Water Proofing Compound (Crystalline)	Accoproof / Xypex / BASF / SIKKA / Penetron / Keshun
25	UPVC Window shutters with frames	Rehau / Fenesta / NCL Veka
26	Hardware accessories of UPVC windows	ASSABLOY, ROTO, SINGANIA

27	Float Glass	Saint Gobain / Modiguard / Asahi India / Goldplus
28	UPVC Pipe (ISI marked)	Astral / Ashirwad / Ajay / Supreme / Jain Irrigation
29	Vitrified Tile (Antiskid / Matt / Glazed)	NITCO / RAK / Kajaria
30	Toughened Glass / Hermetically sealed glazing	Saint Gobain/ Modiguard/PILKINGTON
31	Fire rated glass	Saint Gobain / SCHOTT/ PILKINGTON
32	Heat Resistant Tile	Thermatek / Somany / Kajaria / Parmeshwari Enterprises
33	Toilet Cubicles	Greenlam / Century / Merino
34	Fire check door	Navair / Shakti Hormann / Omfurn India / TUFWUD / Redmond Doors

(PH WORK)

Sr. No.	Description of Item	Makes
1.	Looking Mirror Bevelled-edge mirror (looking glass), 5.5mm thick; 1mx1m	Modiguard/ Saint Gobain/ Atul
2.	Toilet Paper Holder with flap recessed type	Jal / Jaquar / Hindware
3.	Grab Bar for Handicapped	Viking / Jaquar / Hindware
4.	Curved-shaped urinal partition of Glass 8 mm	Jal / Jaquar / Hindware
5.	Brass Stop Cock 32 mm/ 40 mm	KPR/ PRIMA or Any other reputed make ISI Marked
6.	CP Brass Pillar Tap with Auto Closing system	Jal / Jaquar / Parryware
7.	Cockroach Trap made of heavy quality Salem Stainless Steel, 5".	Jal / Jaquar / Hindware
8.	CP Towel Ring (round type)	Jal / Jaquar / Hindware

9.	GI Pipes	TATA / Jindal Hisar
10.	Centrifugally Cast Iron and Fittings	Any reputed ISI Marked Make
11.	CPVC Pipe	Astral / Ashirwad / SUPREME
12.	Soap Dispenser 0.8 Ltr capacity	Jal / Jaquar / Hindware
13.	Electric Hand Dryer 230 V, Single Phase 50 Hz	Jal / Jaquar / Viking
14.	Single Piece white vitreous china water closet (European Type- EWC)	Jal (Solo) / Jaquar(Solo) / Hindware (Edge)
15.	White vitreous china flat-back half-stall urinal of size 385x325x635 mm	Jal / Jaquar / Hindware
16.	Urinals flush sensor-operated flushing valve complete	Jal / Jaquar / Hindware
17.	White Vitreous China Table Top Wash basin of Size 625x410x120 mm	Jal (ATRAI)/ Jaquar (LAGUNA)/ Hindware (FONTE)

ELECTRICAL WORK

S. No	Item/ Description	Make
1	VRV	Hitachi, Diakin, O-general Mitsubishi
2	FRLS PVC Insulated Copper Conductor Single Core Cable / Three Core Cable	Finolex, Polycab, RR Kabel , KEI
3	MCCB /MCB/RCCB/MCB DB	L& T, Legrand , Siemens , Schneider, Hager
4	MS Conduits (ISI Marked)	AKG, BEC
5	CCTV Camera, NVR	Honeywell, CP Plus, Sony
6	Modular Switches	Legrand, Gold Medal, Schneider, Hager, Wipro

7	Lighting	Phillips, Panasonic, Trilex
8	Fire Pump	Kirloskar, Grundfos, Matter &Platter
9	Fire Extinguisher, Hydrant Valves	Newage, Life Guard, Exflame, Superx
10	Diesel Engine	Cummins, Caterpillar, MTU
11	Alternator	Stamford, Leroy Somer, Merathon
12	UPS	Emmerson, APC
13	Valves	ZOLOTO, SKS, L&T
14	Grills/Diffusers/VCD	Conair, Dynamic, Mapro
15	Sprinklers	Tyco, HD, G-tech



GENERAL ABSTRACT OF COST

DESCRIPTION	Total
Civil Component	1,49,16,159.00
PH Component	19,10,378.00
Electrical Component(E.I. work)	57,20,510.00
Total Project Cost	2,25,47,047.00

Executive Engineer-III
Chandigarh Housing Board
Chandigarh

Executive Engineer-V(Elect)
Chandigarh Housing Board
Chandigarh

Executive Engineer-VII(PH)
Chandigarh Housing Board
Chandigarh

FINANCIAL BID FOR THE WORK CONSTRUCTION OF EXHIBITION / MULTIPURPOSE HALL AT KALAGRAM, MANIMAJRA, CHANDIGARH (COMPOSITE WORK)

Part	Description	Amount
I	CONSTRUCTION OF EXHIBITION / MULTIPURPOSE HALL AT KALAGRAM, MANIMAJRA, CHANDIGARH (COMPOSITE WORK).	Rs.2,25,47,047.00
I/we will charge % (in figures) i.e (a)* percent (in words) (b)* (write above or below) on the total Composite cost of Rs.2,25,47,047/- (Rs. Two crore twenty-five lakh forty-seven thousand forty seven only) The overall amount of the Tender comes out to be Rs. (in figures) (Rs. (c)* (in words) with my quoted Rates.		
* Note:		
1.	For filling up the portion marked (a)* above the agency is to quote the percentage in figure and words. Percentage is to be quoted up to three digits after decimal.	
2.	For filling up the portion marked (b)* above, the agency is to quote either above or below	
3.	For filling up the portion marked (c)* above the agency is to quote the amount in figures and words.	
4.	In case of any ambiguity or difference between the quoted percentage and amount, the amount worked out at '(c)' above will be considered as correct and the percentage will be considered accordingly.	
	Dated	Signature of the Bidder (s)

Executive Engineer-III
CHB, Chandigarh

Executive Engineer-V(Elect)
CHB, Chandigarh

Executive Engineer-VII (PH)
CHB, Chandigarh

Superintending Engineer-I
Chandigarh Housing Board
Chandigarh

This NIT containing 231 pages as per Index amounting Rs.2,25,47,047/- (Rs. Two crore twenty-five lakh forty-seven thousand forty seven only) is hereby approved.

Chief Engineer
Chandigarh Housing Board
Chandigarh