



**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION DEVELOPMENT

8, JAN MARG, SECTOR 9-D  
CHANDIGARH  
0172-25111121



# Bid Document For

**CONSTRUCTION OF 100 2BHK FLATS  
(BASEMENT & S+5), FOR GENERAL  
HOUSING SCHEME IN SECTOR 53  
CHANDIGARH (COMPOSITE WORK).**

Date of release /publishing  
of Tender.....



Last Date of  
Submission of document : \_\_\_\_\_, 2023.

Tel: 0172-25111121

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

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# PART-I

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*OK*

**CHANDIGARH HOUSING BOARD**

**TENDER NOTICE**

**Notice Inviting e-Tenders**

Chandigarh Housing Board intends to invite tenders for construction of 372 flats of various categories at Sector-53, Chandigarh as detailed below: -

Sr. No.	Name of Work
1	Construction of 80 Two Room Flat (EWS) (S+4) for General Housing Scheme (Composite work) in Sector-53, Chandigarh.
2	Construction of 96 Nos. 3BHK (Twin Basement & G+5), Group-I, for General Housing Scheme in Sector-53, Chandigarh. (Composite work).
3	Construction of 96 Nos. 3BHK (Twin Basement & G+5), Group-II, for General Housing Scheme in Sector-53, Chandigarh. (Composite work).
4	Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work).

Out of the above, Executive Engineer-IV on behalf of the Chairman, Chandigarh Housing Board, Chandigarh invites online Percentage rate bids in Two Bid System through e-Procurement process from Agencies/ Firms/ Contractors for the Composite work of **Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)..**

**Estimated Cost:- Rs. 5052.52 lakh, Earnest Money:- Rs.61,00,000/- , Period of Completion:- 24 Months, Downloading of e-tender document start date is \_\_\_/\_\_\_/2023, Time and Date of Pre-bid meeting at 11:00 AM on \_\_\_/\_\_\_/2023. Last date of submission of bid online is \_\_\_/\_\_\_/2023, Last date of physical submission of bid & date of opening bid is \_\_\_/\_\_\_/2023.**

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



### Detail Regarding Tendering Process

Name of work	<b>Construction of 100 2BHK flats (Basement &amp; S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)</b>	
Estimated composite cost (Rs. In Lakh)	1. Civil Component	Rs. 4018.84 Lakh
	2 PH Component	Rs. 315.05 Lakh
	3 Elect. Component	Rs. 718.63 Lakh
	<b>Total Cost:</b>	<b>Rs. 5052.52 Lakh</b>
Period of completion	24 Months	
Name of the Employer	Chandigarh Housing Board	
Address of the Employer	8 Janmarg, Sector 9-D, Chandigarh (UT) PIN 160009	
Mode	E-Tendering	
Website	<a href="https://etenders.chd.nic.in/nicgep/app">https://etenders.chd.nic.in/nicgep/app</a>	
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.	
<b>Milestone Dates</b>		
Downloading of e-tender document	Start date:	
	End date:	
Clarification regarding plans specifications schedule of quantities & set of terms	Start date:	
	End date:	
Pre-bid meeting to be held on		
Date of submission of e-tender	Start date:	
	End date:	
Opening of technical bid (Online)		
Opening of price bid (Online)		
Bid validity period	<b>75 Days</b>	
Earnest Money Deposit	Earnest money Deposit of Rs.61,00,000/- may be deposited by bank-to-bank transfer using SBI MOPS or RTGS/NEFT transfer through <a href="https://etenders.chd.nic.in">https://etenders.chd.nic.in</a>	

	<p>portal.</p> <p>Bidder can submit their bid only after depositing Earnest money Deposit online.</p> <p>The amount of Earnest money Deposit is refundable and adjustable.</p> <p>The Earnest money Deposit shall be refunded online to the bidder account in case of all unsuccessful e-bids, provided it is not forfeited.</p> <p>The bidder must upload the copy of UTR No/ Transaction slip on the web site.</p>
<p>Proformance Security</p>	<p>The contractor, whose bid is accepted, will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule E and within the period specified in Schedule F. This guarantee shall be in 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.</p>



**LIST OF DOCUMENTS TO BE UPLOADED BY THE BIDDERS**

1.	Fee
	i) EMD
2.	Post Qualification /Technical
	i. Check List
	ii. Letter of Transmittal as per attached proforma in Section-II.
	iii. Form 'A' Financial information & Audited Balance Sheet. Balance sheets for the last five years duly certified by the CA
	iv. Form 'B' Banker Certificate or Form 'B-1' Networth Certificate
	v. Form 'C' Similar works during the last seven years
	vi. Form 'C1' Project under execution or awarded.
	vii. Form 'C3' Calculation of bidding capacity details of existing commitments and ongoing works.
	viii. Form 'D' Performance Report of works given in Form 'C'.
	ix. Form 'D1' Performance for ongoing works
	x. Form 'E' Structure & Organisation Copy of valid Registration Certificate issued by any one of the specified departments
	xi. Form 'F' Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects.
	xii. Complete MOA duly attested by Notary
	xiii. Certified copy of the power of attorney by the applicant as per <b>Annexure-III</b>
	xiv. Written commitment letter on the letter head duly signed by the authorized signatory
	xv. Affidavit as per <b>Annexure-I</b> regarding no criminal proceedings and confirmation that eligible similar works have not been got executed on back to back basis
	xvi. Certificate of Registration under GST and acknowledgement of up to date filed return
	xvii. Copy of PAN
	xviii. Certificate of registration with EPFO, ESIC.
	xix. Declaration of the integrity Agreement <b>Annexure-IV</b> .
	xx. Any other document as specified in the bid document.
3.	Finance
	Financial Bid

**NOTE: -** Hard copies of the documents except Financial Bid listed at Sr. No.3 above shall be submitted by the lowest bidder to the Executive Engineer-IV.



**CHECK LIST TO ACCOMPANY THE 'ELIGIBILITY DOCUMENTS'**

S. No.	Description	Remarks
1.	Whether the Earnest Money as per the Press Notice has been uploaded?	Yes / No
2.	Whether definite proof from appropriate authority of having completed satisfactorily Similar work 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
3.	Whether definite proof of having an <b>Average Annual Financial Turn Over</b> on construction works during the last three years ending 31 <sup>st</sup> March, 2023 has been uploaded?	Yes / No
4.	Whether the Letter of Transmittal as per attached proforma in Section-II has been uploaded?	Yes / No
5.	Whether the Form 'A' of Financial Information along with the details of profit/loss incurred during the last five years has been uploaded?	Yes / No
6.	Whether the banker Certificate as per Form-B or Net worth certificate as per Annexure-B1 has been uploaded?	Yes / No
7.	Whether the Form 'C' - Details of similar works completed during last 7 years has been uploaded?	Yes / No
8.	Whether the Form 'C1' - Project under execution has been uploaded?	Yes / No
9.	Whether the Form 'D' - Performance Report of works referred to in Form-C has been uploaded?	Yes / No
10.	Whether the Form 'E' - Structure & Organization has been uploaded?	Yes / No
11.	Whether the Form 'F' Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects has been uploaded?	Yes / No
12.	Whether the Affidavit as per Annexure-I have been uploaded?	Yes / No
13.	Whether the Power of Attorney as per Annexure-III has been submitted?	Yes / No
14.	Whether any additional condition in tender has been quoted?	Yes / No
15.	Whether the Scanned copies of self attested documents related to E.M.D., cost of Document & other eligibility document has been uploaded along with the Bid?	Yes / No
16.	Whether all the statements, documents, certificates,	Yes / No



	uploaded owning responsibility for their correctness/ authenticity have been signed?	
17.	Whether the certificate of registration under GST or undertaking as per NIT has been Uploaded?	Yes/ No
18.	Whether the Copy of PAN has been Uploaded?	Yes / No
19.	Whether the Certificate of registration with EPFO, 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

*Handwritten mark*



**CHANDIGARH HOUSING BOARD  
NOTICE INVITING TENDER**

(To be uploaded on website as Press Notice also)

Chandigarh Housing Board intends to invite tenders for construction of 372 flats of various categories at Sector-53, Chandigarh as detailed below: -

Sr. No.	Name of Work
1	Construction of 80 Two Room Flat (EWS) (S+4) for General Housing Scheme (Composite work) in Sector-53, Chandigarh.
2	Construction of 96 Nos. 3BHK (Twin Basement & G+5), Group-I, for General Housing Scheme in Sector-53, Chandigarh (Composite work).
3	Construction of 96 Nos. 3BHK (Twin Basement & G+5), Group-II, for General Housing Scheme in Sector-53, Chandigarh (Composite work).
4	Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work).

1. Out of the above, Executive Engineer-IV on behalf of the Chairman, Chandigarh Housing Board, Chandigarh invites online Percentage rate bids in Two Bid System through e-Procurement process from Agencies/ Firms/ Contractors for the following composite work.

- 1.1 The work is estimated to Cost Rs.50,52,51,867/- (Rs Fifty Crore Fifty-Two Lakh Fifty-One Thousand Eight Hundred Sixty-Seven only) This estimated cost mentioned hereunder is merely indicative and is for the general guidance /knowledge of the applicants only. The break up of said estimated cost of composite work is as under: -



Name of work and location.	Estimated cost put to Bid (in Lakh)	Earnest Money (Rs.)	Period of completion	Last date & time of submission of Bid, copy of receipt of deposition of original EMD & other documents as specified in the	Time & date of opening of Technical Bid.
Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)	Rs.5052.52 Lakh	Rs.61,00,000/-	24 Months	Refer Detail regarding tendering process of Bid Document on website*.	Refer Detail regarding tendering process of Bid Document on website*.
Building Work (Civil, PH, Elect.) i) Civil	Rs.4018.84 Lakh				
ii) PH	Rs.315.05 Lakh				
iii) Elect(Including specialized works such as Lifts, Fire fighting, Fire Alarm, CCTV, SPV & DG Ste etc.)	Rs.718.63 Lakh				
<b>Total</b>	<b>Rs.5052.52 Lakh</b>				

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

#### Initial criteria for Eligibility for Post-Qualification

- 1.2 Applicants who fulfill the following requirements shall only be eligible to apply.
- Should have satisfactorily completed during the last seven years ending last day of the month previous to the one in which tender are invited
  - Three similar works each costing not less than **Rs.2021Lakh** or two similar works each of costing not less than **Rs.3031.52 Lakh** or one similar work of costing not less than **Rs.4042 Lakh**

**'Similar work shall mean 'Composite work of five <sup>storey</sup> storey building and above with minimum one level basement 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 the last date of submission of tender.

- Should have had average Annual Financial Turnover on construction works to be at least **Rs. 1515.76 Lakh** of the estimated cost put to tender during the immediate last three consecutive financial years. The



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

- c) Should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheet (balance sheet in case of private/ public limited company means its standalone financial statement and consolidated financial statement both), duly audited and certified by the Chartered Accountant.

- d) Banker's Certificate from a Commercial Bank or Net worth Certificate:  
Banker's Certificate of the amount equal to **Rs.2021 Lakh** of the Estimated Cost put to tender (ECPT).

or

Networth certificate of minimum **Rs.505.25 Lakh** of the estimated cost put to tender issued by certified Chartered Accountant with UDIN.

- e) Bidding Capacity (applicable for CPWD enlisted contractors also):  
Should have bidding capacity equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

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

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

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

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

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

Scoring method of evaluation - The scoring for evaluation mentioned in these columns shall be done as given in Proforma-I. This shall be made part of the tender documents.



In the event of any agency becoming L-1 for one or more work(s) in respect of works listed in the tender notice (in the serial order of the list of works given in the tender notice), its bidding capacity shall be worked out considering the tendered value of those works as the existing commitments. For example if the agency has tendered as under:

Sr No.	Work	Original quoted bid (in Rs.)	Bidding Capacity	Remarks
1	Construction of 80 EWS flats	W		The agency is L-1 bidder for this work
2	Construction of 96 Three BHK flats-(Gr-I)	X	R (as per formula given in the document)-W	The agency is L-1 bidder for this work also
3	Construction of 96 Three BHK flats-(Gr-II)	Y	R (as per formula given in the document)-W-X	The agency is L-1 bidder for this work also
4	Construction of 100 Two BHK flats	Z	R (as per formula given in the document)-W-X-Y	

- f) The bidder should be financially sound and should not have applied or undergoing Corporate Debt Restructuring (CDR) and/or undergoing insolvency resolution proceedings as per the Insolvency and Bankruptcy code, 2016 on the last date of submission of bid.
- g) The Bidder's **performance for each work** completed in the last Seven years and in hand should be certified by an officer not below the rank of Executive Engineer or equivalent. If private work shown in support of eligibility criteria, certified copy of tax deducted at source (TDS) certificate (Form-16A and 26A) shall be submitted along with the experience certificate and TDS amount shall tally with the actual amount of work done. Otherwise, the amount that tally with TDS



shall only be considered for eligibility.

- h) Firm / 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.
- i) GST registration Certificate of UT, Chandigarh is to be obtained by the bidder.

If the bidder has not obtained GST registration in the UT, Chandigarh, or as required by GST authorities then in such a case the bidder shall scan and upload following undertaking along with other bid documents.

"If work is awarded to me, I/we shall obtain GST registration Certificate of UT, Chandigarh 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 a/c of the work executed and/or for any action taken by CHB or GST department in this regard.

- 1.2.1 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 agencies.

- 2. 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 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.	Passanger Lift	Rs 9426275/-	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. 37.71 Lakh of the estimated cost put to tender (minor component of work) Or Two similar works each **costing not less than Rs. 56.56 Lakh of the estimated cost put to tender (minor



- |    |                            |              |   |
|----|----------------------------|--------------|---|
|    |                            |              | component of work)<br>Or<br>One similar work **costing not less than Rs.75.42 Lakh of the estimated cost put to tender (minor component of work)  |
| 2. | SPV System                 | Rs.1331180/- | Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids:<br>Three similar works each **costing not less than Rs. 5.33 Lakh of the estimated cost put to tender (minor component of work)<br>Or<br>Two similar works each **costing not less than Rs. 7.99 Lakh of the estimated cost put to tender (minor component of work)<br>Or<br>One similar work **costing not less than Rs.10.65 Lakh of the estimated cost put to tender (minor component of work)   |
| 3. | Fire Fighting & Fire Alarm | Rs.6117370/- | Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids:<br>Three similar works each **costing not less than Rs. 24.47 Lakh of the estimated cost put to tender (minor component of work)<br>Or<br>Two similar works each **costing not less than Rs. 36.71 Lakh of the estimated cost put to tender (minor component of work)<br>Or<br>One similar work **costing not less than Rs.48.94 Lakh of the estimated cost put to tender (minor component of work) |
| 4. | CCTV                       | Rs.1300379/- | Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids:   |



- |    |   |                 |  |
|----|---|-----------------|--|
| 5. | Pressurized Mechanical Ventilation System | Rs.6490863/-    | <p>Three similar works each **costing not less than Rs. 5.21 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p> <p>Two similar works each **costing not less than Rs. 7.81 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p> <p>One similar work **costing not less than Rs.10.41 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids:</p> <p>Three similar works each **costing not less than Rs. 25.97 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p> <p>Two similar works each **costing not less than Rs38.95 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p> <p>One similar work **costing not less than Rs.51.93 Lakh of the estimated cost put to tender (minor component of work)</p> |
| 6. | DG Set                                    | Rs. 71,94,791/- | <p>Should have successfully completed the works as mentioned below during the last seven years ending previous day of last date of submission of bids:</p> <p>Three similar works each **costing not less than Rs. 28.78 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p> <p>Two similar works each **costing not less than Rs 43.17 Lakh of the estimated cost put to tender (minor component of work)</p> <p>Or</p>  |



One similar work \*\*costing not less than Rs.57.56 Lakh of the estimated cost put to tender (minor component of work)

- 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 work 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. Agreement shall be drawn with the successful Tenderer on the prescribed Format of CPWD Form 7 as contained in the bid document. 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 contained therein with regard to CPWD Department and other designated authorities may be read as under:-

**As per General Conditions of Contract for Central P.W.D To be read as**

EE-IV

EE-V(Elect.)

EE-VII(PH)

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**Works**

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

4. The time allowed for carrying out the work will be **24 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. i) The site for the work is available.
- ii) The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.
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-IV between 11.00 AM. & 3.00 PM from \_\_\_\_\_ 2023 to \_\_\_\_\_ 2023 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 copy of all the scanned and uploaded documents as specified in e-tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD, is deposited with Executive Engineer-IV.
8. After submission of the bid the contractor can re-submit revised bid any number of times but before stipulated time and date of submission of bid as notified.
9. Notice Inviting Tender excluding 'General Condition of Contract for Central PWD Works' 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.

10 Earnest money amount will have to be deposited as mentioned in Detail Regarding Tendering Process in shape as prescribed.

11 The bid submitted shall become invalid if:

- i) The bidder is found ineligible.
- ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
- iii) Any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.
- iv) 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.

12 Pre-Bid Conference shall be held on the date mentioned in Detail Regarding Tendering Process in the CHB Board Room in Block-'B', CHB Office Building Complex at 8 Jan Marg, Sector 9, Chandigarh.

13 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.

14 The bidder, whose tender has been accepted, will be required to furnish '**Performance Guarantee**' as mentioned in Detail Regarding Tendering Process.

15 The description of the work is as follows:

**Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work).**

Copies of other drawings and 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.

- 16 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 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.**
- 17 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.
- 18 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.
- 19 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.
- 20 No Engineer of Gazetted rank or other Gazetted officer employed in the Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Chairman, CHB in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Chairman, CHB as aforesaid before submission of the tender or engagement in the contractor's service.
- 21 The tenders for the work shall remain open for acceptance for a period of Ninety (90) days from the last day of receipt of Technical Bid.
  - i) If any bidder withdraws his bid or makes any modifications in the terms & conditions of the tender which is not acceptable to CHB 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 bidder withdraws his bid or makes any modifications in the terms & conditions of the tender which is not acceptable to CHB 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 at prescribed in Para-i & ii above, the bidder shall not be allowed to participate in the rebidding process of the same work.

22 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:

- a) 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.
- b) General condition of contract for Central PWD works 2020, tender form of CPWD 7 as amended from time to time.

**23 For Composite Tenders:**

23.1 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.

23.2 The tender document includes following three components:

**Part A:** - CPWD form-6, CPWD form-7 including schedule A to F for major & minor component of the work, standard General Conditions of Contract for CPWD 2020 or latest addition as applicable with all amendments/modifications up to last date of submission of Bid.

**Part B:** - General/ specific conditions, specifications and schedule of quantities applicable to major component of the work.

**Part C:-** Schedule A to F for minor component of the work, (SE/EE 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.

- 23.3 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.).
- 23.4 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.
- 23.5 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 Manuals etc.
- 23.6 Entire work under the scope of composite tender including major and all minor components shall be executed under one agreement.
- 23.7 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.
- 23.8 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.
- 23.9 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.
- 23.10 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.
- 24 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 \*0172-2511121(EE-IV), 125(EE-Elect), 126(EE-PH), 204 (Supdt-IV), 206(Supdt-PH), 205 (Supdt-Elect), 216 (HDM-IV), 219 (HDM-PH) 217 (HDM-Elect) 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.
- 25 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.
- 26 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.
- 27 The tenderer is liable to be blacklisted as per policy of Chandigarh Administration 2009 and 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.
- 28 Any contractor offering lower rates after the opening of tenders shall be liable to be black-listed.
- 29 All disputes concerning in any way with this work are subject to Chandigarh jurisdiction only.
- 30 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.



- 31 Any addendum/ amendments issued by the Tender Inviting Officer shall be part of the Tender Document.
- 32 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.
- 33 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.
- 34 If the technical bid of a Bidder is not satisfying any of the eligibility criteria it will be rejected by the Executive Engineer.
- 35 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.
- 36 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 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.
- 37 The Executive Engineer will evaluate and compare the price bids of all the qualified Tenderer.
- 38 The Bidder is advised to attach any additional information, which he thinks to be necessary in regard to his capabilities. No further information will be entertained after submission of application unless it is called for by the Board. The Board reserves the right to call for additional information & clarification of information submitted by the Tenderer.
- 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 out come 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.

Executive Engineer-IV,  
Chandigarh Housing Board  
Chandigarh.





# PART-II





**PART-II**

**DOCUMENT RELATED  
TO  
ELIGIBILITY CRITERIA  
AND  
OTHER RELATED DOCUMENTS**

●—————●





**SECTION – I & II**  
**BRIEF PARTICULARS OF THE WORK**  
**&**  
**INFORMATION & INSTRUCTIONS FOR BIDDERS**



**SECTION - I**

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

Sl. No.	Name of work	Estimated cost	Period of completion
1.	Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)	Rs.5052.52 lakh	24 Months

2. The work is situated at Sector 53, Chandigarh  
3. General features and major components of the work are as under:

<b>Building work</b>	
1	Civil work
2	P.H. work
<b>Electrical &amp; Mechanical work</b>	
3	Internal & External E. I. Work
4	Passanger Lift
5	SPV System
6	Fire Fighting & Fire Alarm
7	CCTV
8	Pressurized Mechanical Ventilation System
9.	D.G.Set

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



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## SECTION – II INFORMATION & INSTRUCTIONS FOR BIDDERS

### 1.0 GENERAL:

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

### 2.0 DEFINITIONS:

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"

### 3.0 METHOD OF APPLICATION:



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

#### 4.0 FINAL DECISION MAKING AUTHORITY.

The CHB reserves the right to accept or reject any Bid and to annul the post-qualification process and reject all Bids at any time, without assigning any reason or incurring any liability to the Bidders.

#### 5.0 PARTICULARS PROVISIONAL

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

#### 6.0 SITE VISIT

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

#### 7.0 EVALUATION CRITERIA

- 7.1 The Bidder should have satisfactorily completed similar works during the last Seven years ending last date of the month previous to the one in which tenders are invited. For this purpose cost of work shall mean gross value the completed work including cost of material supplied by the Government/Client but excluding those supplied free of cost. This should be certified by an officer not below the rank of Executive Engineer/Project Manager or equivalent.

i) Three similar works each costing not less than



Rs.2021.94Lakh

or completed two similar works each costing not less than Rs.3031.14Lakh.,

or completed one similar work costing not less than Rs.4041.88Lakh.

Similar work shall mean works of Composite work of five <sup>storey</sup> story building and above with minimum two level basements which should include Civil, Public Health and Electrical work with specialized component'.

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 date of submission of tenders.

- 7.2 The bidder should have had Average Annual Financial Turnover of Rs.1515.76 Lakh. on Civil/ Electrical construction work during the last three consecutive years as per the balance sheets duly audited by Chartered Accountant. Year in which no turnover is shown would also be considered for working out the average. The value of annual turnover figures shall be brought to current value by enhancing the actual turnover figure at simple rate of 7% per annum.
- 7.3 The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets, duly certified and audited by the Chartered Accountant. (The balance sheet in case of Pvt./ Public Ltd. company means its standalone financial statement and consolidated financial statement both)
- 7.4 The bidder should have a Banker's certificate from a Commercial Bank for Rs.2021 lakh certified by his Bankers. (Not required if applicant is a CPWD registered contractor of appropriate class) or the bidder should submit Networth Certificate of minimum 505.25 lakh of ECPT issued by the certified Chartered Accountant (on the format prescribed in form B-1).
- 7.5 The bidder should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The bidder shall have to submit a list of these employees stating clearly how these would be involved in this work within 15 days of award of work.
- 7.6 Bidding Capacity (applicable for CPWD enlisted contractors also): The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender. The bidding





capacity shall be worked out by the following formula:

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

Where,

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

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

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

Note: The bidder should submit bidding capacity as per Form 'C-3'.

7.7 Even though any Bidder may satisfy the above requirements, he would be liable to disqualification if he has :

- a) Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the eligibility criteria document.
- b) Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/ weaknesses etc.

## 8 Evaluation criteria

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

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

8.1.2 The bidders **qualifying the initial criteria** will be **evaluated for following criteria by scoring method** on the basis of details furnished by them :



- |   |                  |
|---|------------------|
| a) Financial strength (Form 'A' & 'B')  | Maximum 20 Marks |
| b) Experience in eligible similar nature of Work during last seven years (Form 'C') | Maximum 20 Marks |
| c) Performance on works (Form 'D') – Time over run                                  | Maximum 20 Marks |
| d) Performance on works (Form 'D1') – Quality                                       | Maximum 40 Marks |

**Total 100 Marks**

**The detail marking criteria are annexed as Annexure-II**

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

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

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

**9.0 FINANCIAL INFORMATION**

Bidder should furnish the Annual financial statement for the last five years in (Form "A"). Banker's Certificate in (Form "B") or Networth Certificate in (Form "B-1").

**10.0 EXPERIENCE IN WORKS HIGHLIGHTING EXPERIENCE IN SIMILAR WORKS**

10.1 Bidder should furnish the List of eligible similar nature of works successfully completed during the last seven years in (Form "C") and ongoing works as well (Form C-1).

**11.0 ORGANISATIONAL INFORMATION**

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

**12.0 LETTER OF TRANSMITTAL**

The Bidder should submit the letter of transmittal attached with document.

**13.0 OPENING OF PRICE BID**



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

#### 14.0 AWARD CRITERIA

14.1 The employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:

- a) amend the scope of work and value of contract.
- b) Reject any or all the applications without assigning any reason

14.2 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.





## SECTION - III

### INFORMATION REGARDING ELIGIBILITY



**LETTER OF TRANSMITTAL**

From:

To

Executive Engineer-IV,  
 Chandigarh Housing Board,  
 Chandigarh.

Sub:

**Submission of Bid for the work of Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 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 statement made and information supplied in the enclosed forms A to E 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 requisite certified Networth certificate/Banker Certificate and authorise the Executive Engineer C.H.B. to approach the Chartered Accountant /bank issuing the Networth certificate/Banker Certificate to confirm the correctness thereof. I/ We also authorise Executive Engineer C.H.B. to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:-

Sr. No.	Name of work/Project and location	Certificate from
1		
2		
3		
4		
5		



Certificate:-

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

Enclosures:

Seal of bidder

Date of submission

SIGNATURE(S) OF BIDDER(S)



FORM 'A'

**FINANCIAL INFORMATION**

- I. Financial Analysis - Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

	YEARS				
	2018-19	2019-20	2020-21	2021-22	2022-23
i) Gross Annual Turn Over on construction works.					
ii) Profit/ Loss (standalone financial statement and consolidated financial statement both).					
Financial arrangements for carrying out the proposed work.					

Signature of Chartered Accountant with Seal

SIGNATURE OF BIDDERS (S)

EE-IV

EE-V (Elect.)

EE-VII (PH)

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FORM 'B'

**BANKER'S CERTIFICATE FROM A COMMERCIAL BANK**

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

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

(Signature) For the Bank

**NOTE**

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



FORM "B-1"

**FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT**

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

Unique Document Identification Number (UDIN) .....

Signature of Chartered Accountant .....

Name of Chartered Accountant .....

Membership No. of ICAI

Date and Seal

EE-IV

EE-V(Elect.)

EE-VII(PH)

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*[Handwritten signature]*











Calculation of bidding capacity  
Details of existing commitments and ongoing works

S. No.	Name of work / project and location	Owner or sponsoring organisation	Cost of work in crores of rupees	Date of commencement per contract	Stipulated date of completion	Up to date %age progress of work	Remaining work in percentage (100- Column 7)	Existing commitments Column 4X Column 8 / 100	Name and address/ telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10	11

Total (B) =

Maximum turnover in last seven years = Rs .....

Updated value of turnover (A) = Rs .....

No. of years (N) = .....

Bidding Capacity =  $\{(A \times N \times 1.5) - B\}$  =

Certificate:

I certify that all the awarded and ongoing works have been included in the above list.

SIGNATURE OF BIDDER(S)

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**FORM-D**

1.	Name of work/Project & Location	Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)
2.	Agreement No.	
3.	Estimated Cost	
4.	Tendered Cost i. Allotted Amount ii. Actual completed cost	
5.	Date of Start	
6.	Date of completion	
(i)	Stipulated date of completion	
(ii)	Actual date of completion.	
7.	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.	
8.	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 as per details mentioned above.

Dated:

Executive Engineer or Equivalent

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**FORM-D1**

Assessment of quality for completed as well as ongoing works

Name of work:-

Date of inspection:-

Date of submission of report:-

<b>A: General observations and Operational Aspects</b>		
Sr. No.	Description	Yes/No
1.	Availability of approval from local bodies in case of construction of private building	
2.	Availability of approved structural drawings	
3.	Observation on seepage/ leakage in the building	
4.	Whether line and level maintained?	
5.	In case of basement, observation on seepage, if any.	
6.	Any structural defects/ distress observed. If yes give details.	
7.	Whether safety measures adopted at site as per CPWD safety code and or Government guidelines are adequate or not?	
8.	Whether the welfare facilities provided to labour as per clause 19h of GCC for CPWD Works/ and or Government guidelines are adequate or not?	
9.	Whether AHU getting automatically switched of and fire damps closed in case of fire signal?	
10.	Whether thimbles used for termination of wires in DB's, EBD's and Panels?	
<b>B: Quality of work</b>		<b>Marks assessed</b>
1.	Quality of plaster/ finishing	
2.	Quality of RCC/ CC work	
3.	Quality of flooring	
4.	Quality of wood work	
5.	Quality of steel work/ aluminium work	
6.	Quality of plumbing and sanitary installation	
7.	Quality of workmanship	

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8.	Quality of water proofing	
9.	If cladding done, observation of efficiency/ Quality of cladding/ brick work	
10.	Quality of internal electrification work	
11.	Quality of DB's, EBD's and Panels	
12.	Quality of E&M Equipments, Panels and feeder pillars	
13.	Quality of Fire Alarm System/ Fire Fighting System.	
14.	Quality of Air Conditioning work	
15.	Quality of Sub Station based on complete live diagram, capacitor panel, power factor, insulating mat, cleanliness, cable termination, earthing pits, earthing of transformer/ DG Sets	
16.	Any other aspect (to be elaborated)	

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

**Note:**

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

In case of eligible completed works being more than one the average marks assigned for eligible completed works shall be considered for marking purpose. Only one ongoing work to be assessed.



FORM "E"

**STRUCTURE & ORGANISATION**

1.	Name & Address of the bidder	
2.	Telephone No. /Telex No. /Fax No.	
3.	Legal status of the bidder (attach copies of original document defining the legal status).	
a)	An Individual	
b)	A proprietary firm	
c)	A firm in partnership	
d)	A limited company or Corporation	
4.	Particulars of registration with various Government Bodies (attach attested photo-copy).	
	<b>Organization/Place of registration</b>	<b>Registration No. &amp; Date</b>
1.		
2.		
3.		
5.	Names and Titles of Directors & Officers with designation to be concerned with this work.	
6.	Designation of individuals authorized to act for the organization.	
7.	Has the bidder or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.	
8.	In which field of Civil Engineering construction the applicant has specialization and interest?	
9.	PAN No.	
10.	GST No.	
11.	EPF registration No.	
12.	Any other information considered necessary but not included above.	

SIGNATURE OF THE BIDDER (S)

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FORM 'F'

Undertaking on structural stability and soundness of already completed buildings and infrastructure ~~Projects~~ **projects**

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

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

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

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).



**ANNEXURE-I**

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

(On Judicial Stamp paper duly attested by 1<sup>st</sup> 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 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 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 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 CHB shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee deposited.

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**

**CHANDIGARH HOUSING BOARD  
CHANDIGARH**

**CRITERIA FOR EVALUATION OF THE PERFORMANCE OF CONTRACTORS FOR POST-QUALIFICATION UNDER PARA 8.1.2 OF PART-II OF DOCUMENT.**

The marking criteria for various attributes given under Para 8.1 of the PQ document for ascertaining the marks scored by applicant qualifying the initial criteria as set out in Para 7.1 to 7.6 shall be as under: -

Total Marks =100

(a)	Financial strength ( Form 'A' & 'B/B1)	Maximum 20 marks
(b)	Experience in similar nature of work during last seven years(Form 'C')	Maximum 20 marks
(c)	Performance on works (Time over run)	Maximum 20 marks
(d-i)	Performance on works (Form 'D-1') -(Quality)	Maximum 40 marks
	<b>Total</b>	<b>100 Marks</b>

The detailed marking system to be followed for evaluation under above 5 attributes shall be as under: -

Attributes	Evaluation
(a) <b>Financial strength-20 Marks</b>	<b>Form A and B/B1</b>
(i) Average annual turn over - 16-Marks	(i) 60% marks for minimum eligibility criteria.
(ii) Banker's Certificate - 4 Marks	(ii) 100% marks for twice the minimum eligibility criteria or more. In between (i) & (ii) -on pro-rata basis.
(b) <b>Experience in similar class of works -20 Marks</b>	(i) 60% marks for minimum eligibility criteria. (ii) 100% marks for twice the minimum eligibility criteria or more. (iii) In between (i) & (ii) -on pro-rata basis.
<b>Performance on works (time over run) -20 Marks</b>	(c)

Parameter	Calculation for points	Score				Maximum Marks
Time over run (TOR)						
	If TOR=	1.00	2.00	3.00	>3.50	20
a) Without levy of compensation		20	15	10	10	
b) With levy of compensation		20	5	0	-5	
c) levy of compensation not decided		20	10	0	0	
TOR= AT/ST, where AT=Actual Time, ST=Stipulated Time in the Agreement plus (+) justified period of Extension of Time. <b>Note</b> - Marks for values in between the stages indicated above is to be determined by straight line variation basis.						
(d) <b>Performance on works (Quality)</b>	As per assessment in Form-D1	(40 Marks)				
	Completed work (maximum 25 marks)	On going works (Maximum 15 marks)	Total Markes-assessed			



**ANNEXURE-III**

**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)



**ANNEXURE-IV**

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

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

**Form of Bank Guarantee for Performance Guarantee/Security Deposit/Mobilization Advance**

1. Whereas the Executive Engineer-IV, on behalf of the Chairman, CHB (hereinafter called "The Government") has invited bids under \_\_\_\_\_ (NIT number) \_\_\_\_\_ dated for \_\_\_\_\_ (name of work).

**OR\*\***

Whereas the Executive Engineer-IV (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 **Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)**. The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. \_\_\_\_\_/- (Rupees \_\_\_\_\_ only) valid up to \_\_\_\_\_ (date)\* \_\_\_\_\_ as **Performance Guarantee/Security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

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

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

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



**ANNEXURE-V**

**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..... 20.....

**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 (Name of work)

\_\_\_\_\_  
hereinafter referred to as the "Contract".

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

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

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**

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- 1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Principal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during the Tender process, provide to 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 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, wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.
  5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use coercive practices (which shall include the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property) to influence their participation in the tendering process.

### Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal under law or the contract or its established policies and laid down procedures, the



Principal shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal absolute right:

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

#### Article 4: Previous Transgression

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



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

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

**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)

  
Anoop Bhatia  
EE, CHB

  
WDM-18

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





**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 work **Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)** on 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 of 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**





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### INSTRUCTIONS FOR CONTRACTORS

1. Tender to be witnessed at page No. 67 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 of CPWD Works-2020' 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 10 cc is applicable.
6. Criteria for engagement of specialized agencies including Electrical agencies have been laid at page No. 143 which may be noted.



**Part A CPWD FORM– 7 including Schedule  
A to F  
For  
Major Component of the Civil Work  
(Building work)**

Standard General Conditions of Contract  
for CPWD 2020 or latest addition as  
applicable with all amendments/  
modifications

**Available in  
market for  
sale & CPWD  
official  
website.**



C.H.B-C.P.W.D - 7

**CHANDIGARH HOUSING BOARD**

State	U.T. Chandigarh	Circle	-
Branch	Civil	Division	IV, CHB
Zone	Chandigarh	Sub division	.....

**Percentage Rate Tender & Contracts for Works**

A Tender for the work of **Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work)**.

To be opened in presence of tenderers who may be present at \_\_\_ Hours on \_\_\_/\_\_\_/20\_\_\_ in the office of Executive Engineer-IV, Chandigarh Housing Board, Chandigarh.

Downloaded by \_\_\_\_\_ (contractor)

**COMPOSITE 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 Ninety (90) days from the last day of receipt of Technical Bid and not to make any modifications in its terms and conditions.

A sum of **Rs.61,00,000/-** 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

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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.

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

Designation

Dated

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**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

**Major Component i.e. Civil Work (Building Work)**

Schedule of Quantities for Civil Work (Enclosed) which starts at page No. 77

**SCHEDULE "D"**

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

**SCHEDULE "E"**

Reference to General Conditions of contract of 2020 with amendments upto date.

i)	Name of Work	Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh (Composite Work).
ii)	Estimated cost of Work	Rs.4018.84 Lakh.
iii)	Earnest Money	As mentioned in Detail regarding Tendering Process.
iv)	Performance Guarantee	5% of the <del>composite</del> tendered value
v)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

**Reference to General Conditions of Contract** GCC 2020 with latest amendments issued up to the last date of submission of bid.

**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV, 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 & 12.5	100%
<b>Definitions</b>	
2(v) Engineer-in charge	Executive Engineer-IV, 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 profit	7.5% CP & 7.5 % OH.
2(xi) Standard Schedule of Rates.	Delhi Schedule of Rates (DSR) 2021 with correction slips issued up to the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.



9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of tender.
<b>Clause 1</b>	
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 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
<b>Clause 2</b>	
Authority for fixing compensation under clause-2	Superintending Engineer, CHB of Major Component
<b>Clause 5</b>	
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 Mile stone (Civil) Page No:124 to 126	15 days
Time allowed for execution of work	24 Months
<b>Authority to decide:</b>	
(i) Extension of time	Superintending Engineer in Charge of Major Component
(ii) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(iii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
<b>PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site</b>	
<b>Description</b>	<b>Time Period for handing over reckoned from date of issue of letter of intent.</b>
Complete Site	15 days
<b>Clause 7</b>	
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.	<b>Rs.100.00 Lakh</b> subject to one payment per month. (However bill of lesser amount may be paid as per discretion of EIC)



<b>Clause 7A</b>	
Whether Clause 7A shall be applicable.	Yes, Applicable
<b>Clause 8A</b>	
Authority to decide compensation on account, if Contractor fails to submit completion plans.	Executive Engineer in Charge of Major Component
<b>Clause 10 A</b>	

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:-

**Table -I For Building Work**

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 efflorescence test for bricks). (i) 300 mm x 250 mm x 40 mm- 2 nos.  
(ii) Circular plates of 250 mm dia - 4 nos.
10. *Cube moulds 150 mm x 150 mm x 150 mm = 18 NOS. MINIMUM*



Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		Yes
Clause 10 C		
Component of labour expressed as percent of value of work		Not applicable.
Clause 10 CC		
Clause 10 CC		Yes, applicable
<b>A. For construction period</b>		
<b>S. No.</b>	<b>Relevant component of material/ Labour for price escalation.</b>	<b>Percentage of total value of work</b>
1	Cement component	7.20%
2	Labour component	25%
3	Civil component of other construction material	45.19%
4	E&M (Electrical & Mechinal) component	Nil
5	POL (Diesel) component	Nil
6	Reinforcement Steel Bar/ TMT Bars/ Structural Steel (Including strands and cables) componet	22.61%
7	Bitumen component	Nil
	Total	100%
<b>Clause 11</b>		
Specification to be followed for execution of work.		CPWD Specifications with correction slips upto date.
<b>Clause 12</b>		
Authority to decide deviation upto 1.5 times of tendered amount.		<b>Tender Approving authority.</b>
The deviation limit for construction work		100% for all the items
<b>Clause 16</b>		
Competent authority for deciding reduced rates.		Superintending Engineer, CHB
<b>Clause 18</b>		
List of mandatory machinery, Tools & Plants to		Major Component i.e. Building



be deployed by the contractor at site	<p>Work</p> <ol style="list-style-type: none"> <li>1. Pumps</li> <li>2. Computerized Batch Mix Plant of minimum capacity of 6 Cum per hour.</li> <li>3. Chase Making Machines</li> <li>4. Compactor</li> <li>5. Tippers</li> <li>6. Mixer with Hopper / loader</li> <li>7. Power crane</li> <li>8. Grinding &amp; polishing machine</li> <li>9. Welding Generator</li> <li>10. Excavator</li> <li>11. Concrete Vibrator</li> <li>12. Steel shuttering &amp; Scaffolding</li> <li>13. Concrete pump</li> <li>14. Transit Mixer</li> </ol>
<b>Clause 19</b>	
Clause 19 C	Rs 1000/- penalty for each default.
Clause 19 D	Rs 1000/- penalty for each default.
Clause 19 G	Rs.1000/- penalty for each default.
Clause 19 K	Rs.1000/- penalty for each default.
<b>Clause 25</b>	
Settlement of Dispute by Conciliation and Arbitration :	CEO, CHB (Conciliator)
<b>Clause 32</b>	



Requirement of Technical Staff		Minimum experience (Years)	Designation of Technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling			
Qualification	Number (of Major + Minor Component)						
Graduate Engineer	1	20 (and having experience of one similar nature of work)	Project Manager	Rs.60,000/- per month			
Graduate Engineer	1	12 (and having experience of one similar nature of work)	Deputy Project Manager	Rs 40,000/- per month per person			
Graduate Engineer or Diploma Engineer	1+1	5 or 10 respectively	Project/site Engineer	Rs.25,000/- per month per person			
Graduate Engineer or Diploma Engineer	1+1	2 or 5 respectively	Project Planning/quality/billing Engineer	Rs 15,000/- per month per person			
<p><b>Note: Technical staff for minor component/specified work will be employed by the agency at the time of execution of minor component/specified work</b></p> <p>Assistant Engineer retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.</p> <p>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.</p>							
<p>Clause 34(i)</p> <table border="1"> <tr> <td>Extent of GST payable by Contractor for Building Construction works.</td> <td>and</td> <td>GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly</td> </tr> </table>					Extent of GST payable by Contractor for Building Construction works.	and	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly
Extent of GST payable by Contractor for Building Construction works.	and	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly					
<p><b>Clause 38</b></p> <p>i) a) Schedule/statement for determining theoretical quantities of cement on</p>							



the basis of Delhi Schedule of Rates 2021 printed by CPWD.	
ii)	Variation permissible on theoretical quantities
a)	Cement 2% plus/minus
b)	Bitumen for all works 2.5% plus only & nil on minus side.
c)	Steel reinforcement and structural steel sections for each diameter, section and category. 2% plus/minus
d)	All other Materials Nil



**ABSTRACT OF COST**

**Name of Work: - Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh. (Composite Work)**

**Major Component**

Sub Head	Description	Sub Head Total
<b>Building Work</b>		
A	Carriage of Materials	3075443
B	Earth Work	4373768
C	Concrete Work	20755561
D	Reinforced Cement Concrete Work	234613932
E	Masonry Work	8442626
F	Cladding Work	15717273
G	Wood and PVC Work	23684872
H	Steel Work	22915050
I	Flooring	25291441
J	Roofing	1439622
K	Finishing	23660009
L	Road Work	2622831
M	Aluminium Work	2612146
N	Water Proofing	12454910
O	Misslaneous items	224330
	<b>Total</b>	<b>401883814</b>

Executive Engineer-IV,  
Chandigarh Housing Board,  
Chandigarh.



**SCHEDULE OF QUANTITIES FOR CONSTRUCTION OF 100 2BHK FLATS (BASEMENT & S+5), FOR GENERAL HOUSING SCHEME IN SECTOR 53 CHANDIGARH. (COMPOSITE WORK)**

SOQ for Major Component i.e. Civil work

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
<b>Sub Head: A</b> <b>Item No. 1</b>	<b>Carriage of Materials</b>					
1	Carriage of material by Mechanical Transport including loading, unloading and stacking Earth (Lead up to 5KM.)	10762.33	Cum	285.76	3075443	3075443
	<b>Total Sub Head A</b>					
<b>Sub Head: B</b> <b>Item No. 2 to 8</b>	<b>Earth Work</b>					
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	12498.22	Cum	157.66	1970469	

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Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
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, lift upto 1.5m, including getting out the excavated soil & disposal of surplus excavated soil as directed, within a lead of 50m. All kinds of soil.	954.69	Cum	231.26	220782	
4	Close timbering over areas including strutting, shoring and packing cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered):					
a.	Depth not exceeding 1.5 m	624.90	Sqm	126.03	78756	
b.	Depth exceeding 1.5 m but not exceeding 3 m	624.90	Sqm	141.97	88717	
C.	Depth exceeding 3 m but not exceeding 4.5 m	183.30	Sqm	158.60	29072	

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

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Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
5	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	2690.58	Cum	170.92	459874	
6	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.					
7	All kinds of soil	9990.66	Cum	110.53	1104268	
	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	41.55	Cum	2286.31	95006	
8	Supplying and filling sand in depressed portion in all upper floors, including watering, ramming, consolidating and dressing complete up to 6th floor.	140.57	Cum	2325.00	326825	
	<b>Total Sub Head B</b>					<b>4373768</b>
	<b>Sub Head:</b>					
	<b>C item No.</b>					
	<b>9 to 11</b>					
	<b>Concrete Work</b>					

EE-IV  
 EE-V (EMD)  
 EE-VII (PIB)



Sr. No.	Description of item	Quantity	Unit	Rate	Amount	Sub Head Total
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering-All work up to plinth level:					
a.	1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	431.85	Cum	7056.37	3047320	
b.	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)	645.93	Cum	6400.89	4134527	
10	Providing and laying cement concrete in retaining walls, return walls,walls (any thickness) including attached pilasters, columns, piers,abutments, pillars, posts, struts, buttresses, string or lacing courses,parapets, coping, bed blocks, anchor blocks, plain window sills, fillets,sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing.					

*(Handwritten signature)*

EE-IV EE-V(1e+2) EE-VII (PH)

*(Handwritten mark)*



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
11	1:5:10 (1 cement : 5 manufactured sand derived from Recycled Concrete Aggregate (RCA) : 10 graded stone aggregate 40 mm nominal size Recycled Aggregate (RA)) Providing and fixing up to floor five level precast cement concrete hollow block, including hoisting and setting in position with cement mortar 1:3 (1 cement:3 coarse sand), cost of required centering, shuttering complete. 1:1½:3 (1 Cement, 1½ coarse sand (zone-III), 3 graded stone aggregate 20 mm nominal size). Total Sub Head C	76.86 Cum	Cum	6462.82	496701	
		980.66 Cum	Cum	13334.90	13077013	20755561
<b>Sub Head: D</b> <b>Item No. 12 to 18</b>	<b>Reinforced Cement Concrete</b>					
12	Centering and shuttering including strutting, propping etc. and removal of form for;					

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

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Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
a	Foundations, footings, bases of columns, etc. for mass concrete	3208.70	Sqm	351.35	1127377	
b	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	4672.53	Sqm	742.65	3470056	
c	Suspended floors, roofs, landings, balconies and access platform	19504.73	Sqm	810.91	15816582	
d	Shelves (Cast in situ)	445.24	Sqm	810.91	361046	
e	Lintels, beams, plinth beams, girders, bressumers and cantilevers	12691.72	Sqm	643.55	8167756	
f	Columns, Pillars, Piers, Abutments, Posts and Struts	9325.71	Sqm	850.81	7934410	
g	Stairs, (excluding landings) except spiral-staircases	349.67	Sqm	695.82	243308	
h	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards	2913.48	Sqm	1164.09	3391548	
i	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	78.95	Sqm	351.35	27738	



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
13	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.	436623.20	Kg	94.84	41409344	
14	Thermo-Mechanically Treated bars of grade Fe-500D or more.					
15	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.	860279.20	Kg	94.84	81588879	
	Thermo-Mechanically Treated bars of grade Fe-500 D or more.					
	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including					

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 EE-V (E) (Ed.)  
 EE-VII (P) (P)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.					
	Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.					
a	All works upto plinth level Concrete of M30 grade with minimum cement content of 350 kg / cum	3417.56 Cum	Cum	9336.19	31906947	
b	All works above plinth level upto floor V level Concrete of M30 grade with minimum cement content of 350 kg /cum	4020.37 Cum	Cum	9633.44	38729975	

EE-V (E) (1) EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
16	Extra for R.C.C./ B.M.C/ R.M.C. work above floor V level for each four floors or part thereof.	682.66	Cum	297.25	202919	
17	Providing and fixing of expansion joint system related with wall joint (internal/ external) location as per drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multi cellular to facilitate movement. (Material					

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



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	shall confirm to ASTM 6063)					
18	<p><b>Wall Joint of 75mm gap</b></p> <p>Providing and fixing of expansion joint system of approved make and manufactures for various roof locations as per approved drawings and direction of Engineer-In Charge. The joints shall be of extruded aluminum base members with self-aligning and self centering arrangement support plates as per ASTM B221-02. The system shall be such that it provides watertight roof to roof/roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates a universal aluminum base member designed to accommodate various project conditions and roof treatments.</p>	42.38	metre	3845.20	162960	

EE-IV *[Signature]* EE-V (Elect.) EE-VII (PH)

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Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>The cover plate shall be designed of width and thickness required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's pre engineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement.</p>					
	<p>The Joint System shall resist damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement.(Material shall confirm to ASTM 6063).</p>					

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

76



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	Roof Joint of 75 mm gap	16.93 metre	metre	4317.00	73087	
	<b>Total Sub Head D</b>					<b>234613932</b>
<b>Sub Head: E</b>	<b>Masonry Work</b>					
<b>Item No. 19 to 23</b>						
19	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in : Cement mortar 1:6 (1 cement : 6 coarse sand)	1.29 Cum	Cum	7043.65	9113	
20	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : a Cement mortar 1.4 (1 cement : 4 coarse sand) b Cement mortar 1.6 (1 cement : 6 coarse sand)	64.52 Cum	Cum	9004.84	581007	
21	Extra for brick work / Precast concrete hollow blocks/ Tile brick masonry in superstructure above floor V level, for each four floors or part thereof by mechanical means	173.29 Cum	Cum	8768.13	1519430	
		367.01 Cum	Cum	151.75	55694	

EE-IV  
EE-V (Elect.)  
EE-VII (Pl)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
22	Half brick masonry with non modular fly ash bricks of class designation 10, conforming to IS : 12894, in super structure above plinth and upto floor V level. Cement mortar 1 : 4 (1 cement : 4 coarse sand)	6104.51	Sqm	1025.79	6261940	
23	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means.	1159.28	Sqm	13.32	15442	
	<b>Total Sub Head E</b>					<b>8442626</b>
<b>Sub Head: F item No. 24 to 28</b>	<b>Cladding Work</b>					
24	Providing and fixing 18 mm thick gang saw cut, mirror polished, pre-moulded and pre-polished, 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					

EE-IV  
EE-V (E/C)  
EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	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 colour black, Cherry/Ruby red					
	Area of slab over 0.50 sqm	734.28	Sqm	4681.51	3437552	
	Area of slab upto 0.50 sqm	129.58	Sqm	4950.20	641443	
25	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete. 8mm thick					
	Raj nagar plain white marble/ Udaipur green marble/ Zebra black marble					
	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	111.44	Sqm	2864.52	319222	
26						

ESR  
EF-VI (Ec.) EF-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
27	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. Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including: Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.	3777.95	Sqm	1124.99	4250156	
		1462.80	Sqm	4733.19	6923710	

EE-IV  
EE-V (E.I.C.S.)  
EE-VII (PH)





**CHANDIGARH  
HOUSING BOARD**

A Chandigarh Administration Undertaking

Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh, (Composite Work) (Post Qualification and Financial Bid Document)

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.					
	The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to					

EE-VI (E/Est.)  
EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material &amp; labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium items The Contractor shall provide curtain wall with aluminium compositepanel cladding, having all the performance characteristics all complete, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual</p>					

EE-VI (E) (P) EE-VII (PH)

5/5



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
28	area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places. Brick face cladding with machine moulded brick tiles of size 9"x3"x1.5" on concrete surface with 20mm thick cement mortar 1:3 complete in all respects	302.92	Sqm	479.30	145190	
	<b>Total Sub Head F</b>					<b>15717273</b>
<b>Sub Head: G item No. 29 to 36</b>	<b>Wood and PVC Work</b>					
29	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.					

✓  
EE-IV  
EE-VI (Art.)  
EE-VII (PH)

26



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
30	35 mm thick with necessary screws Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to openings /wooden frames with rawl plugs screws etc	1035.84 Sqm	Sqm	2132.41	2208839	
31	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	1354.82 Kg	Kg	209.14	283347	
32	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 :	445 Nos.	Each	248.49	110578	



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
33	250x10 mm	545 Nos.	Each	110.43	60184	
	200x10 mm	545 Nos.	Each	96.08	52364	
	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	1090 Nos.	Each	63.51	69226	
34	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. Twin rubber stopper					
35	Providing and fixing factory made uPVC glazed/ wire mesh windows/ doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (wherever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and	340 Nos.	Each	65.83	22382	

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

2/2



Sr. No.	Description of item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>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 &amp; size as per CPWD Specification. uPVC extruded glazing beads, interlocks and Inline sash adaptor (wherever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia. with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash &amp; 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</p>					

L  
EE-IV  
EE-VI (EC)  
EE-VII (PH)

7/6



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>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 &amp; 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 requirements and conforming to IS: 3548 &amp; IS: 16231 shall be paid separately.</p> <p>Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for : (iii) Sites with basic wind speed &gt; 45 m/sec as per IS 875 - Part 3 (iv) Sites with structure height more than 20m for all wind speeds.</p>					

EE-IV  EE-V (E/Act.) EE-VII (PH)

7/24



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
(i)	Three track three panels sliding window with two glazed & one wire mesh panels with Aluminium channel for roller track, wool pile, nylon rollers with SS 304 body. Using R2 series with frame (70mm & above) x (40mm & above) & both glazed and fly screen sash (25mm & above) x (50mm & above) with zinc alloy (zamak) powder coated touch locks with hook. (Height upto 1.2 meter).	185.82	Sqm	10271.79	1908704.00	
(ii)	Using R3 series with frame (96mm & above) x (40mm & above) & both glazed and fly screen sash (30mm & above) x (55mm & above) with zinc alloy (zamak) powder coated handle on every glazed panel along with multi-point locking system. (Height upto 1.8m).	445.82	Sqm	10600.82	4726058.00	
(iii)	Using R4 series with frame (115mm & above) x (45mm & above) & both glazed and fly screen sash (44mm & above) x (55mm & above) with zinc alloy (zamak) powder coated handle on every glazed panel along with multi-point locking system. (Height above 1.8m)	774.41	Sqm	11439.75	8859057.00	



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
(iv)	<p>Providing and fixing factory made uPVC white colour sliding glazed window upto 1.50 m in height dimension comprising of uPVC multi-chambered frame with in-built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape &amp; size according to uPVC profile), appropriate dimension of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylonrollers (weight bearing capacity to be 40 kg), G.I fasteners 100x8mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame &amp; sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc.</p>					

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



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing &amp; direction of Engineer-in-Charge. (Single / double glass panes, wire mesh and silicon sealant shall be paid separately). Variation in profile dimension in higher side shall be accepted but no extra payment on this account shall be made.</p> <p>Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. in depth &amp; width of profile shall be acceptable.</p> <p>Three track three panels sliding window with fly proof S.S wire mesh (Two nos. glazed &amp; one no. wire mesh panels) made of (big series) frame 116 x 45 mm &amp; sash 46 x 52 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead / double glazing bead of appropriate</p>	321.65	Sqm	10200.71	3281058.00	

EE-IV  
EE-VI (lect.) EE-VII (PH)

76



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
36	dimension. (Area of window above 1.75 sqm) Providing and fixing Galvanised wire mesh of average width of aperture 1.4mm normal dia if wire 0.63mm 14 welded with Stainless Steel strip (12x2mm) all around both sides including two supports of Stainless Steel Strip of size (12x2mm) complete in all respect and to the entire satisfaction of the Engineer-in-charge.	1238.30	Sqm	1698.35	2103075	
<b>Total Sub Head G</b>						<b>23684872</b>
<b>Sub Head: H item No. 37 to 44</b>	<b>Steel Work</b>					
37	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. Using M.S. angles 40x40x6 mm for diagonal braces	12.25	Sqm	5057.86	61959	



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
38	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.	65212.97	Kg	163.89	10687753	
39	Hot finished welded type tubes Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.	10659.48	Kg	150.53	1604572	
40	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.	15532.56	Kg	166.27	2582599	
41	M.S. tube Providing & fixing glass panes with putty and glazing clips in steel doors, windows,					

EE-IV  
EE-V (E) (ect.)  
EE-VII (PH)

42



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	clerestory windows, all complete with :					
42	4.0 mm thick glass panes (weights not less than 10 kg/sqm) Providing and fixing 5mm thick plain toughened glass panes in uPVC windows with glass taps & silicon to match the shade of glass complete in all respect to the entire satisfaction of Engineer-in-charge.	104.45 1419.11	Sqm Sqm	994.75 2125.15	103902 3015822	
43	Providing & fixing 6mm Thick reflective toughened glass panes in structural glazing with glass tape & silicon to match the shade of glass complete in all respect to the entire satisfaction of engineer in charge.	470.69	Sqm	2593.75	1220852	

E-I-V  
EE-V (Exec.)  
EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
44	Providing and fixing pressed steel sheet frames/ chowkhats manufactured from 1.60mm thick GI steel sheet including specified section, lugs/G.I fasteners (Hold fasts), steel butt hinges 2.5 mm thick and rubber buffers etc, and provision for receiving sliding bolts, lower bolts, door spring & hydraulic door closer, motor gaurd, lock strike-plate including the cost of Two tie rods of M.S. bars 10mm dia. provision for cleats etc.finished with one coat of red oxide zinc chromate primer (after pre-treatment of the surface ) of approved quality on the outer surface and one coat of anticorrosive bitumastic paint of approved quality on the internal surface. as per approved architectural drawing and as per details given in CPWD specifications and BIS code complete in all respect and to the entire satisfaction of the Engineer-in-Charge	3415.50	Rmt	617.60	2109413	
a.	Door & window frame of size 50mm x89mm with 35mm wide single rebate.					

EE-IV  EE-V(Exec.)  EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
b.)	Door and window frame of size 50mmx114mm with 35mm wide double rebate.	1583.50	Rmt	745.65	1180737	
c.)	Central Mullion of size 65x89mm with 35mm wide single rebate.	246.25	Rmt	629.85	155101	
d.)	Central Mullion of size 65x114mm with 35mm wide double rebate.	267.25	Rmt	719.70	192340	
	<b>Total Sub Head II</b>					<b>22915050</b>
<b>Sub Head: Item No. 45 to 53</b>	<b>Flooring</b>					
45	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2.4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's	2791.51	Sqm	905.45	2527573	

EE-IV *EE-VI (ect.)* EE-VII (PH)



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
46	<p>specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.</p> <p>Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :                      Raj Nagar plain                      Udaipur green marble</p>	209.73 1958.74 1252.77	Sqm Sqm Rmt	2108.01 2221.96 627.66	442113 4352242 786314	
47	Extra for pre finished nosing to treads of steps of marble stone.	3251.38	Sqm	989.75	3218053	
48	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including pointing the					

EE-IV EE-V(ENCL) EE-VII(PH)

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
49	joints with white cement and matching pigment etc., complete. Providing and fixing 1st quality ceramic glazed floor 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 12mm 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.	283.39	Sqm	992.62	281355	
50	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @					

EE-IV  
EE-V (Execd.)  
EE-VII (PH)

76



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
51	3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm 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 @ 3.3kg/sqm including grouting the joint with white cement & matching pigments etc. complete.	7455.30	Sqm	1498.61	11172587	
52	Size of Tile 600x600 mm Supplying and laying brick blast of 40 mm gauge having 10% pilla bricks	542.16	Sqm	1551.38	841096	
		748.33	Cum	2211.30	1654782	

EE-IV  
EE-V (Elect.)  
EE-VII (PB)

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
53	Extra for roughening the surface of Granite by applying araldite with stone chippings.	481.94	Sqm	31.80	15326	
	<b>Total Sub Head I</b>					<b>25291441</b>
<b>Sub Head:J item No. 54 to 61</b>	<b>Roofing</b>					
54	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. 75 mm diameter :	720.00	Rmt	225.32	162230	
55	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.					



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
(i)	Coupler 75 mm	640 Nos.	Each	84.40	54016	
(ii)	Single tee with door 75x75x75 mm	200 Nos.	Each	149.79	29958	
(iii)	Single tee without door 75x75x75 mm	200 Nos.	Each	131.37	26274	
(iv)	Bend 87.5° 75 mm bend	40 Nos.	Each	97.12	3885	
56	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete. 75 mm	800 Nos.	Each	328.83	197298	
57	Providing and fixing on wall face unplasticised Rigid uPVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS :					

EE-IV  
EE-VI (SCL)  
EE-VII (PH)

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
58	5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 150 mm dia Providing and fixing on wall face unplasticised - uPVC Tee 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.	836.00 Rmt	Rmt	814.10	680588	
59	150X150mm Providing and fixing on wall face unplasticised - uPVC Plain bend for unplasticised Rigid uPVC 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.	40.00 Nos.	Each	727.20	29086	
60	150mm Providing and fixing M.S. stays and clamps for PVC pipes of diameter :150mm	48.00 Nos. 600 Nos.	Each Each	813.00 169.20	39024 101520	

EE-IV  
EE-V (Elect.)  
EE-VI (PH)

76



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
61	Providing and fixing 40mm dia G.I. perforated pipe(spout) in depressed slab to weep out the leaked water,if any, consisting of 'B' class TATA G.I. pipe with tapered cut outer edge and with 150mmx150mm wire mesh of 22mmx12mm put on the inner side to act as a strainers placed with 0.014 cum of stone shingle. The pipe will also have 10numbers hole of 3.125mm complete in all respect to the entire satisfaction of Engineer in charge.	138.00	Metre	838.70	115741	
	<b>Total Sub Head -J</b>					<b>1439622</b>
<b>Sub Head: K</b>	<b>Finishing</b>					
<b>Item No. 62 to 70</b>						
62	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)	36086.89	Sqm	311.95	11257305	
63	20 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	1874.45	Sqm	445.80	835630	
64	6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand)	26892.30	Sqm	267.70	7199069	

EE-1  
 EE-VI(Exec.)  
 EE-VII(PH)

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
65	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.					
	From 10 mtr to 13.0 Mtr.	234.31	Sqm	76.97	18035	
	From 13 mtr to 16.0 Mtr.	234.31	Sqm	153.94	36069	
	From 16 mtr to 19.0 Mtr.	234.31	Sqm	230.92	54106	
66	From 19 mtr to 22.0 Mtr.	234.31	Sqm	307.89	72141	
	Finishing walls with Acrylic Smooth exterior paint of required shade :					
67	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	14703.78	Sqm	176.52	2595511	
	Applying priming coat:					
68	With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	2486.02	Sqm	64.99	161566	
	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :					
	Two or more coats on new work	3639.86	Sqm	139.09	506268	

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



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
69	Satna lime wash on walls with one coat.	64853.64	Sqm	13.86	898871	
70	Making number plates with cement sand mortar 1:4 as per architectural drawings. The rates further includes the cost of paint and painting letters and figures complete in all respects of the entire satisfaction of the Engineer-in-Charge.	110.00	Nos.	231.25	25438	
	<b>Total Sub Head K</b>					<b>23660009</b>
	<b>Road Work</b>					
Sub Head: L Item No. 71						
71	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -35 grade made by block making machine with strong vibratory compaction, of approved colour and pattern shape, laid in required colour and pattern over and including 50mmthick compacted bed of coarse sand, filling the joints with fine sandetc. all complete as per the direction of Engineer-in-charge.	2702.00	Sqm	970.70	2622831	
	<b>Total Sub Head L</b>					<b>2622831</b>

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
Sub Head: M item No. 72 to 74 72	Aluminium Work  Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS. 733 and IS. 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc.					
	Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for					

EE-IV (E/ECG) EE-VII (PH)

79



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	separately):					
	For fixed portion					
	Powder coated aluminium (minimum thickness of powder coating 50 micron)	2314.56 kG	kG	493.27	1141703	
73	Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick & 15 mm dia, at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge.					
	Powder coated aluminium sheet 2.5mm thick (minimum thickness of powder	867.63 Kg	Kg	672.41	583406	

EE-V (E/ACC) EE-V II (PH)

72

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
74	coating 50 micron) Filling the gap in between aluminium frame & adjacent RCC/ Brick/Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. Upto 5mm depth and 5 mm width	9835.20	Mtr	90.19	887037	2612146
	<b>Total Sub Head M</b>					
<b>Sub Head: N item No. 75 to 78</b>	<b>Water Proofing</b>					
75	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : (i) 1st layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS.2645 in the					

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

25



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
76	<p>recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. (ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. (iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cu/m/ sqm thoroughly embedded in the 2nd layer.</p> <p>Using rough kota stone.</p> <p>Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with</p>	3656.88	Sqm	1441.84	5272630	

EE-IV  
EE-V (Elect.)  
EE-VII (FD)

5/4

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
77	<p>water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge</p> <p>Using rough Kota stone</p> <p>Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:</p> <p>(i) 1st course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) 11nd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical</p>	1314.89	Sqm	1883.38	2476436	
		1196.34	Sqm	819.08	979898	

EE-IV  
EE-V(E) (1)  
EE-VII (PH)

7/6



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
78	and horizontal surface. (iii) Third course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) 1/4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm). Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse					

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

Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	<p>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.</p> <p>(c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded</p>					

EE-IV *[Signature]* EE-V(Elect) *[Signature]* EE-VII (PH) *[Signature]*

*[Handwritten mark]*



Sr. No.	Description of Item	Quantity	Unit	Rate	Amount	Sub Head Total
	with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge.	2312.70	Sqm	1611.08	3725946	
	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.					
	<b>Total Sub Head N</b>					<b>12454910</b>
	<b>Misslaneous items</b>					
Sub Head: O item No. 79-80						
79	Supply of Steel Pad Locks 50mm 6 levers	120.00	Nos.	117.25	14070	
80	Providing and fixing bright finished brass 200 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete in all respect to the entire satisfaction of Engineer in charge.	100.00	Nos.	2102.60	210260	
	<b>Total Sub Head O</b>					<b>224330</b>
	<b>Total</b>				<b>401883814</b>	

EE-IV  
 EE-V (E) (PH)  
 EE-VII (PH)

79

**Mile stone Programmer (Major Component i.e. Civil work)**  
(In Physical Terms)

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
<b>1</b>	<b>1st Quarter.</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)	181Days	0.50% of Tendered Amount of composite work
A	Earth Work	100	100		
B	PCC in F & P	100	100		
C	R.C.C. in F & P	50	50		
D	Water Proofing in basement				
	i) Horizontal	50	50		
	ii) Vertical	20	20		
<b>2</b>	<b>2<sup>nd</sup> Quarter.</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)	365 Days	1.00% of Tendered Amount of composite work
A	Earth Work	100	100		
B	PCC in F & P	100	100		
C	R.C.C. in F & P	50	100		
D	Water Proofing in basement				
	i) Horizontal	50	50		
	ii) Vertical	20	20		
E	Brick work/Hollow block work in Super structure	50	50		
F	Chowkhats Fixing	50	50		
G	Plastering	20	20		
<b>3</b>	<b>3<sup>rd</sup> Quarter</b>				
	Description	During the	Cumulative		



		quarter (DUs.)	e (DUs.)		
A	Earth Work	0	100	546 Days	1.00% of Tendered Amount of composite work
B	PCC in F & P	0	100		
C	R.C.C. in F & P	0	100		
D	Water Proofing in basement				
	i) Horizontal	50	100		
	ii) Vertical	80	100		
E	Brick work/Hollow block work in Super structure	40	90		
F	Chowkhats Fixing	40	90		
G	Plastering	40	60		
H	Flooring	40	40		
I	Coba	30	30		
J	Door fixing	20	20		
K	External Plastering/Finishing	50	50		
<b>4</b>	<b>4th Quarter.</b>				
	Description	During the quarter (DUs.)	Cumulative e (DUs.)		
A	Earth Work	0	100	730 days	1.48% of Tendered Amount of composite work
B	PCC in F & P	0	100		
C	R.C.C. in F & P	0	100		
D	Water Proofing in basement				
	i) Horizontal	0	100		
	ii) Vertical	0	100		
E	Brick work/Hollow block work in Super structure	10	100		
F	Chowkhats Fixing	10	100		
G	Plastering	40	100		
H	Flooring	60	100		
I	Coba	70	100		

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J	Door fixing	80	100	
K	External Plastering/Finishing	50	100	
L	Final finishing	100	100	
M	Joinery	100	100	
N	Cladding /Expansion Joint	100	100	
O	Finishing	100	100	





## Part B

**I - General/Specific Conditions,  
Specifications**

**II - Schedule of Quantities  
applicable to the work.**

**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 General/Specific Conditions for Major and Minor Component of work as applicable.
- c. CPWD specifications.
- d. Architectural Drawings.
- e. Indian standard specifications of B.I.S.
- f. Sound Engineering Practice.
- g. GCC.
- 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 (Refer Para 2 (xiii) of Schedule A-F for Civil, PH, Elect. & Hort. Component including External Development work & maintenance of Road & Horticulture Component at Page No.69 & 70 and as per instructions of Engineer-in-Charge. 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
1.	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.
- 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.
- 1.17 The Architectural drawings other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fittings involved unless and otherwise specifically mentioned.
- 1.18 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.
- 1.19 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.



- 1.20 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.
- 1.21 All material shall only be brought at site as per program finalized with the Engineer-in-Charge.
- 1.22 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.
- 1.23 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
- 1.24 The contractor shall be responsible for the watch and ward/ guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.
- 1.25 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.
- 1.26 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.
- 1.27 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.
- 1.28 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.
- 1.29 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.
- 1.30 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.
- 1.31 Nothing extra shall be paid for making drip of any shape, size.
- 1.32 Nothing extra shall be paid for making groove/ cut of any kind in the item/ items of plastering work except Fascia Pattern groves.
- 1.33 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.
- 1.34 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.



- 1.35 No hand grinding shall be permitted and grinding of stone/ marble wherever required shall be only through mechanical grinders.
- 1.36 In case the deptt supplies 'Recron fibers' for mixing in the mortar of Plaster of top storey and external Plaster, nothing extra shall be paid.
- 1.37 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.
- 1.38 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.
- 1.39 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.
- 1.40 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".
- 1.41 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.
- 1.42 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.



- 1.43 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.
- 1.44 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 or local authority for violation by the contractor or sub-contractor engaged on the work.
- 1.45 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.
- 1.46 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.
- 1.47 **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.

- 1.48 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 submit clearance from the RPFC regarding making compliance of the provisions of the EPF Act or otherwise as specified in the 'Tender Document'
  - (ii) To produce no due certificate from Electricity department.
- 1.49 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.
- 1.50 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.
- 1.51 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 items of work. His decision in this regard shall be final & binding on the part of the contractor.
- 1.52 Nothing extra shall be paid for any local carriage and re-handling of material irrespective of lead and lift.
- 1.53 All T&P required for the labour will have to be arranged by the agency.
- 1.54 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.
- 1.55 The agency would be responsible for submission of any document(s) required for obtaining "Occupancy Certificate" from the Estate office, "Fire clearance Certificate" from 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
- 1.56 All the bidders are required to submit the undertaking on structural stability and soundness as per form 'F' given in Tender Document.
- 1.57 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.
- 1.58 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.
- 1.59 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
- 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. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.
- xi. All incidental charges for cartage, storage and safe custody of materials brought to site.
- xii. **Nothing extra will be paid for executing items beyond 3.00 metre depth from the plinth level.**

### 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 SECURITY

- 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 confined 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 Agency will provide documents for obtaining Green Building griha rating.

#### 6.0 SAMPLE OF MATERIALS:-

- 6.1 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.

6.2 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.

6.3. 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

6.4 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.

## 7.0 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.

### 7.1 CONDITIONS FOR CEMENT

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

7.1.2 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.

7.1.3 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 their relevant 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.

- 7.1.4 The cement shall be brought at site in bulk supply of approximately 20 tonnes or more as decided by the Engineer-in-Charge.
- 7.1.5 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.
- 7.1.6 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.
- 7.1.7 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.
- 7.1.8 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 2020 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.
- 7.1.9 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.



7.1.10 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.

## 7.2 CONDITIONS FOR STEEL REINFORCEMENT.

7.2.1 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:

7.2.2 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.

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

7.2.4 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.



- 7.2.5 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.
- 7.2.6 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.
- 7.2.7 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

- 7.2.8 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.**
- 7.2.9 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.
- 7.2.10 Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer-in-Charge.
- 7.2.11 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 MT 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.

7.2.12 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 conforming to the relevant specifications and their availability before getting the approved from the Engineer-in-Charge.
- Coarse Aggregate As per CPWD Specifications
  - Fine Aggregate As per CPWD Specifications
  - Water It shall conform to requirements laid down in IS: 456-2000 (Para 5.4) or CPWD Specifications.
  - 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.
  - 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 <sup>2</sup> )	SPECIFIED CHARACTERISTICS COMPRESSIVE STRENGTH AT 28 DAYS (N/mm <sup>2</sup> ).	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/mm<sup>2</sup>.



- ii) 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.
- iii) **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: -

- i) Punjab Engineering College, Chandigarh.
- ii) NIT, Jalandhar. (Formerly known as REC, Jalandhar.)
- iii) IIT, New Delhi.
- iv) Chandigarh Engineering College, Sector 26, Chandigarh.
- v) 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.

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

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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
- 9.17 **OTHER OPERATIONS:** - carried out shall be submitted by the contractor as per Performa.
- 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.
- (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 IN THE WORK, CUBIC METRE PER DAY.	NUMBER OF SAMPLES
1-5	1
6-15	2
16-30	3
31-50	4
51 & Above	4 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 AND HOLLOW CONCRETE BLOCKS :-

10.1 The brick work shall be carried out with good quality FPS well burnt bricks of class designation 75 as per 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.4990 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 minimum compressive strength of 7.0 N/mm<sup>2</sup> at 28 days conforming to IS: 2185 (Part 1):2005 shall be used.

#### 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) Passenger Lift
- ii) Solar Photovoltaic Power Plant
- iii) Fire Fighting
- iv) CCTV
- v) Pressurized Mechanical Ventilation System
- vi) D.G. Set

#### 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.

i)	Vitrified, Glazed & Ceramic Tiles	vii)	Lifts
ii)	Acrylic emulsion	viii)	Solar System- Photo Voltaic cells and Inverter Panel
iii)	Water Proofing Treatment	ix)	Ventilation fans
iv)	PH Fixtures and fittings	x)	Fire Pump with motor
v)	MCB /RCCB/ MCCB/BDB's	xi)	CCTV Camera
vi)	Modular Switches, Socket & Accessories	xii)	D.G. Set

### 13.0 SAMPLE HOUSE: -

The contractor shall construct a sample house complete in all respects including all Civil and Electrical details/ fixtures within a time period of 12 months from the date of commencement. The sample quarter/ room shall be inspected and approved by the Engineer-in-Charge. Slight changes with regard to the fixtures/ fittings/ details/ dimensions etc. may occur as per the actual requirement or in order to enhance the functionality of the product or the unit. Thus, the procurement for all the internal fittings/fixtures/ fabricated material and other material etc. shall be done by the contractor only after the approval of the sample house.

### 14.0 DEFECT/ WATCH & WARD LIABILITY:

14.1 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 completed houses 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.

***However, the security of 1.5% (out of 2.5%) shall be released after one year from the date of completion as per Clause-17 and balance 1% shall be released after 5 years from the date of completion.***



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/Hollow Block	(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/ premature 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.

**15.00 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 neighboring 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. It is envisaged to obtain 3-star GRIHA rating for building to be constructed under this contract. The contractor shall strictly adhere to the following conditions as part of his contractual obligation. Rate quoted by the agency deemed to be inclusive of expenditure on this account and nothing extra shall be paid for this compliance.
- xxii. The contractor is to go through all conditions of the GRIHA rating stipulations. Failure to adhere to any of the conditions mentioned in GRIHA rating stipulations without approval of the Engineer in Charge, shall be deemed as a violation of contract and the contractor shall be held liable for penalty as per terms of the agreement.
- xxiii. 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.
- xxiv. All paper works, compliance, photography etc. with reference to obtaining the 3-star GRIHA rating for building shall be maintained/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**



**PROFORMA OF SCHEDULES - FOR PH WORK**

**SCHEDULE "A"**

Minor Component for PH Work which starts at page 168

**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 2020 with amendments upto date

i)	Name of Work	<b>Construction of 100 2BHK Flats (Composite work) for General Housing Scheme in Sector-53, Chandigarh - PH Component.</b>
ii)	Estimated cost of PH Work	Rs.3,15,04,637/-
iii)	Earnest Money (Composite amount)	As mentioned in Detail regarding Tendering Process.
iv)	Performance Guarantee	5% of the <del>composite</del> tendered value
v)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC-2020 (Construction work) issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OH.



	cover all overheads and profit	
2(xi)	Standard Schedule of Rates	Delhi Schedule of Rates DSR-2021(Updated) with correction slips issued up to the last day of the last date of submission of bid.
2(xii)	Department	Chandigarh Housing Board, Chandigarh
2(xiii)	Specifications	Latest CPWD specifications with latest amendments and as specified in Tender Document
9(ii)	Standard CPWD Contract form	CPWD form 7, as modified & corrected up to last date of receipt of tender.
<b>Clause 1</b>		
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	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
<b>Clause 2</b>		
	Authority for fixing compensation under clause-2	Superintending Engineer, CHB in Charge of Major Component.
<b>Clause 5</b>		
	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	As per Major Component Milestone (PH) - Page No.185-186
	Time allowed for execution of work	24 Months
<b>Authority to decide:-</b>		
2	Extension of time	Superintending Engineer, CHB in Charge of Major Component.



iv) Rescheduling of mile stones	Superintending Engineer, CHB in Charge of Major Component.
v) Shifting of date of start in case of delay in handing over of site	Superintending Engineer, CHB in Charge of Major Component.
<b>PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site</b>	
<b>Description</b>	<b>Time Period for handing over reckoned from date of issue of letter of intent.</b>
Complete Site	As per Major Component
<b>Clause 7</b>	
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.5.00 Lakh subject to one payment per month. (However bill of lesser amount may be paid as per discretion of EIC)
<b>Clause 7A</b>	
Whether Clause 7A shall be applicable Clause 7A (No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC, whatever applicable is submitted by the contractor to the Engineer-in-Charge.)	Yes, Applicable
<b>Clause 8A</b>	
Authority to decide compensation on account, if Contractor fails to submit completion plans.	Executive Engineer in Charge of Major Component
<b>Clause 10 A</b>	

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:-

Sl. No.	Equipment	Numbers (Minimum)
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As per Major Component		
<b>Clause 10 B (ii)</b>		
Whether Clause 10 B (ii) shall be Applicable		Not Applicable
<b>Clause 10 C</b>		
Component of labour expressed as percent of value of work		Not Applicable
<b>Clause 10 CC</b>		
Clause 10 CC to be applicable in contracts		Yes, Applicable
<b>S. No.</b>	<b>Relevant component of material/ Labour for price escalation.</b>	<b>Percentage of total value of work</b>
1	Cement component	0.90%
2	Labour component	25%
3	Civil component of other construction material	73.93%
4	E&M (Electrical & Mechanical) component	--
5	POE (Diesel) component	--
6	Reinforcement Steel Bar/ TMT Bars/ Structural Steel (Including strands and cables) component	0.17%
7	Bitumen component	--
	Total	100%
<b>Clause 11</b>		
Specification to be followed for execution of work.		CPWD Specifications with correction slips upto date.
<b>Clause 12</b>		
Authority to decide deviation upto 1.5 times of tendered amount.		Tender Approving Authority
The deviation limit for construction work		100% for all the items
<b>Clause 16</b>		



Competent authority for deciding reduced rates.		Superintending Engineer, CHB of Major Component		
<b>Clause 18</b>				
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		Minor Component		
		1. Chase Making Machines		
		2. Compactor		
		3. Mixer with Hopper / loader		
		4. Welding Generator		
		5. Excavator		
		6. Steel shuttering & Scaffolding		
		7. Transit Mixer		
<b>Clause 19</b>				
Clause 19 C		Rs.1000/- penalty for each default.		
Clause 19 D		Rs.1000/- penalty for each default.		
Clause 19 G		Rs.1000/- penalty for each default.		
Clause 19 K		Rs.1000/- penalty for each default.		
<b>Clause 25</b>				
Settlement of Dispute by Conciliation and Arbitration :		CEO, CHB Conciliator ,		
<b>Clause 32</b>				
<b>Requirement of Technical representatives and Recovery rates</b>				
Requirement of Technical Staff		Minimum Experience (Years)	Designation of Technical Staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling
Qualification	No. (of major + minor Component)			
Graduate Engineer or	1+1	2 or 5	Project Manager cum planning/	Rs.15,000/- Per month per

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Diploma Engineer		respectively	quality/ Site/ Billing Engineer	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.				
<b>Clause 34</b>				
Extent of GST payable by Contractor for Building and Construction works.		GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/extended date of submission of tender will be adjusted accordingly		
<b>Clause 38</b>				
i)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates printed by C.P.W.D.			
ii)	Variation permissible on theoretical quantities			
a)	Cement	2% Plus/Minus		
b)	Bitumen All Works	2.5% Plus only & Nil on Minus side		
c)	Steel Reinforcement and structural steel sections for each diameter, section and category	2% Plus/Minus		
d)	All other materials.	Nil		



**ABSTRACT OF COST**

**Construction of 100 2BHK Flats (Composite work) for General Housing Scheme in Sector-53, Chandigarh - PH Component.**

Sr. No	Sub Head	Amount
1	Sub Head : A Earth Work	165430
2	Sub Head : B Concrete Work	612488
3	Sub Head : C Reinforced Cement Concrete	621841
4	Sub Head : D Brick Work	247532
5	Sub Head : E Finishing	233501
6	Sub Head : F Sanitary Installation	12990205
7	Sub Head : G Water Supply	15787771
8	Sub Head : H Drainage	845869
<b>TOTAL</b>		<b>31504637</b>

Executive Engineer-VII(PH)  
Chandigarh Housing Board  
Chandigarh

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EE-VII (PH)

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**Schedule of quantities for the work of Construction of 100 2BHK Flats (Composite work) for General Housing Scheme in Sector-53, Chandigarh - PH Component.**

S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
<b>Sub Head : A Earth work</b>						
<b>Item No. 1 to 4</b>						
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 up to 50m and for all lift as directed by Engineer-in-charge.					
	All kinds of soil	14.00	cum	157.66	2207	
2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means in foundation trenches or drains ( not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.					
	All kinds of soil	128.00	cum	231.26	29601	

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

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
3	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc, and disposing of surplus excavated soil as directed, within a lead of 50m: All kinds of soil Pipes, cables etc, exceeding 80 mm dia. but not exceeding 300 mm dia.	447.00	metre	298.93	133622	165430
<b>Sub Head : BItem No. 4</b>	<b>Concrete Work</b>					
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering. All work up to plinth level. 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources; 4 graded stone aggregate 20 mm nominal size derived from natural sources)	27.00	cum	7791.45	210369	



S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
	1:3:6( 1 Cement : 3 coarse sand (zone-II) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources);	32.00 cum	cum	7228.93	231326	
	1:4:8( 1 Cement : 4 coarse sand (zone-III ) derived from natural sources : 8 graded stone aggregate 40 derived from natural sources);	15.00 cum	cum	6692.20	100383	
	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);	11.00 cum	cum	6400.89	70410	
	<b>Sub Head : C Reinforced Cement Concrete Work</b>					<b>612488</b>
<b>Item No. 5 &amp; 6</b>						
5	Centering and shuttering including strutting, propping etc. and removal of form for.					
a)	Suspended floors, roofs, landings, balconies and access platform.	50.00 sqm	sqm	810.91	40546	
b)	Columns, Pillars, Piers, Abutments, Posts and Struts.	464.00 sqm	sqm	850.81	394776	
c)	Edges of slabs and breaks in floors and walls.					
	Under 20 cm wide	603.00 metre	metre	192.46	116053	

EE-VI (PH)  
EE-VI (PH)

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
6	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.	743.00 Kg	Kg	94.84	70466	621841
<b>Sub Head : D Brick Work</b>						
7	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 )	34.00 cum	cum	7280.36	247532	247532
<b>Sub Head : E Finishing</b>						
<b>Item No. 8 &amp; 9</b>						
8	12 mm cement plaster of mix : 1 : 4 ( 1 cement : 4 fine sand )					
9	Cement plaster 1 : 3 ( 1 cement : 3 coarse sand) finished with a floating coat of neat cement .	565.00 sqm	sqm	311.95	176252	



S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
	12 mm cement plaster	140.00	sqm	408.92	57249	
<b>Sub Head : F Sanitary Installation</b>						<b>233501</b>
<b>Item No. 10 to 26</b>						
10	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	100.00	Nos	937.58	93758	
11	Providing and fixing soil, waste and vent pipes : 100 mm dia.					
	Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	3652.00	metre	1139.74	4162330	
12	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc. For 100 mm dia. Pipe					
13	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.	200.00	Nos	326.30	65260	



S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
	100 mm dia					
	Sand cast iron S&S as per IS - 3989	200.00	Nos	632.21	126442	
14	Providing and fixing plain bend of required degree					
	100 mm dia					
	Sand cast iron S&S as per IS - 3989	200.00	Nos	465.15	93030	
15	Providing and fixing heel rest sanitary bend					
	100 mm dia					
	Sand cast iron S&S as per IS - 3989	200.00	Nos	465.15	93030	
16	Providing and fixing single equal plan junction of required degree					
	100x100x100mm					
	Sand cast iron S&S as per IS - 3989	500.00	Nos	748.24	374120	
17	Providing and fixing terminal guard:					
	100 mm					
	Sand cast iron S&S as per IS - 3989	100.00	Nos	465.15	46515	
18	Providing and fixing collar :					

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
	100 mm					
	Sand cast iron S&S as per IS - 3989	1070.00	Nos	465.15	497711	
19	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter :					
	100 mm	3550.00	Nos	581.48	2064254	
20	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent ann 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	300.00	Nos	1696.96	509088	
21	Painting sand cast iron/ centrifugally cast (spun) iron soil , waste vent pipes and fittings with paint of any color such as chocolate grey, or buff etc. over a coat of primer (of approved quality) for new work:					
	100 mm diameter pipe	2120.00	metre	73.61	156053	

EEB

EE-VI (Sec)

EE-VII (PH)

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
22	Providing and fixing counter top white wash basin oval shape as per approved make, 32 mm C.P. brass waste of standard pattern and making good the walls wherever required including cost of red & white lead, gasket, cement sand and grit etc., complete in all respects to the entire satisfaction of Engineer-in-Charge. White Vitreous China wash basin size 510 mm x 430 mm (minimum).	100.00 Nos	each	3670.70	367070	
23	Providing and fixing European type single piece suite white vitreous china couple closet bowl-WC with UF seat cover with seat and lid, 10 litre low level white vitreous china flushing cistern (Dual Flush) as per approved make complete, cutting and making good the walls and floors wherever required etc, complete in all respects to the entire satisfaction of Engineer-in-Charge. Size 680 mm x 370 mm x 735 mm (Minimum).	100.00 Nos	each	17085.00	1708500	
24	Providing and fixing in position best quality salem stainless steel Double bowl sink (Glossy) of bowl overall size of 1320x530x250 mm (minimum) with double bowl each of size 600x450x250mm (minimum) as per approved make with complete fitting and 32/40 mm waste coupling including washers etc., PVC waste pipe including cutting and making good the wall and floor complete in	100.00 Nos	each	21371.60	2137160	

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

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
25	all respect to the entire satisfaction Engineer -in -Charge. Providing and fixing Cockroach trap of Salem stainless steel Heavy quality size 5" dia weight 280 gms complete in all respect to the entire satisfaction of Engineer-in-Charge	300.00	Nos	361.70	108510	
26	Providing and fixing hanger including making & drilling holes by mechanical means in RCC roof/wall, 2 Nos. 16mm dia verticle steel bars whole threaded, 2 Nos horizontal angle iron 40x40x6mm One metre long, including making holes in angle iron, nuts, rawl plug, primer & painting complete in all respects to the entire satisfaction of Engineer-in-charge.	260.00	Nos	1489.90	387374	
<b>Sub Head :G Water Supply</b>						<b>12990295</b>
<b>Item No. 27 to 49</b>						
27	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including 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.					

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
	Internal work -Exposed on wall.					
a)	20 mm nominal dia Pipes	14885.00	metre	343.93	5119398	
b)	25 mm nominal dia Pipes	1180.00	metre	432.18	509972	
c)	32 mm nominal dia Pipes	375.00	metre	529.95	198731	
d)	50 mm nominal dia Pipes	95.00	metre	980.64	93161	
28	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.					
	Concealed work, including cutting chases and making good the walls etc.					
a)	15 mm nominal dia Pipes	4421.00	metre	465.25	2056870	
b)	32 mm nominal dia Pipes	420.00	metre	752.60	316092	

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.	4610.00	metre	392.09	1807535	
	External work					
30	25 mm nominal dia Pipes					
	Providing and fixing brass stop cock of approved quality:					
a)	15 mm nominal bore	100.00	Nos	321.40	32140	
b)	20 mm nominal bore	110.00	Nos	346.95	38165	
31	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete:					
	15 mm nominal bore	110.00	Nos	369.07	40598	
32	Providing and fixing uplasticised PVC connection pipe with brass unions:					
	45 cm length					
	15 mm nominal bore	100.00	Nos	90.09	9009	

EE-IV *[Signature]* EE-V (Elect.) *[Signature]* EE-VII (PH) *[Signature]*

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
33	Providing and placing on terrace ( at all floor levels) polyethylene water storage tank ISI : 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	92500	litres	10.25	948125	
34	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931	600.00	each	529.30	317580	
35	15mm nominal bore 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.	700.00	each	65.29	45703	
36	Cutting holes up to 30x30 cm in walls including making good the same:					
	With common burnt clay F.P.S. (non modular) bricks	500.00	each	383.38	191690	
37	Cutting holes up to 15x15cm in R.C.C floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including finishing complete so as to make it leak proof.	300.00	each	398.97	119691	

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
38	Providing and fixing C.P. brass flange ( heavy) of good quality wt. 15gms. complete in all respects to the entire satisfaction of Engineer-in-charge.	100.00	Nos	103.60	10360	
39	Providing and fixing brass stop cock of approved quality complete in all respects to the entire satisfaction of Engineer-in-charge.					
a)	25 mm nominal bore	200.00	Nos	1691.80	338360	
b)	32 mm nominal bore	40.00	Nos	2162.20	86488	
40	Providing and fixing GM Gate Valve of nominal bore of approved quality complete in all respects to the entire satisfaction of engineer-in-charge.					
	50 mm nominal bore	20.00	Nos	3064.60	61292	
41	Providing and fixing in position C.P. over Head Rose Shower 15mm with revolving joint and 200mm long shower arm with wall flange complete in all respect to the entire satisfaction of Engineer-in-charge.	100.00	Nos	1671.80	167180	
42	Providing and fixing CPVC Readymade tank Nipple (ISI MARKED) with Check-nut and Rubber Washer Complete in all respects to the entire satisfaction of Engineer-in - Charge.					
a)	20 mm dia nominal bore	210.00	Nos	95.70	20097	

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
b)	25 mm dia nominal bore	210.00	Nos	125.80	26418	
c)	50 mm dia nominal bore	10.00	Nos	355.90	3559	
43	Providing and fixing C.P. brass Health Faucet complete in all respect to the entire satisfaction of Engineer - In - Charge. Size 15mm	100.00	Nos	1232.00	123200	
44	Providing and fixing CP brass Single Lever Diverter 3 inlet concealed (Three way) with easy turn and provision of tub filler & over head shower and wall flanges complete in all respects to the entire satisfaction of Engineer-in-Charge. Size 15mm	200.00	Nos	7781.30	1556260	
45	Providing and fixing CP brass single lever basin mixer with 15mm copper pipe, 450 mm long braided hoses and flanges complete in all respects to the entire satisfaction of Engineer-in-Charge. Size 15mm	100.00	Nos	4093.20	409320	
46	Providing and fixing in position C. P. brass Single Lever sink mixture 15mm with swinging spout (Wall mounted) with flange complete in all respect to the entire satisfaction of Engineer - in - charge.	200.00	Nos	4916.10	983220	

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
47	Providing and fixing Gum Metal ferrule with C.I. mouth cover including boring and tapping the main. 15 mm nominal bore	100.00 Nos	each	729.70	72970	
48	Writing & Painting of Specific house Nos. (minimum height 7.5 cm) including, cleaning the surface, making base with paint, with painting brushes, turpentine, stencil etc. on overhead water tanks complete in all respects to the entire satisfaction of Engineer-in-charge.	110.00 Nos	each	98.80	10868	
49	Providing and fixing CPVC union in CPVC pipe line including cutting and threading the pipe and making the long screw, etc complete in all respects to the entire satisfaction of Engineer-in-charge.					
a)	20 mm dia nominal bore	210.00 Nos	each	125.70	26397	
b)	25 mm dia nominal bore	200.00 Nos	each	145.00	29000	
c)	32 mm dia nominal bore	40.00 Nos	each	202.20	8088	
d)	50 mm dia nominal bore	20.00 Nos	each	511.70	10234	
						15787771
<b>Sub Head : H Drainage</b>						
<b>Item No. 50 to 55</b>						

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
50	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design. 150 mm diameter S. W. pipe	160.00	metre	1158.55	185368	
51	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality. I.D - 2.5 Square shape 450mm internal dimensions	40.00	Nos	1108.45	44338	
52	Making connection of drain or sewer line 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 100 to 250 mm diameter.	20.00	Nos	723.24	14465	
53	Providing and fixing precast concrete gully trap cover and frame minimum overall thickness 3 1/2" with clear opening 300 mm x300 mm for gully trap chamber to be fixed in cement concrete 1:2:4 complete in all respect to the entire satisfactions of Engineer-	60.00	Nos	975.90	58554	

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S. No.	DESCRIPTION OF ITEM	Qty	Unit	Rate	Amount	Sub Head Total
54	in - Charge. Providing and fixing H.C.I. gully traps 100 mm i/d & C.I. grating 150x150mm with three coats of black bitumastic superior pain of approved manufacture on all C.I. work as per standard design minimum depth of water should be 150 mm with a minimum seal 50 mm complete in all respect to the entire satisfaction of Engineer-in-Charge	60.00	Nos	2125.20	127512	
55	Providing and fixing soil, waste and vent Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989 including cement joints 1:1 (1 cement : 1 coarse sand) complete in all respects to the entire satisfaction of Engineer-in-charge. 150 mm diameter	160.00	metre	2597.70	415632	845869
	<b>Total</b>				<b>31504637</b>	<b>31504637</b>

Executive Engineer-VII(PH)  
Chandigarh Housing Board  
Chandigarh

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EE-VII (PH)



**Construction of 100 2BHK Flats (Composite work) for General Housing Scheme in Sector-53, Chandigarh - PH Component.**

**Mile stone Programmer (Minor Component i.e. PH work)  
(In Physical Terms)**

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
<b>1</b>	<b>1st Quarter</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)	181 Days	0% of Tended Amount of Composite Work
	1. Earth Work	-	-		
	2. Concrete Work	-	-		
	3. RCC	-	-		
	4. Brick Work	-	-		
	5. Finishing	-	-		
	6. Sanitary Installation	-	-		
	7. Water Supply	-	-		
	8. Drainage	-	-		
<b>2</b>	<b>2nd Quarter</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)	365 Days	0% of Tended Amount of Composite Work
	1. Earth Work	-	-		
	2. Concrete Work	-	-		
	3. RCC	-	-		
	4. Brick Work	-	-		
	5. Finishing	-	-		



	6. Sanitary Installation	-	-		
	7. Water Supply	-	-		
	8. Drainage	-	-		
<b>3</b>	<b>3rd Quarter.</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)		
	1. Earth Work	60	60	546 Days	0.11% of Tendered Amount of Composite Work
	2. Concrete Work	60	60		
	3. RCC	50	50		
	4. Brick Work	50	50		
	5. Finishing	50	50		
	6. Sanitary Installation	40	40		
	7. Water Supply	30	30		
	8. Drainage	40	40		
<b>4</b>	<b>4th Quarter.</b>				
	Description	During the quarter (DUs.)	Cumulative (DUs.)		
	1. Earth Work	40	100	730 Days	0.20% of Tendered Amount of Composite Work
	2. Concrete Work	40	100		
	3. RCC	50	100		
	4. Brick Work	50	100		
	5. Finishing	50	100		
	6. Sanitary Installation	60	100		
	7. Water Supply	70	100		
	8. Drainage	60	100		



**General/Specific Conditions for Minor Component (Public Health) 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. CPWD specifications.
- c. Architectural Drawings.
- d. Indian standard specifications of B.I.S.
- e. Sound Engineering Practice.
- f. GCC.
- g. 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.

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**PROFORMA OF SCHEDULES**  
**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work – **E.I. Work**

Schedule of Quantities for Electrical (E&M) work – **E.I. Work**  
(Enclosed) which starts at page No. 169

**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 2020 with amendments upto date

i)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
ii)	Estimated cost of Work Electrical(E& M) work – <b>E.I. Work</b>	Rs.4,00,02,558/-
iii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
iv)	Performance Guarantee	5% of the <del>composite</del> tendered value
v)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OH.



overheads and profit	
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2022) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge 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 at	As per Major Component Mile stone at Page No. <u>213-214</u>
Time allowed for execution of work	24 Months
Authority to decide:	
(i) Extension of time	Superintending Engineer in Charge of Major Component
(ii) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(iii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
Clause 5 Schedule of handing over of site	
Description	Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site	As per Major component
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.10.00 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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.	Executive Engineer in Charge of Major Component.	
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		No
Clause 10 C		Not applicable.
Component of labour expressed as percent of value of work		
Clause 10 CC		Yes, Applicable
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
1.	Labour component	25%
2.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.		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



Clause 12			
Authority to decide deviation upto 1.5 times of tendered amount.		Tender Approving Authority	
The deviation limit for construction work.		100% for all the items.	
Clause 16			
Competent authority for deciding reduced rates.		Superintending Engineer, incharge of Major component	
Clause 18			
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		Minor Component -Electrical (E & M) Works	
		Chase Making Machines	
		All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc.,	
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.			
Clause 19			
Clause 19 C		Rs. 1000/- penalty for each default	
Clause 19 D		Rs. 1000/- penalty for each default	
Clause 19 G		Rs. 1000/- penalty for each default	
Clause 19 K		Rs. 1000/- penalty for each default	
Clause 25			
Settlement of Dispute by Conciliation and Arbitration :		CEO, CHB (Conciliator)	
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
Qualification	Number (of Major +Minor component)		
Graduate Engineer or Diploma Engineer	1+1	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer
Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable

**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical Installation work		
Sub Head	Description	Sub Head Total
'A'	WIRING	2,36,88,412.00
'B'	MCCB, MCB & DB'S	21,39,530.00
'C'	EARTHING	8,99,320.00
'D'	LIGHTNING CONDUCTOR	6,58,455.00
'E'	NON-SCHEDULED ITEMS	1,26,16,841.00
	Total:	4,00,02,558.00

*[Signature]*  
Executive Engineer-V(Elect.)  
Chandigarh Housing Board,  
Chandigarh



**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+S) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK).**

**Electrical(E&M) Work- E.L work**

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
Sub Head 'A'	<b>WIRING</b>					<b>2,36,88,412.00</b>
1	Point wiring in steel conduit, with modular type switch: Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.					
2	Group B <b>Twin Control point wiring in steel conduit, with modular type switch:</b> Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS	4335 Point	Point	1622.00	70,31,370.00	
		600 Point	Point	2159.00	12,95,400.00	

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S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
3	PVC insulated copper conductor single core cable etc as required.					
	<b>Circuit/sub main wiring in steel conduit:</b>					
	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required					
3(a)	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	11970	Mtrs	357.00	42,73,290.00	
3(b)	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	10251	Mtrs	467.00	47,87,217.00	
4	<b>Wiring in existing conduit :</b>					
	Supplying and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.					
4(a)	2 x 1.5 sq. mm + 1x1.5 Sq mm	590	Mtrs	104.00	61,360.00	
4(b)	2 x 4 sq. mm + 1x4 Sq mm	460	Mtrs	224.00	1,03,040.00	
4(c)	2 x 6 sq. mm	1440	Mtrs	235.00	3,38,400.00	
5	<b>Telephone wiring in existing conduit:</b>					



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
6	Supplying & drawing following pair 0.5sq mm FRLS PVC insulated copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/PVC conduit as required. 2 Pair <b>S/F steel conduit:</b> Supplying & fixing of following sizes of Steel conduit along with accessories in surface/ recess including cutting the wall & making good the same in case of recessed conduit as required.	1285 Mtrs	Metre	41.00	52,685.00	-
6(a)	25 mm	1610 Mtrs	Metre	279.00	4,49,190.00	
6(b)	32 mm	1880 Mtrs	Metre	355.00	6,67,400.00	
7	<b>S/F PVC conduit:</b> Supplying & fixing of following sizes of medium class f PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.					
7(a)	25 mm	2849 Mtrs	Metre	158.00	4,50,142.00	
7(b)	32 mm	77.50 Mtrs	Metre	201.00	15,578.00	
8	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic					

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EE-V (Acc.)

EE-VII (PH)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
8(a)	laminated sheet cover in front including painting etc. as required.	25 Nos.	Each	387.00	9,675.00	
9	<b>S/F modular type switch/socket:</b> Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				-	
9(a)	Telephone socket outlet	100 Nos.	Each	161.00	16,100.00	
9(b)	TV antenna socket outlet	300 Nos.	Each	161.00	48,300.00	
10	<b>S/F modular type electronic fan regulator:</b> Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	1300 Nos.	Each	402.00	5,22,600.00	
11	<b>S/F modular boxes, base &amp; cover plate:</b> Supplying and fixing following size/modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.				-	
	1 or 2 Module (75mm.X75mm)	400 Nos.	Each	325.00	1,30,000.00	

EE-V(Elect) EE-VII (PIF)

24



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
12	<b>S/F light plug point modular type accessories:</b> Supplying & fixing suitable size GI box with modular plate & cover in front on surface or in recess, including providing & fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection, painting etc. as required. (For light plugs to be used in non residential buildings).	2235 Nos.	Each	520.00	11,62,200.00	-
13	<b>S/F power plug point modular type accessories:</b> 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 amps modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required.	700 Nos.	Each	638.00	4,46,600.00	-
14	<b>S/F ceiling rose:</b> Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	300 Nos.	Each	94.00	28,200.00	-
15	<b>S/F call bell/buzzer:</b>					

EE-V (E/ACC) EE-VII (PH)

19

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
16	Supplying & fixing call bell/buzzer suitable for DC/AC single phase, 230 volts, complete as required 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 PVC insulated copper conductor single core cable in surface/ recessed steel conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.	100 Nos.	Each	108.00	10,800.00	
17	Group C Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB."C" curve including connections, painting etc. as required.	1105 Nos. 200 Nos.	Each Each	1193.00 793.00	13,18,265.00 1,58,600.00	
18	Supplying and fixing PVC batten/ angle holder including connections etc. as required.	2600 Nos.	Each	120.00	3,12,000.00	
<b>Total of Sub Head 'A'</b>						
<b>Sub Head 'B'</b>	<b>MCCB, MCB, DB'S /cable trays</b>					<b>21,39,530.00</b>

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



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
19	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc.as required. (But without MCB/RCCB/Isolator)	5 Nos.	Each	2805.00	14,025.00	
20	8 Way Double Door Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/isolator)					
21	6 way (4 + 18) Double door <b>S/F 'C' series, SP MCB:</b> 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.	105 Nos.	Each	5421.00	5,69,205.00	

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EE-IV  
EE-V (E/P/L)  
EE-VII (PH)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
a)	Single pole	1920 Nos.	Each	279.00	5,35,680.00	
b)	Double Pole	10 Nos.	Each	715.00	7,150.00	
c)	Triple pole and neutral	140 Nos.	Each	1339.00	1,87,460.00	
22	Supplying and fixing following rating, four pole, (three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 40 A	100 Nos.	Each	3474.00	3,47,400.00	
23	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc. as required. For 8 way, Double door SPN MCBDB	5 Nos.	Each	907.00	4,535.00	
24	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc. as required. For 6 way, Double door TPN MCBDB	105 Nos.	Each	1225.00	1,28,625.00	





**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION, IMPROVING

Construction of 100 2BHK Flats (Basement & S-5), for General Housing Scheme in Sector S3 Chandigarh. (Composite Work) (Post Qualification and Financial Bid Document)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
25	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (galvanization thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.	329	Mtrs	1050.00	3,45,450.00	
	300 mm width X 50 mm depth X 1.6 mm thickness					
	<b>Total of Sub Head 'B'</b>					<b>8,99,320.00</b>
	<b>E A R T H I N G</b>					
26	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	180	Mtrs	1690.00	3,04,200.00	
27	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	280	Mtrs	769.00	2,15,320.00	
28	Providing and fixing 25 mm X 5 mm copper strip on surface recess for	300	Mtrs	1266.00	3,79,800.00	

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EE-IV  
EE-V (Elec.)  
EE-VII (PH)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
	connections etc. as required.					
	<b>Total of Sub Head 'C'</b>				-	
	<b>LIGHTNING CONDUCTOR</b>				-	<b>658455.00</b>
	<b>P/F G.I. lightning Conductor Final:</b>				-	
29	Providing & fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	20 Nos.	Each	564.00	11,280.00	
30	Joining copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/sweating and soldering etc. as required.	270 Nos.	Each	123.00	33,210.00	
31	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required.(For horizontal run)	1210 Mtrs	Mtr	138.00	1,66,980.00	
32	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required.(For vertical run)	405 Mtrs	Mtr	215.00	87,075.00	



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
33	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.				0.00	
	3½ X 240 sq. mm (62mm)	22 Nos.	Each	1120.00	24640.00	
34	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawings	1300 Nos.	Each	197.90	2,57,270.00	
35	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930. Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the					

*[Signature]*  
EL-V (Elect.) EL-VII (PH)

5/5

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
	trench but excluding sand cushioning and protective covering etc., complete as required.					
	120 mm dia (OD-120 mm & ID-103 mm nominal)	200 Mtrs	Mtrs	390.00	78,000.00	
	<b>NON-SCHEDULED ITEMS</b>					<b>12616841.00</b>
36	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	20 Set	Each	3092.00	61,840.00	
37	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required	46 Set	Each	10031.00	4,61,426.00	
38	Supply- Installation, testing and commissioning of LED Surface Mounted Downlighter with a nominal system lumen output of 2000 lumens and a minimum system efficacy of 100lm/W. The luminaire shall have a rated system	1245 Nos.	Each	2180.00	27,14,100.00	





**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 100 2BHK flats (Basement & N+5), for General Housing Scheme in Sector 53 Chandigarh, (Composite Work) (Post Qualification and Financial Bid Document)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
39	lifetime of 30,000 burning hours at L70B50. The luminaire should have a color temperature of 6500K and CRI>80. The luminaire shall meet IP20 rating with THD<30% and PF > 0.9. The luminaire housing should made of high grade polycarbonate. The total power consumption should not exceed 18W (including driver). Similar to Philips Make SM251C LED20S- 6500 PSU WH or equivalent. (305)	195 Nos.	Each	1812.00	3,53,340.00	
40	Supply, Installation, testing and commissioning of LED not exceeding 10 Watt Bulk Head light fixture of Phillips make WT202W LED6S CW PSU S2 PC or equivalent.	290 Mtrs	Metre	2038.00	5,91,020.00	
41	Supply & laying of PVC insulated and PVC sheathed/ XLPE, armoured Aluminium conductor cable of 1.1 KV of size 3 ½ x240sqmm on surface or in the existing Metal/ PVC pipe laid underground.	7070 Mtrs	Metre	754.00	53,30,780.00	

EE-VI (Ext) EE-VII (PH)

5/5

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
42	<p>Metal/ PVC pipe laid underground as required.</p> <p><b>METER PANEL</b> Design, Fabrication and installation of cubical type, outdoor type, D'door, floor mounted, fixed type, free standing single front, dust proof &amp; compartmentalized Outdoor Meter Panel made out of M.S.CRC Sheet 14G/16G, &amp; Base Frame Channel 75X40X4mm duly painted with Siemens Grey Powder Coated Paint as per specification. Overall Size (H)1825MM X (W)1650MM X (D)600MM The panel shall be open able from both sides. Both on front and the back side there will be 5 compartments to house 3 phase energy meter and a MCBTP &amp; N in each compartment. The cubical panel shall be comprising of the following items in detail</p> <p><b>Incomer supply</b> Space for installation of MCCB 250A. TPN 36 K.A with O/L and S/C protection = 1 Nos. Spreader link 250A TPN = 2 No. Indication lamp LED type Red - Yellow- Blue = 3 Nos. SPM/CB 6Amp = 3</p>	10	Nos.	Each	287342.00	28,73,420.00

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



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
	Nos					
	<p><b>Bus bar</b> 250A 4 strip Aluminium bus bar and earth strip as per design (Current density of Aluminium bus bar shall be 1 mm x 1mm = 1Amp.) = 1 Nos</p> <p><b>Outgoing</b> Space for 3 phase Kwh meter = 10 Nos Space for MCB IPN 63A 10KA = 10 Nos</p> <p>The panel complete in all respect shall be installed on PCC plate form of size L= 2000mm x 800mm x 600mm to be constructed on grand with cement concrete 1:2:4 duly plastered with cement and pained white with two coats of exterior emulsion paint after applying primer. The job also include writing of house numbers on meter compartment as per requirement at site &amp; termination of the following cables</p>					

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

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S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
	<p><b>Incoming</b> (1) 3½ x 240 sq.mm PVC/ XLPE insulated Aluminium conductor cable = 1 No</p> <p><b>Outgoing</b> 4 x 10 sq.mm PVC insulated unmarred copper Cable = 10 Nos</p> <p><b>COMMON SERVICES PANEL.</b></p>					
43	<p>Design &amp; Fabrication of cubical type, indoor type, singledoor, Floor mounted, fixed type, free standing single front, dust proof &amp; compartmentalized Common Service Panel made out of M.S. CRC Sheet 14G/16G &amp; Base frame 50X50X5MM, duly painted with Siemens Grey Powder Coated Paint as per specification Approximate Size (H) 1850MM X (W) 1100MM X (D) 300MM. The Compartmentalized panel shall have the following provision:</p> <p><b>Incomers:</b></p> <p><b>Incomer from Energy meter-MCCB 4 pole 250 AMP 16 KA, 3 Phase, 415 volts 50 Hz</b></p> <p>Bus Bar: 250 AMP 4 strip as per design current density of Aluminium bus bar shall</p>	1	Nos.	Each	1,92,005.00	

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



S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
	be 1mm X 1mm= 1.0 AMP					
	Outgoing ( )					
	<b>Fire Fighting MCCB 63 AMP, 415 volts, 50 HZ 1 No.</b>				-	
	<b>Forced Ventilation Panel: MCCB 125 Amp, 16 KA 415 Volts 1 No.</b>				-	
	<b>Lifts MCB TP &amp; N 40 AMP, 415 volts, 50 HZ 5 Nos.</b>				-	
	<b>Common Area Lighting MCB TP &amp; N 40 AMP, 415 volts, 50 HZ 1 No.</b>				-	
	Digital voltmeter, Ammeter indicatory lamp with suitable protection.				-	
	Cable alley: suitable cable alley chambers shall be provided for entry of the following cables				-	
	<b>Incoming</b> 3½ x 240 sq.mm PVC/ XLPE insulated Aluminium conductor cable =1 No				-	
	<b>Outgoing</b> 4 x 10 sq.mm PVC insulated unarmred copper Cable = 8Nos				-	
	The job also include termination of existing earth and above cables for commissioning and testing of the panel				-	

EE-IV

EE-V (Elect.)

EE-VII (PH)

S. No.	Description of Items	Qty	Unit	Rate	Amount	Sub Head Total
44	Supply and Erection of 10 pair Krone for termination of incoming & outgoing cables. The junction box shall be grouted in wall/mounted on surface. The job also includes termination of 5 twin pair telephone cables.	10 Nos.	Each	451.00	4,510.00	
45	Supply and making end termination with copper lugs/thimbles for PVC insulated and PVC sheathed /XLPE power copper conductor cable of 1.1 KV of size 4x10 Sq.mm.	200 Nos.	Each	172.00	34,400.00	
					<b>4,00,02,558.00</b>	

*[Signature]*  
Executive Engineer-V(Elect.)  
Chandigarh Housing Board,  
Chandigarh

*[Signature]* EE-IV  
*[Signature]* EE-V(Elect.)  
*[Signature]* EE-VII(PH)



Mile stone Programmer (Minor Component i.e. Electrical(E&M)-E.I. Work)					
(In Physical Terms)					
S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start)	Amount to be withheld in case on non achievement of respective milestone
	1st Quarter.	During the quarter (DUs.)	Cumulative (DUs.)		
1	Wiring (Basements)	10	10	181 Days	0.03% of Tended Amount of composite work.
2	MCCB, MCB & DB'S	0	0		
3	Pipes, Cable Tarys, Earthing & Lightning Conductor	0	0		
4	Non-Scheduled Items	0	0		
2nd Quarter.					
1	Wiring	40	50	365 Days	0.10% of Tended Amount of composite work.
2	MCCB, MCB & DB'S	0	0		
3	Pipes, Cable Tarys, Earthing & Lightning Conductor	20	20		
4	Non-Scheduled Items	0	0		
3rd Quarter.					
1	Wiring	40	90	546 Days	0.13% of Tended Amount of composite work.
2	MCCB, MCB & DB'S	0	0		
3	Pipes, Cable Tarys, Earthing & Lightning Conductor	40	60		

Mile stone Programmer (Minor Component i.e. Electrical(E&M)-E.I. Work)					
(In Physical Terms)					
4	Non-Scheduled Items	0	0		
	4th Quarter.				
1	Wiring	10	100	730 Days	0.18% of Tended Amount of composite work.
2	MCCB, MCB & DB'S	100	100		
3	Pipes, Cable Tarys, Earthing & Lightning Conductor	40	100		
4	Non-Scheduled Items	100	100		



**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 equipments 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. To 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.



**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work – **Passenger Lift**

Schedule of Quantities for Electrical (E&M) work – **Passenger Lift**  
(Enclosed) which starts at page No. 227

**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 2020 with amendments upto date

vi)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
vii)	Estimated cost of Work Electrical(E& M) work – <b>Passenger Lift</b>	Rs.94,26,275/-
viii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
ix)	Performance Guarantee	5% of the <del>composite</del> tendered value
x)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OH.



materials and labour to cover all overheads and profit	
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2022) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge 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 at	As per Major Component Mile stone at Page No. 239
Time allowed for execution of work	24 Months
Authority to decide:	
(iv) Extension of time	Superintending Engineer in Charge of Major Component
(v) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(vi) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
Clause 5 Schedule of handing over of site	
Description	Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site	As per Major component



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.5.00 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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.		Executive Engineer in Charge of Major Component.
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		No
Clause 10 C		
Component of labour expressed as percent of value of work		Not applicable.
Clause 10 CC		Yes, Applicable
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
3.	Labour component	25%
4.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.		As per CPWD's specifications; Part-III-Lift & Escalators-2003 with up to date correction /amendments, relevant Indian Electricity Rules and as per directions of Engineer-in-charge.
Clause 12		
Authority to decide deviation upto 1.5		Tender Approving Authority



times of tendered amount.				
The deviation limit for construction work		100% for all the items		
Clause 16				
Competent authority for deciding reduced rates.		Superintending Engineer, incharge of Major component		
Clause 18				
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		Minor Component -Electrical (E & M) Works		
		Chase Making Machines		
		All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc.,		
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.				
Clause 19				
Clause 19 C		Rs. 1000/- penalty for each default		
Clause 19 D		Rs. 1000/- penalty for each default		
Clause 19 G		Rs. 1000/- penalty for each default		
Clause 19 K		Rs. 1000/- penalty for each default		
Clause 25				
Settlement of Dispute by Conciliation and Arbitration :		CEO, CHB (Conciliator)		
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
Qualification	Number (of Major +Minor component)			
Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer	Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable



**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical- Passenger Lift		
Sub Head	Description	Sub Head Total
I	Supply, installation, testing & commissioning of 13 passengers Lift complete as required.	94,26,275.00
	Total	94,26,275.00

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

**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK)**

**Electrical (E&M) Work-- Passenger Lift**

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
1	Supply, installation, testing & commissioning of 13 passengers (884 kgs.) Machine Room Less lift having contract speed of 1.0 mps serving different floors in the lift shaft and barrier free requirement as per appendix 7 of CPWD General specifications for Electrical works (Part-III- Lifts & Escalators), 2003 and as per detailed specifications mentioned below:-	5	Nos.	18,85,255.00	94,26,275.00
i)	Type & Capacity				
ii)	Speed				
iii)	Floors to be served				
iv)	Travel				
v)	Type of drive				
vi)	Driver Motor				
vii)	Floist way available				

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

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S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
viii)	Car Size	2.2 sqm (Approx.)			
ix)	Car and Hoist way entrance	Centre opening power way entrance operated horizontal/sliding doors in stainless steel scratch resistance Honeycomb/ Moon rock finish			
x)	Clear opening of doors	900mm (wide) x 2000mm (high)			
xi)	Door Operation	Automatic DC/AC V3F			
xii)	Car enclosures	Constructed out of stainless steel in scratch resistance, Honeycomb/Moonrock finish.			
xiii)	Control	Simplex full collective control with or without attendant.			
xiv)	Power	415 volts 3 phase, 50 Hertz A.C.			
xv)	Fan	1 No. with 300mm sweep suitably concealed behind the false ceiling with separate switch in car operating panel.			
xvi)	Flooring	Granite flooring with 16mm to 19mm thick granite stone.			
xvii)	Lighting	Diffused lighting in Car with suitable nos. of LED fittings Concealed by drop ceiling			

EE-IV

EE-V (E&C)

EE-VII (PH)

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S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
xviii)	Indicators	Digital Direction and Position Indicators in both car and at all landings.			
xix)	Specifications	CPWD specifications 2003 & National Building Code 2016			
xx)	Makes	OTIS/ KONE/ Mitsubishi/ Schneider/ Johnson,			
xxi)	Other Features	a) Battery Operated Emergency Light with rechargeable battery b) Battery Operated Emergency Alarm with rechargeable battery c) Adjustable Guide shoes d) Micro Movement LED based buttons e) System capable of withstanding +10% to -20% variation in supply voltage fluctuations f) Hands free press and speak intercom g) Steel items such as machine beams, door frame, sill angles, fascia plates, spring buffers h) Full height infrared safety curtain. i) Car Platform constructed out of cold rolled grain oriented formed sheet of steel. j) Fireman switch at main lobby k) Car false ceiling in stainless in plain finish. l) Pit Ladder			

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

5/25



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
	m) Full height car operating panel.				
	n) Automatic rescue device to automatically bring the elevator to a landing in case of power failure with SMF battery backup of 30 minutes.				
	o) BHP rating and make of Driver Motor				
	p) Controller Make and Model No.				
	q) Digital lift announcement system				
	r) All signal fixtures will be in stainless steel face plates in plain finish.				
	s) A handrail not less than 600mm long at 900mm above floor level is to be fixed on 3 sides.				
xxii)	Standard & Rules the complete list including testing Commissioning and safety provision shall confirm to various Indian standard and rules with upto date amendments as mention below:- 1. IS 14665 (Part 1 to 3) : 2000 2. IS 14665 (Part 5) : 1999 3. IS 4591 : 1908 4. IS 1735 : 1975 5. Bombay lifts Act. 6. Indian Electricity Rules 1956				

EE-IV *sey* EE-V (Elect.) EE-VII (PH)

*7/5*

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
xxiii)	To complete the job in all respects with providing and fixing guide rails, minor building works, scaffolding, putting into operation and final testing etc. as required.				
xxiv)	Providing and fixing of 0.5 HP water lifting pump of Crompton/ GEC/ Khaitan or equivalent as approved by the Engineer In-charge along with water level sensor for automatic switch ON/OFF the pump in the lift well to drain off water accumulated in the lift well. The water shall be disposed off on the surface outside the lift well with the 15mm dia GI pipe up to the length of 3 mitr.				
	Total				94,26,275.00

*[Signature]*  
 Executive Engineer-V (Elect.)  
 Chandigarh Housing Board  
 Chandigarh

*[Signature]*  
 EE-V (Elect.)  
 EE-VII (PH)



**Mile stone Programmer (Minor Component i.e. Electrical(E&M) Work-Passenger Lift)  
(In Physical Terms)**

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
	1st Quarter.	During the quarter (Block of 24 DUs)	Cumulative (Block of 24 DUs)		
1	Guide rail frame work	0	0	181 Days	0% of Tendered Amount of composite work.
2	Installation of Lift car & testing	0	0		
2nd Quarter.					
1	Guide rail frame work	0	0	365 Days	0% of Tendered Amount of composite work.
2	Installation of Lift car & testing	0	0		
3rd Quarter.					
1	Guide rail frame work	4	4	546 Days	0.02% of Tendered Amount of composite work.
2	Installation of Lift car & testing	0	0		
4th Quarter.					
1	Guide rail frame work	1	5	730 Days	0.07% of Tendered Amount of composite work.
2	Installation of Lift car & testing	5	5		

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

**Special conditions-Passenger Lifts:**

1. The firm shall finalize the manufacturer within one month after the receipt of allotment of work and immediately arrange the shop drawings from the manufacturer.
2. The material for installation of lifts shall be brought at site strictly in accordance with the fixed milestones and actual progress of work.
3. In general, work shall be carried out as per CPWD's specifications; Part-III-Lift & Escalators -2003 with up to date correction /amendments, relevant 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.
4. The firm shall ensure construction of lifts shaft well strictly as per CPWD specification and manufacturers requirement.
5. The firm shall supply type tests of all lift material from the manufacturer before dispatch.
6. Lifts shall be guaranteed for initial period of one year after handing over during which free maintenance and upkeep shall be provided by the manufacturer.



**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work- Solar Photovoltaic Power Plant

Schedule of Quantities for Electrical (E&M) work – Solar Photovoltaic Power Plant (Enclosed) which starts at page No. 240

**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 2020 with amendments upto date

xi)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
xii)	Estimated cost of Work Electrical(E& M) work – Solar Photovoltaic Power Plant	Rs.13,31,180/-
xiii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
xiv)	Performance Guarantee	5% of the <del>composite</del> tendered value
xv)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OIL.



materials and labour to cover all overheads and profit	
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2022) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge 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 at	As per Major Component Mile stone at Page No. <u>239</u>
Time allowed for execution of work	24 Months
Authority to decide:	
(vii) Extension of time	Superintending Engineer in Charge of Major Component
(viii) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(ix) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
Clause 5 Schedule of handing over of site	
Description	Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site	As per Major component



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.5.00 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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.		Executive Engineer in Charge of Major Component.
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		No
Clause 10 C		
Component of labour expressed as percent of value of work		Not applicable.
Clause 10 CC		
Yes, Applicable		
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
5.	Labour component	25%
6.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.		As per CPWD & MNRE guidelines/ specifications with up to date correction /amendments, Indian Electricity Rules and as per directions of Engineer-in-charge.
Clause 12		
Authority to decide deviation upto 1.5 times of tendered amount.		Tender Approving Authority



The deviation limit for construction work		100% for all the items		
Clause 16				
Competent authority for deciding reduced rates.		Superintending Engineer, incharge of Major component		
Clause 18				
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		Minor Component -Electrical (E & M) Works		
		Chase Making Machines		
		All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc.,		
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.				
Clause 19				
Clause 19 C		Rs. 1000/- penalty for each default		
Clause 19 D		Rs. 1000/- penalty for each default		
Clause 19 G		Rs. 1000/- penalty for each default		
Clause 19 K		Rs. 1000/- penalty for each default		
Clause 25				
Settlement of Dispute by Conciliation and Arbitration :		CEO, CHB (Conciliator)		
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
Qualification	Number (of Major +Minor component)			
Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer	Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i) Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable

**ABSTRACT OF COST**

**Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)**

Electrical- Solar Photovoltaic Power Plant		
Sub Head	Description	Sub Head Total
1	Supply, Installation, Testing and Commissioning Solar Photovoltaic Power Plant complete as required.	13,31,180.00
	Total	13,31,180.00

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



**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK)**

**Electrical (E&M)- Solar Photovoltaic Power Plant**

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
1	<p>Supply, Installation, Testing and Commissioning of on grid Solar Photovoltaic Power Plant conforming to MNRE specifications as amended, consisting of Mono/Poly Crystalline silicon solar cells, net metering facility, necessary protections, earthing, mounted on Aluminium/GI structure of suitable strength with following components complete as required:-</p> <p>a) Solar Photovoltaic Module of capacity 330 Wp or above, manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730-Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 16.5%. 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.</p> <p>b) Power Conditioning Unit (PCU) of 350-800 V DC Input voltage range and 400 V AC, three phase, 4 wire, 50Hz +/- 2.5 Hz, output voltage suitable to generate AC Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 degree C. The PCU shall adjust the voltage and frequency level to suit the</p>	20	kwp	66,559.00	13,31,180.00

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

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**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 106 2BHK Flats (Basement & S-5), for General Housing Scheme in Sector 53 Chandigarh. (Composite Works) (Post Qualification and Financial Bid Document)

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
	Grid Voltage Frequency. c) Data Monitoring System complete with accessories. d) Fixing of 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. e) Lightning and surge voltage protection. f) Connections & Interconnections by supplying & fixing required size XLPE insulated copper conductor 1.1 kV grade armoured power and control cables between solar modules, main power cable to grid supply PCU unit along with supplying & fixing of necessary channel/conduit lugs and other accessories etc. as required.				
	Total				13,31,180.00

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

  
EE-IV

  
EE-V (Elect.)

  
EE-VII (PH)



**Mile stone Programmer (Minor Component i.e. E&M Work-  
Solar Photovoltaic Power Plant)  
(In Physical Terms)**

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
	1st Quarter.	During the quarter (for 100 DUs)	Cumulative (for 100 DUs)		
1	Supply, Installation & testing of Solar Photovoltaic Power Plant	0	0	181 Days	0% of Tendered Amount of composite work.
	2nd Quarter.				
1	Supply, Installation & testing of Solar Photovoltaic Power Plant	0	0	365 Days	0% of Tendered Amount of composite work.
	3rd Quarter.				
1	Supply, Installation & testing of Solar Photovoltaic Power Plant	0	0	546 Days	0% of Tendered Amount of composite work.
	4th Quarter.				
1	Supply, Installation & testing of Solar Photovoltaic Power Plant	1	1	730 Days	0.01% of Tendered Amount of composite work.

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

**Special conditions-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 five years including which the agency will ensure upkeep of the system for initial one year after commissioning/ handing over.

2/25



**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work - **FIRE FIGHTING WORK**

Schedule of Quantities for Electrical (E&M) work - **FIRE FIGHTING WORK** (Enclosed) which starts at page No. 250

**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 2020 with amendments upto date

xvi)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
xvii)	Estimated cost of Work Electrical(E& M) work - <b>FIRE FIGHTING WORK</b>	Rs.61,17,370/-
xviii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
xix)	Performance Guarantee	5% of the <del>composite</del> tendered value
xx)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OIL

EE-IV

EE-V(Elect.)

EE-VII (PH)



materials and labour to cover all overheads and profit	
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2022) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge 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 at	As per Major Component Mile stone at Page No. 259-260
Time allowed for execution of work	24 Months
Authority to decide:	
(x) Extension of time	Superintending Engineer in Charge of Major Component
(xi) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(xii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
Clause 5 Schedule of handing over of site	
Description	Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site	As per Major component



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.5.00 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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.		Executive Engineer in Charge of Major Component.
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		No
Clause 10 C		
Component of labour expressed as percent of value of work		Not applicable.
Clause 10 CC		Yes, Applicable
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
7.	Labour component	25%
8.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.		CPWD's specifications; Part V Wet Riser & Sprinkler Systems – 2020 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
Clause 12		
Authority to decide deviation upto 1.5		Tender approving Authority

times of tendered amount.				
The deviation limit for construction work		100% for all the items		
Clause 16				
Competent authority for deciding reduced rates.		Superintending Engineer, incharge of Major component		
Clause 18				
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site		Minor Component -Electrical (E & M) Works		
		Chase Making Machines		
		All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc.,		
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.				
Clause 19				
Clause 19 C		Rs. 1000/- penalty for each default		
Clause 19 D		Rs. 1000/- penalty for each default		
Clause 19 G		Rs. 1000/- penalty for each default		
Clause 19 K		Rs. 1000/- penalty for each default		
Clause 25				
Settlement of Dispute by Conciliation and Arbitration :		CEO, CHB (Conciliator)		
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
Qualification	Number (of Major +Minor component)			
Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer	Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable

**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical (E&M)- FIRE FIGHTING WORK		
Sub Head	Description	Sub Head Total
I	Wet Riser System - Pumping Equipments	1,30,899.00
II	Hydrants System	11,76,749.00
III	Piping, Valves And Accessories	31,23,280.00
IV	Fire Extinguishers	5,70,290.00
V	Motor Control Panels	1,01,470.00
VI	Cable Tray, Cabling And Earthing	46,246.00
VII	Fire Alarm System	9,68,436.00
	Total	61,17,370.00

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



**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK).**

**Electrical (E&M) - FIRE FIGHTING WORK**

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	<b>SUB HEAD - 1 - (WET RISER SYSTEM - PUMPING EQUIPMENTS)</b>					<b>130899.00</b>
1	Supplying, installation, testing and commissioning of electric driven terrace pump suitable for automatic operation and consisting of following complete in all respects, as required: (Terrace Pump)					
a)	(a) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical conforming to IS: 1520					
b)	b) Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horizontal foot mounted type with Class-F insulation, conforming to IS-325.					
c)	M.S.fabricated common base plate, coupling, coupling guard, foundation bolts etc.as required.					

EE-IV

EE-V (Elect.)

EE-VII (PH)

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S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
d)	Suitable cement concrete foundation duly plastered and with anti vibration pads.	1	Set	1,11,015.00	1,11,015.00	
2	900 lpm at 35 m Head 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	Set	19,884.00	19,884.00	1176749.00
2.1	1.2 Meter high and 250 mm dia <b>SUB HEAD - II - (HYDRANTS SYSTEM)</b>	35	Set	6,691.00	2,34,185.00	
3	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 Stainless steel	70	Set	4,848.00	3,39,360.00	
4	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly board with GI wire, rivets etc. conforming to IS 636 (type-A) as required : Stainless Steel (Grade 304)					

EE-IV

EE-VI (Set)

EE-VII (PH)



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
5	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 : Stainless Steel (Grade 304)	35 Nos	Each	1,811.00	63,385.00	
6	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. (30m)	35 Set	Set	9,455.00	3,30,925.00	
7	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories :					
	Horizontal side wall sprinkler	4 Nos	Each	673.00	2,692.00	

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
8	<b>Pendent Sprinkler</b> Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required. 150mm dia	260 Nos	Each	569.00	1,47,940.00	
		2 Nos	Each	9,833.00	19,666.00	
9	<b>SITC of sprinkler test and drain valve</b> Supplying, Installation, Testing and Commissioning of Sprinkler test and drain valve with sight glass, test valve, union, drain valve etc of 25 mm dia size etc. complete as required.	2 Nos	Each	19,298.00	38,596.00	
	<b>SUB HEAD - III - (PIPING, VALVES AND ACCESSORIES)</b>					<b>3123280.00</b>
	SLIC of M.S. pipe on surface					
10	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required.					
	<b>150 mm dia</b>	293 Metre	Metre	3,896.00	11,41,528.00	
	100 mm dia	29 Metre	Metre	2,785.00	80,765.00	



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	80 mm dia	97 Metre	Metre	2,054.00	1,99,238.00	
	65 mm dia	65 Metre	Metre	1,759.00	1,14,335.00	
	<b>50 mm dia</b>	17 Metre	Metre	1,396.00	23,732.00	
	40 mm dia	10 Metre	Metre	1,127.00	11,270.00	
	32 mm dia	30 Metre	Metre	928.00	27,840.00	
	25 mm dia	803 Metre	Metre	810.00	6,50,430.00	
11	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 :					
	<b>150 mm dia</b>	24 Set	Set	9,766.00	2,34,384.00	
	80 mm dia	35 Set	Set	5,430.00	1,90,050.00	
12	Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc as required :					
	150 mm dia	2 Set	Set	19,385.00	38,770.00	
13	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :					
	25 mm nominal bore	35 Nos	Each	563.16	19,711.00	

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

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S. No.	Description Of Item	Qty.	Unit.	Rate (Rs.)	Amount	Sub Head Total
14	Providing & Fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required.	36 Nos	Each	1,487.00	53,532.00	
15	Supplying and fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926.	35 Nos	Each	964.00	33,740.00	
16	Providing and placing on terrace (at 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. Circular tank	25000	Per Litre	10.25	2,56,250.00	
17	Providing & fixing Auto Air vent for water supply risers, suitable for pressure not less than 15 Kg/Sq.cm. 25 mm nominal bore				-	
	<b>SUB HEAD - IV - (FIRE EXTINGUISHERS)</b>					
18	Supply, installation, testing and commissioning of ISI marked (IS 15683:2006) portable chemical fire extinguisher, water (gas pressure) type capacity 9 litres with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets as required as per	35 Nos	Each	1,363.00	47,705.00	570290.00
		35 Nos	Each	3,851.00	1,34,785.00	

EE-IV  
  
 EE-V (Elect.)

EE-VII (PH)



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
19	specifications. Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed conforming IS : 15683:2006	35 Nos	Each	8,973.00	3,14,055.00	
20	4.5kg capacity cylinder Supply, installation, testing and commissioning of ISI marked (IS:15683:2006) ABC type fire extinguisher, capacity 5 KG with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets as required as per specifications.	35 Nos	Each	3,470.00	1,21,450.00	
	<b>SUB HEAD - V - (MOTOR CONTROL PANELS)</b>					<b>101470.00</b>
	<b>Starter Panel for Fire Terrace Tank</b>					



**CHANDIGARH HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 100 2BHK flats (Basement & S+S), for General Housing Scheme in Sector 53 Chandigarh, (Composite Works) (Post Qualification and Financial Bid Document)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
21	Fabrication, Supplying, Installation, Testing & Commissioning of Electrical Fire Motor Control Panel of cubical construction, floor mounted type, fabricated out of 2mm. thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 9 tank treatment process, cable alley, interconnection with solid aluminium strip / single core PVC insulated FRLS copper conductor cable, having suitable mountings for switchgears and accessories and internal control & power wiring with suitable rating PVC insulated FRLS copper conductor, earth terminals, numbering etc. complete in all respects, suitable for operation on 415 V, 3 phase 50 HZ AC supply with enclosure protection class IP 67 body with 100 Amp aluminium bus bar etc complete as required.					
i)	Operation of Pump shall be controlled with the help of flow switch mounted in the fire pipe line.					
	<b>Incoming</b>					
a)	63 Amp 4 Pole 25 KA MCCB microprocessor based release for O/C,S/C and E/F protection.- 1 No.					

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

25





**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 100 2BHK Flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh. (Composite Work) (Post Qualification and Financial Bid Document)

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
b)	Digital Ammeter (0 - 63 A), 96 mm. sq. CT operated with inbuilt selector switch with 3 Nos. CT's of ratio 63/5 A, 1.5 VA burden and accuracy of class 1.0 - 1 No.				-	
c)	Digital Volt Meter (0- 500 V) 96 mm. sq. with inbuilt selector switch and control MCBs - 1 No.				-	
d)	Phase Indicating coloured LED (RYB) with control MCBs - 1 No.				-	
e)	Fully Automatic Star Delta Starter suitable for Fire Pump motor of minimum 20.0 HP and (as per the commendation of pump manufacturer) complete with over load protection, current sensing type single phase preventer complete with contactors, push button, indicators LED type Auto/manual selector switches all accessories and FRLS copper conductor wiring etc. as required - 1 No.				-	
	Fire panel as above	1	Set	1,01,470.00	1,01,470.00	
22	<b>SUB HEAD - VI - (CABLE TRAY, CABLING AND EARTHING) CABLES</b>				-	<b>46246.00</b>
	Supplying of XLPE insulated, PVC sheathed aluminium conductor 1.1 KV grade armoured U.G. Cable of following sizes on surface/in existing				-	

EE-IV *[Signature]* EE-VI (Ext.) EE-VII (PH)

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S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	cable tray duly clamped as required.					
	3 Core 6 Sqmm.	42 Metre	Metre	761.00	31,962.00	
23	Supplying and making termination with brass compression gland & Al. lugs for following sizes of XLPE insulated, PVC sheathed Al. conductor armoured cables of 1.1KV grade as required.					
	<b>3 Core 6 Sqmm.</b>	4 Set	Set	295.00	1,180.00	
24	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing along with the existing surface / recessed conduits / submain wiring / cable as required.	42 Metre	Metre	46.00	1,932.00	
25	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc, as required	42 Metre	Metre	266.00	11,172.00	
	<b>SUBHEAD VII (FIRE ALARM SYSTEM)</b>					<b>968436.00</b>
26	Supplying, installation, testing & commissioning of manual call boxes of MS construction in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	35 Nos	Each	517.00	18,095.00	

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

7.6



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
27	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in M.S. box (16 SWG) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	35 Nos	Each	986.00	34,510.00	
28	Supplying, installation, testing & commissioning sector panel suitable for following zones, complete with visual indications for short circuit, 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.					
29	Supplying, installation, testing & commissioning of fire fighter phone jack complete as required.	7 Nos	Each	13,273.00	92,911.00	
30	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	35 Nos	Each	1,744.00	61,040.00	

26

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	required.					
a)	2x1.5 sqmm fire survival armoured cable	560	Metre	391.00	2,18,960.00	
31	Providing and fixing weather proof lockable "FIRE HOSE" cabinet door of size not less than 1200mmx2100mm made out of MS sheet 1.6mm thick and MS angle 40mmx40mmx6mm complete with glass including necessary locking arrangement and shall be painted with one coat of primer and two coats of synthetic enamel paint of approved shade as required as per specifications. The door to be fixed on existing fire hydrant shaft with hold fasts making necessary repairs etc.	35	Nos	15,512.00	5,42,920.00	
	<b>TOTAL</b>				<b>61,17,370.00</b>	

Executive Engineer (Elect.)  
Chandigarh Housing Board  
Chandigarh



Mile stone Programmer (Minor Component i.e. Electrical (E&M) Work-Fire Fighting)					
(In Physical Terms)					
S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
	1st Quarter.	During the quarter (Block of 20 DUs)	Cumulative (Block of 20 DUs)		
1	Wet Riser System - Pumping Equipments	0	0	181 Days	0% of Tendered Amount of composite work.
2	Hydrants System	0	0		
3	Piping, Valves And Accessories	0	0		
4	Fire Extinguishers	0	0		
5	Motor Control Panels	0	0		
6	Cable Tray, Cabling And Earthing	0	0		
7	Fire Alarm System	0	0		
	2nd Quarter.				
1	Wet Riser System - Pumping Equipments	1	1	365 Days	0.01% of Tendered Amount of composite work.
2	Hydrants System	1	1		
3	Piping, Valves And Accessories	1	1		
4	Fire Extinguishers	0	0		
5	Motor Control Panels	0	0		
6	Cable Tray, Cabling And Earthing	0	0		
7	Fire Alarm System	0	0		

Mile stone Programmer (Minor Component i.e. Electrical (E&M) Work-Fire Fighting)					
	3rd Quarter.				
1	Wet Riser System - Pumping Equipments	2	3	546 Days	0.02% of Tended Amount of composite work.
2	Hydrants System	2	3		
3	Piping, Valves And Accessories	2	3		
4	Fire Extinguishers	0	0		
5	Motor Control Panels	0	0		
6	Cable Tray, Cabling And Earthing	0	0		
7	Fire Alarm System	2	2		
	4th Quarter.				
1	Wet Riser System - Pumping Equipments	2	5	730 Days	0.03% of Tended Amount
2	Hydrants System	2	5		
3	Piping, Valves And Accessories	2	5		
4	Fire Extinguishers	5	5		
5	Motor Control Panels	5	5		
6	Cable Tray, Cabling And Earthing	5	5		
7	Fire Alarm System	3	5		



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

**Special conditions- 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 – 2020 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



**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work – CCTV

Schedule of Quantities for Electrical (E&M) work – CCTV (Enclosed) which starts at page No.272

**SCHEDULE "D"**

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

**SCHEDULE "E"**

Reference to General Conditions of contract of 2020 with amendments upto date

xxi)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
xxii)	Estimated cost of Work Electrical(E& M) work – CCTV	Rs.13,00,379/-
xxiii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
xxiv)	Performance Guarantee	5% of the composite tendered value
xxv)	Security Deposit	2.5% of composite tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract  
GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.

**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
<b>Definitions</b>	
2(v) 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 overheads and profit	7.5% CP & 7.5 % OH.



2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2023) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge 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 at	As per Major Component Mile stone at Page No. <u>273</u>
Time allowed for execution of work	24 Months
Authority to decide:	
(xiii) Extension of time	Superintending Engineer in Charge of Major Component
(xiv) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(xv) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
Clause 5 Schedule of handing over of site	
Description	Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site	As per Major component
Clause 7	
Gross work to be done together with net	Rs.2.00 Lakh subject to one payment per



payment/ adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment.	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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.	Executive Engineer in Charge of Major Component.	
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable	No	
Clause 10 C		
Component of labour expressed as percent of value of work	Not applicable.	
Clause 10 CC		
	Yes, Applicable	
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
9.	Labour component	25%
10.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.	CPWD's general specification for Electrical Works Part-I Internal 2013 & Part-II (External) 1994, with up to date correction /amendments and as per directions of Engineer-in-charge.	
Clause 12		
Authority to decide deviation upto 1.5 times of tendered amount.	Tender Approving Authority	
The deviation limit for construction work	100% for all the items	



Clause 16	
Competent authority for deciding reduced rates.	Superintending Engineer, incharge of Major component
Clause 18	
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site	Minor Component -Electrical (E & M) Works Chase Making Machines. All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc..
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.	
Clause 19	
Clause 19 C	Rs. 1000/- penalty for each default
Clause 19 D	Rs. 1000/- penalty for each default
Clause 19 G	Rs. 1000/- penalty for each default
Clause 19 K	Rs. 1000/- penalty for each default
Clause 25	
Settlement of Dispute by Conciliation and Arbitration :	CEO, CHB (Conciliator)
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
Qualification	Number (of Major +Minor component)			
Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer	Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable

EE-IV


EE-V (Elect.)

EE-VII (PH)

**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical (E&M) Work- CCTV		
Sub Head	Description	Sub Head Total
I	Supply, Installation Testing and Commissioning of CCTV Camera complete in all respect as required.	13,00,379.00
	Total	13,00,379.00

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



**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK).**

**Electrical (E&M) Work- CCTV**

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
1	Supply, Installation Testing and Commissioning of 2MP HD Indoor Dome Camera, H264/H.265, DWDR,AWB,AGC,BLC,HLC with IR upto 30mtrs. , 2.8/3.6 mm fixed lens IP67,POE complete with required accessories as required at site to the entire satisfaction of the engineer-in-charge.	20 Nos	Each	7,218.00	1,44,360.00
2	Supply, Installation Testing and Commissioning of 2MP HD bullet Camera, H264/H.265, 30fps@2MP ,DWDR,AWB,AGC,BLC,HLC with IR upto 30mtrs., 2.8/3.6 mm fixed lens IP67,POE complete with required accessories as required at site to the entire satisfaction of the engineer-in-charge.	25 Nos	Each	8,633.00	2,15,825.00
3	Supply, Installation Testing and Commissioning of 2MP VF Bullet camera, H.264/ H.265, 30fps @ 2MP, WDR 120 Db, AWB, AGC, BLC, HLC, IR Range 60 Mtrs, 2.8" 13mm Motorized Vari-Focal Lens, IP67, IK10, POE, Power consumption < 12W, complete with required accessories as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	10,791.00	10,791.00

EEAN  
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S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
4	Supply, Installation, Testing and Commissioning of 64 Ch NVR, H.265 / H.264, Dual Output (HDMI/VGA), Quad Core Embedded Processor, 8 SATA HDE Slot upto 8 TB each, 4 nos. USB port, 1 eSATA port, 1 RS232, 1 RS485, complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	3,60,150.00	3,60,150.00
5	Supply, Installation, Testing and Commissioning of 24 port jack loaded panel complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	8,604.00	8,604.00
6	Supply, Installation, Testing and Commissioning of 24 port POE switch complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	33,759.00	33,759.00
7	Supply, laying, Testing and Commissioning of Cat-6 UTP patch cord 1 meter complete as required at site to the entire satisfaction of the engineer-in-charge.	45 Nos	Each	582.00	26,190.00
8	Supply, Installation, Testing and Commissioning of 42" LED with HDMI port and stand complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	56,873.00	56,873.00
9	Supply, laying, Testing and Commissioning of Cat-6 UTP unarmoured cable in under ground HDPE pipe including the cost of digging & back filling the trenches also including the cost of sand for couching and bricks complete as required at site to the entire satisfaction of the engineer-in-charge.	140 Metre	Metre	365.00	51,100.00



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
10	Supply, laying Testing and Commissioning of Cat-6 UTP unarmoured cable on existing cable tray / conduit complete as required at site to the entire satisfaction of the engineer-in-charge.	2000 Metre	Metre	66.00	1,32,000.00
11	Supply, Installation Testing and Commissioning of IP-66 Outdoor Junction Box with accessories for power supply complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	2,625.00	2,625.00
12	Supply, Installation Testing and Commissioning of 9U Network Rack with Accessories complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	5,687.00	5,687.00
13	Supply, Installation Testing and Commissioning of 32mm PVC Conduit with Accessories complete as required at site to the entire satisfaction of the engineer-in-charge.	100 Metre	Metre	109.00	10,900.00
14	Supply, Installation Testing and Commissioning of 25mm PVC Conduit with Accessories complete as required at site to the entire satisfaction of the engineer-in-charge.	400 Metre	Metre	70.00	28,000.00
15	Supply, Installation Testing and Commissioning of 25mm MS Conduit with Accessories complete as required at site to the entire satisfaction of the engineer-in-charge.	20 Metre	Metre	182.00	3,640.00
16	Supply, Installation Testing and Commissioning of 25mm PVC Flexible pipe including connection modules complete as required at site to the entire satisfaction of the engineer-in-charge.	10 Metre	Metre	41.00	410.00

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount
17	Supply, Installation Testing and Commissioning of 25mm MS Flexible Pipe including connection modules complete as required at site to the entire satisfaction of the engineer-in-charge.	5 Metre	Metre	131.00	655.00
18	Supply, Installation Testing and Commissioning of 600VA UPS with 10 Min Backup complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	4,666.00	4,666.00
19	Supply, Installation Testing and Commissioning of 5kVA UPS with 15 Min Backup complete as required at site to the entire satisfaction of the engineer-in-charge.	1 No.	Each	1,31,230.00	1,31,230.00
20	Supply, Installation Testing and Commissioning of all the above equipment and Set up for Control Room without furnitures and table complete as required at site to the entire satisfaction of the engineer-in-charge.	1 Set	Set	72,914.00	72,914.00
	<b>TOTAL</b>				<b>13,00,379.00</b>

*Am*  
Executive Engineer (Elect.)  
Chandigarh Housing Board  
Chandigarh

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EE-IV  
EE-VI (E) EE-VII (PH)



Mile stone Programmer (Minor Component i.e. Electrical(E&M) Work-CCTV)					
(In Physical Terms)					
S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start).	Amount to be withheld in case on non achievement of respective milestone.
	1st Quarter.	During the quarter (Block of 20 DUs)	Cumulative (Block of 20 DUs)		
1	Pipe & Cable work	0	0	181 Days	0% of Tendered Amount of composite work.
2	Installation of CCTV Cameras	0	0		
3	Installation of control room & testing	0	0		
2nd Quarter.					
1	Pipe & Cable work	0	0	365 Days	0% of Tendered Amount of composite work.
2	Installation of CCTV Cameras	0	0		
3	Installation of control room & testing	0	0		
3rd Quarter.					
1	Pipe & Cable work	3	3	546 Days	0% of Tendered Amount of composite work.
2	Installation of CCTV Cameras	0	0		
3	Installation of control room & testing	0	0		
4th Quarter.					
1	Pipe & Cable work	2	5	730 Days	0.01% of Tendered Amount of composite work.
2	Installation of CCTV Cameras	5	5		
3	Installation of control room & testing	5	5		

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

**Special conditions-CCTV**

1. The firm shall supply the detailed specifications of the manufacturer before procurement of all CCTV items.
2. The system shall be tested and commissioned after configuring all the cameras at the specific control room location.
3. The system shall be accepted only after successful working of CCTV cameras as per the requirement at site and to the satisfaction of the Engineer in charge.



**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work- **Pressurized Mechanical Ventilation System**

Schedule of Quantities for Electrical (E&M) work - **Pressurized Mechanical Ventilation System** (Enclosed) which starts at page No. 284

**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 2020 with amendments upto date

xxvi)	Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
xxvii)	Estimated cost of Work Electrical(E& M) work – <b>Pressurized Mechanical Ventilation System</b>	Rs.64,90,863/-
xxviii)	Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
xxix)	Performance Guarantee	5% of the <del>composite</del> tendered value
xxx)	Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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 overheads and profit	7.5% CP & 7.5 % OH.
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2024) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of 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, incharge of Major component
Clause 5	
Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stones) as per table given at	As per Major Component Mile stone at Page No. <b>296</b>
Time allowed for execution of work	24 Months
Authority to decide:	
(xvi) Extension of time	Superintending Engineer in Charge of Major Component
(xvii) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(xviii) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component



Clause 5 Schedule of handing over of site		
Description		Time Period for handing over reckoned from date of issue of letter of intent.
Complete Site		As per Major component
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.5.00 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 8A		
Authority to decide compensation on account, if Contractor fails to submit completion plans.		Executive Engineer in Charge of Major Component.
Clause 10 A		
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:-		
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)		
Whether Clause 10 B (ii) shall be Applicable		No
Clause 10 C		
Component of labour expressed as percent of value of work		Not applicable.
Clause 10 CC		
		Yes, Applicable
S. No.	Relevant component of material/ Labour for price escalation.	Percentage of total value of work
11.	Labour component	25%
12.	E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11		
Specification to be followed for execution of work.		CPWD's general specification for Electrical Works Part-I Internal 2013 & Part-II (External) 1994, Part V Wet Riser & Sprinkler



	Systems – 2020 with up to date correction /amendments, relevant IE rules, and as per directions of Engineer-in-charge. For electrical panels, CPWD General Specifications for Electrical Works Part – IV shall be applicable.			
Clause 12	Authority to decide deviation upto 1.5 times of tendered amount.			
	Tender Approving Authority			
	The deviation limit for construction work			
	100% for all the items			
Clause 16	Competent authority for deciding reduced rates.			
	Superintending Engineer, incharge of Major component			
Clause 18	List of mandatory machinery, Tools & Plants to be deployed by the contractor at site			
	Minor Component -Electrical (E & M) Works			
	Chase Making Machines			
	All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc..			
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.				
Clause 19	Clause 19 C			
	Rs. 1000/- penalty for each default			
	Clause 19 D			
	Rs. 1000/- penalty for each default			
	Clause 19 G			
	Rs. 1000/- penalty for each default			
	Clause 19 K			
	Rs. 1000/- penalty for each default			
Clause 25	Settlement of Dispute by Conciliation and Arbitration :			
	CEO, CHB (Conciliator)			
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
Qualification	Number (of Major +Minor component)			
Graduate Engineer	1 of major component	2 or 5 respectively	Project Manager-cum	Rs. 15,000/- (Rs. Fifteen thousand) per month per



or Diploma Engineer		planning/quality / Site/billing Engineer	person
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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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly.
Clause 38	Not applicable

**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical (E&M) work- Pressurized Mechanical Ventilation System		
Sub Head	Description	Sub Head Total
A	Ventilation Equipment	11,68,648.00
B	Air Distribution Work	25,98,446.00
C	Electrical Work	27,23,769.00
	Total	64,90,863.00

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



**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK).**

**Electrical (E&M) Work- Pressurized Mechanical Ventilation System**

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	<b>SUBHEAD - 'A' VENTILATION EQUIPMENT</b>					<b>1168648.00</b>
	<b>BASEMENT VENTILATION</b>					
1	Supply, installation, testing and commissioning of Ceiling hung axial flow type <b>supply air fan for ventilation</b> of following capacity with powder coated GSS casing and aluminium alloy impellers with high efficiency aero-foil sections, blades, the impeller directly driven by TEFC induction motor (EFF-2) and 'F' class insulation suitable for 3 Phase, 50 Hz, 415±10% Volt, ac supply. Suitable capacity of TP isolator with M.S enclosure box complete as required and as per specifications. Fans should be AMCA certified for air and sound performance & should be statically & dynamically balanced upto G 2.5 as per ISO 1940 & AMCA 204/3 standard. The sound pressure should not exceed 80 db(A) at a distance of 3 Mts. Fan should be complete with all accessories including canvas connection, vibration isolators, gravity louvers as specified in the					

EE-IV EE-V (E&M) EE-VI (PH)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	specification.					
	4000 CFM/20 mm WC static	8 Nos.	Each	38,763.00	3,10,104.00	
2	Supply, installation, testing and commissioning of <b>Ceiling hung axial flow type exhaust air fan for basement ventilation</b> of following capacity with powder coated GSS casing and aluminium alloy impellers with high efficiency aero-foil sections, blades, the impeller directly driven by TEFC induction motor (EFF- 2) and 'H' class insulation suitable for 3 Phase, 50 Hz, 415±10% Volt, ac supply, suitable capacity of TP isolator with M.S enclosure box complete as required and as per specifications. Fans should be AMCA certified for air & sound performance & should be statically & dynamically balanced upto G 2.5 as per ISO 1940 & AMCA 204/3 standard. The sound pressure should not exceed 80 db(A) at a distance of 3 Mts. Fan and Motor for Fire exhaust fans shall be suitable for operation at minimum 250 deg C for 2 hrs. Fan should be complete with all accessories including canvas connection, vibration isolators, gravity louvers as specified in the specification.	8 Nos.	Each	43,488.00	3,47,904.00	
	4800 CFM/20 mm WC static					
	<b>PRESSURIZATION</b>					

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

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S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
3	Supply, installation, testing and commissioning of <b>ceiling hung/ floor mounted Axial flow type supply air fans</b> of following capacity with powder coated GSS casing and aluminium alloy impellers with high efficiency aero-foil sections, blades, the impeller directly driven by TEFC induction motor (efficiency 2) and "F" class insulation suitable for 3 Phase, 50 Hz, 415±10% Volt, AC supply complete as required and as per specifications. Fan should be statically & dynamically balanced & AMCA certified. Suitable capacity of TP isolator with M.S enclosure box complete as required and fan should be complete with all accessories including canvas connection, vibration isolators, gravity louvers as specified in the specification.	10 Nos.	Each	45,643.00	4,56,430.00	
4	Supplying, installation, testing & commissioning of <b>Propeller</b> type exhaust air fans, suitable for following capacities complete with electric motor suitable for operation on 220 V ± 10%, 50 Hz, 1 phase AC supply fitted with speed regulator, mountings, frames, louvers and bird screen etc. of the following capacities.	5 Nos.	Each	10,842.00	54,210.00	
	450mm dia-Lift Machine Room					

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

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S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	<b>SUBHEAD - 'B' AIR DISTRIBUTION WORK</b>					<b>2598446.00</b>
5	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.					
	Thickness 0.63 mm sheet	1165 Sqm	Sqm	1,177.00	13,71,205.00	
	Thickness 0.80 mm sheet	415 Sqm	Sqm	1,376.00	5,71,040.00	
	Thickness 1.25 mm sheet	85 Sqm	Sqm	2,001.00	1,70,085.00	
6	Supply, 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 etc. as per approved drawings and specifications of following sheet thickness complete as required.					
	Thickness 0.63 mm sheet	115 Sqm	Sqm	1,153.00	1,32,595.00	
	Thickness 0.80 mm sheet	40 Sqm	Sqm	1,341.00	53,640.00	
	Thickness 1.25 mm sheet	10 Sqm	Sqm	1,954.00	19,540.00	

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

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S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
7	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications.	9 Sqm	Sqm	9,923.00	89,307.00	
8	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required.	6 Sqm	Sqm	6,441.00	38,646.00	
9	Supply, installation & testing of <b>GI back draught dampers</b> (16 G Blade & Frame) similar construction to gravity louvers (for Basement fans- fire case as specified in the drawing.) , provided with suitable links to prevent the back pressure of air.	4.0 Sqm	Sqm	7,269.00	29,076.00	
10	Supply, installation, testing and commissioning of <b>fresh air intake section</b> comprising of powder coated extruded Aluminium louvers with bird screen as required.	9.5 sqm	sqm	7,707.00	73,216.50	
11	Supply, installation, testing and commissioning of <b>Exhaust air section</b> comprising of powder coated extruded Aluminium louvers with bird screen as required.	6.5 sqm	sqm	7,707.00	50,095.50	
	<b>SUBHEAD - 'C' ELECTRICAL WORK</b>				-	<b>2723769.00</b>
	<b>MAIN VENTILATION PANEL</b>				-	

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

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S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
12	Supplying, assembling, erecting, connecting, testing and commissioning of dust, damp and vermin proof free floor standing factory built sheet steel enclosed non-draw out modular type Ventilation Panel fabricated out of 2.0 mm thick CRCA sheet hinged doors of 1.6mm thick CRCA sheet, duly painted complete with earth bus, aluminium bus bar, numbering & sign writing, interconnection & including the cost of connection through bus bar / copper conductor flexible connection with necessary interlocking with existing panel as shown in drawing as per specification and mounted with the followings. Including central wiring with 1.5sqmm. & 2.5sqmm. PVC insulated FRLS copper conductor S/C cable for voltage & current respectively, cable alleys, cable gland plates in two half, etc. necessary metering protections & indications etc. complete as required.				-	
	<b>MAIN VENTILATION PANEL-2(FOR 2 BHK TOWER)</b>				-	
	<b>Incoming:</b>				-	

EE-IV *[Signature]* EE-V(Exec.) *[Signature]* EE-VII(PH) *[Signature]*

*[Handwritten mark]*





**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 100 2BHK Flats (Basement & S-5), for General  
Housing Scheme in Sector-53 Chandigarh. (Composite Work) (Post  
Qualification and Financial Bid Document)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	1 No. of 200 Amp 4P MCCB of 35 kA (Ics=Icu) Breaking capacity Micro-processor based release with On Indicating Lamp with 2A SP MCB back-up.				-	
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF, KVAH, KWH etc. with 3 Nos. current transformers of 250/5A ratio, 1.5 VA Class-1.0 metering.				-	
	1 Set of phase indicating lamp with 2Amps SP MCB back-up.				-	
	<b>Bus Bar</b>				-	
	250 Amp., 1P A.I. Bus Bar				-	
	<b>Outgoings:</b>				-	
	160Amp TPN,35 kA MCCB -2 Nos.				-	
	63Amp TPN,35 kA MCCB -3 Nos.				-	
	<b>MAIN VENTILATION PANEL-2 (FOR 2 BHK TOWER) as Describe above and Shown in SLD.</b>	1	Nos.	1,74,072.00	1,74,072.00	
	<b>VENTILATION PANELS</b>				-	

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S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
13	Supplying, assembling, erecting, connecting, testing and commissioning of dust, damp and vermin proof free floor standing factory built sheet steel enclosed non-draw out modular type Ventilation Panel fabricated out of 2.0 mm thick CRCA sheet hinged doors of 1.6mm thick CRCA sheet, duly painted complete with earth bus, aluminium bus bar, numbering & sign writing, interconnection & including the cost of connection through bus bar / copper conductor flexible connection with necessary interlocking with existing panel as shown in drawing as per specification and mounted with the following: including control wiring with 1.5sqmm. & 2.5sqmm. PVC insulated FRLS copper conductor S/C cable for voltage & current respectively, cable alleys, cable gland plates in two half, etc. necessary metering protections & indications etc. complete as required. (Each starter should have interlocking facilities including auto manual switch, NO/NC contacts for automatic operation of fan in case of fire).					
	<b>VENTILATION PANEL-3&amp;4 (LOCATION :- BASEMENT FLOOR 2-BHK TOWER)</b>					
	Incoming:					

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





**CHANDIGARH  
HOUSING BOARD**

A Scheme under Comprehensive Urban Restructuring

Construction of 100 2BHK flats (Basement & Sr-5), for General Housing Scheme in Sector 53 Chandigarh. (Composite Work) (Post Qualification and Financial Bid Document)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	1 No. of 63 Amp 4P MCCB of 35 kA (Ics=1cu) Breaking capacity Micro-processor based release with On Indicating Lamp with 2A SP MCB back-up.				-	
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF, KVAH, KWH etc. with 3 Nos. current transformers of 63/5A ratio, 15 VA Class-1.0 metering.				-	
	1 Set of phase indicating lamp with 2Amps SP MCB back-up.				-	
	<b>Bus Bar</b>				-	
	200Amp., TP Al. Bus Bar				-	
	<b>Outgoings:</b>				-	
	16Amp TP, 35 kA MCCB - 11 Nos.				-	
	16 Amp TP Contactor - 11 Nos.				-	
	<b>VENTILATION PANEL-3&amp;4 (LOCATION :- BASEMENT FLOOR 2-BHK TOWER) as Describe above and Shown in SLD.</b>	2 Nos.	Each	2,26,570	4,53,140.00	
	<b>PRESSURISATION PANELS</b>				-	

EE-V

EE-V (Exec)

EE-VII (PH)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
14	Supplying, assembling, erecting, connecting, testing and commissioning of dust, damp and vermin proof free floor standing factory built sheet steel enclosed non-draw out modular type Ventilation Panel fabricated out of 2.0 mm thick CRCA sheet hinged doors of 1.6mm thick CRCA sheet, duly painted complete with earth bus, aluminium bus bar, numbering & sign writing, interconnection & including the cost of connection through bus bar / copper conductor flexible connection with necessary interlocking with existing panel as shown in drawing as per specification and mounted with the followings: including control wiring with 1.5sqmm. & 2.5sqmm. PVC insulated FRLS copper conductor S/C cable for voltage & current respectively, cable alleys, cable gland plates in two half, etc. necessary metering protections & indications etc. complete as required. ( Each starter should have interlocking facilities including auto manual switch, NO/NC contacts for automatic operation of fan in case of fire).					
	<b>PRESSURISATION PANEL-2 (LOCATION AT TERRACE -2 BHK TOWER)</b>					
	<b>Incoming:</b>					

EE-IV  
 EE-VI (ELECT.)  
 EE-VII (PH)

26





**CHANDIGARH  
HOUSING BOARD**  
A CHANDIGARH ADMINISTRATION UNDERTAKING

Construction of 100 2BHK Flats (Basement & S+S), for General  
Housing Scheme in Sector 53 Chandigarh. (Composite Work) (Post  
Qualification and Financial Bid Document)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	1 No. of 160 Amp 4P MCCB of 35 kA (Ics=Icu) Breaking capacity Micro-processor based release with On Indicating Lamp with 2A SP MCB back-up.				-	
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF, KVAH, KWH etc. with 3 Nos. current transformers of 160/5A ratio, 15 VA Class-1.0 metering.				-	
	1 Set of phase indicating lamp with 2Amps SP MCB back-up.				-	
	<b>Bus Bar</b>				-	
	200 Amp. 1P AI. Bus Bar				-	
	<b>Outgoings:</b>				-	
	20Amp TP,35 kA MCCB -13 Nos.				-	
	20Amp TP Contactor -13 Nos.				-	
	<b>PRESSURISATION PANEL-2 (LOCATION AT TERRACE -2 BHK TOWER) as Describe above and shown in SLD</b>	1 Nos.	Each	2,79,068	2,79,068.00	
	<b>STARTER PANELS</b>				-	
15	Design, Manufacture, Supplying, loading & unloading assembling at site, installation, fixing on the position, testing & commissioning of 2.2kW DOL Starter, cubical type, dead front, 1.6mm thick	10 Nos.	Each	19,665.00	1,96,650.00	

AKKIV EF-V(Elect) EF-VII (PH)

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
16	sheet steel enclosed, wall mounted indoor use Starter Panel etc. with vermin proof hinged lockable doors compartment provide interconnections, earthing stud and powder coated. Each Starter feeder panel shall have 20A, TP MCB of 10 kA breaking capacity, along with TP contactors, overload relay and SPP as per Type-II co-ordination with necessary potential free auxiliary contact to operate starter ON/OFF on fire signal and for remote switch, Start/Stop Push buttons, Auto/Manual/off selector switch Complete as required.	16 Nos.	Each	18,206.00	2,91,296.00	

EE-V (E/ACT) EE-VII (PH)

95



S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	as required.					
	<b>SUPPLY AND LAYING OF LT CABLE)</b>					
17	Supply of the following 1100 volts grade, Aluminium/Copper conductor, XLPE insulated, PVC sheathed, steel armoured/Unarmoured cables as per IS 7098 Part-1 and as per technical specifications of this tender and directions of Engineer-in-Charge.					
	<b>4 CORES AL. CONDUCTOR</b>					
	25 sq.mm. Al Ar. XLPE cable	98 Metre	Metre	399.00	39,102.00	
	<b>3.5 CORES AL. CONDUCTOR</b>					
	95 sq.mm. Al Ar. XLPE cable	30 Metre	Metre	1,050.00	31,500.00	
	120 sq.mm. Al Ar. XLPE cable	70 Metre	Metre	1,289.00	90,230.00	
	<b>4 CORES Cu. CONDUCTOR</b>					
	6 sq.mm. Cu. PVC Ar. cable	420 Metre	Metre	689.00	2,89,380.00	
	4 sq.mm. Cu. PVC Ar. Cable	305 Metre	Metre	487.00	1,48,535.00	
	<b>3 CORES Cu. CONDUCTOR</b>					
	6 sq.mm. Cu. PVC Ar. cable	75 Metre	Metre	535.00	40,125.00	
	4 sq.mm. Cu. PVC Ar. Cable	85 Metre	Metre	387.00	32,895.00	
	<b>2 CORES Cu. CONDUCTOR</b>					
	2.5 sq.mm. Cu. PVC Ar. cable	410 Metre	Metre	164.00	67,240.00	

IV  
 EE-V(P&EL)  
 EE-VII (PH)

5/5

S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
18	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on cable tray as required.				-	
	Upto 35 sq. mm (clamped with 1mm thick saddle)	1393	Metre	48.00	66,864.00	
	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	65	Metre	100.00	6,500.00	
	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	100	Metre	126.00	12,600.00	
	<b>MV CABLE END TERMINATIONS</b>				-	
	Supplying and making indoor 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.				-	
	4C X 25 sq. mm (28mm)	4	Nos.	343.00	1,372.00	
	3½C X 95 sq. mm (82mm)	2	Nos.	641.00	1,282.00	
	3½C X 120 sq. mm (32mm)	2	Nos.	668.00	1,336.00	
19	Supplying and making indoor end termination with brass compression gland and Cooper lugs for following size of PVC insulated and PVC sheathed / XLPE Copper conductor cable of 1.1 KV grade as required.				-	
	<b>2/3/3.5/4 CORES Cu. CABLE WITH Cu. LUGS</b>				-	

ELIV  
EE-VI (Act)  
EE-VII (PH)



S. No.	Description of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	6 sq. mm	20 Nos.	each	278.00	5,560.00	
	4 sq. mm	38 Nos.	each	244.00	9,272.00	
	2.5 sq. mm	6 Nos.	each	215.00	1,290.00	
	<b>CABLE TRAY</b>					
20	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5% in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.					
	100 mm tray, 2mm thick, 50mm collar	55 Metre	Metre	729.00	40,095.00	
	150 mm tray, 2mm thick, 50mm collar	60 Metre	Metre	781.00	46,860.00	
	300 mm tray, 2mm thick, 50mm collar	145 Metre	Metre	1,050.00	1,52,250.00	
	450 mm tray, 2mm thick, 50mm collar	55 Metre	Metre	1,444.00	79,420.00	
	600 mm. Width x 75mm. Depth x 2.0 mm. thickness.	85 Metre	Metre	1,951.00	1,65,835.00	
	<b>TOTAL</b>				<b>64,90,863.00</b>	

*[Signature]*  
Executive Engineer-V (Elect.)  
Chandigarh Housing Board  
Chandigarh

*[Signature]* EE-V (Elect.)  
*[Signature]* EE-VII (PH)

**Mile stone Programmer (Minor Component i.e. Electrical (E&M) Work- Pressurized Mechanical Ventilation System)**

(In Physical Terms)

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start)	Amount to be withheld in case on non achievement of respective milestone
	1st Quarter.	During the quarter (Block of 20 DUs)	Cumulative (Block of 20 DUs)		
1	Ventilation Equipment	0	0	181 Days	0% of Tendered Amount of composite work.
2	Air Distribution Work	0	0		
3	Electrical Work	0	0		
2nd Quarter.					
1	Ventilation Equipment	0	0	365 Days	0% of Tendered Amount of composite work.
2	Air Distribution Work	0	0		
3	Electrical Work	0	0		
3rd Quarter.					
1	Ventilation Equipment	3	3	546 Days	0.02% of Tendered Amount of composite work.
2	Air Distribution Work	3	3		
3	Electrical Work	0	0		
4th Quarter.					
1	Ventilation Equipment	2	5	730 Days	0.04% of Tendered Amount of composite work.
2	Air Distribution Work	2	5		
3	Electrical Work	5	5		



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

**Special conditions-Pressurized Mechanical Ventilation System**

1. All the fresh air /exhaust fans should of BEE Star rating and ISI marked.
2. The firm will supply the shop drawing of the system well before execution for approval.
3. The work shall be executed strictly accordingly to the relevant CPWD specifications, relevant 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.
4. Ventilator of lift shaft/Basement parking should be as per Fire Fighting Standard for which Clearance shall be arranged from Fire authorities also with Fire Fighting Work.

**PROFORMA OF SCHEDULES**

**SCHEDULE "A"**

Minor Component i.e Electrical (E&M) work – DG Set

Schedule of Quantities for Electrical (E&M) work – DG Set (Enclosed) which starts at page No. 307

**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 2020 with amendments upto date

xxxii) Name of Work	Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)
xxxii) Estimated cost of Work Electrical(E& M) work –DG Set)	Rs.71,94,791/-
xxxii) Earnest Money (for composite work)	As mentioned in Detail regarding Tendering Process.
xxxiv) Performance Guarantee	5% of the <del>composite</del> tendered value
xxxv) Security Deposit	2.5% of <del>composite</del> tendered value

**SCHEDULE "F"**

Reference to General Conditions of Contract	GCC 2020 with latest amendments issued up to the last day of the last date of submission of bid.
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**GENERAL RULES AND DIRECTIONS**

Officers inviting tender :-	Executive Engineer-IV 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 & 12.5	Refer Clause-12.
Definitions	
2(v) 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	7.5% CP & 7.5 % OH.



materials and labour to cover all overheads and profit	
2(xi) Standard Schedule of Rates	Delhi Schedule of Rates (DSR-E&M 2021) with correction slips issued up to the last day of the last date of submission of bid.
2(xii) Department	Chandigarh Housing Board, Chandigarh
2(xiii) Specifications	Latest CPWD Specifications and as specified in Tender Document.
9(ii) Standard CPWD Contract form	CPWD form 7 as modified & corrected up to last date of receipt of tender.
<b>Clause 1</b>	
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
<b>Clause 2</b>	
Authority for fixing compensation under clause-2	Superintending Engineer, incharge of Major component
<b>Clause 5</b>	
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	As per Major Component Mile stone at Page No. 312
Time allowed for execution of work	24 Months
Authority to decide:	
(xix) Extension of time	Superintending Engineer in Charge of Major Component
(xx) Rescheduling of mile stones	Superintending Engineer in Charge of Major Component
(xxi) Shifting of date of start in case of delay in handing over of site	Superintending Engineer in Charge of Major Component
<b>Clause 5 Schedule of handing over of site</b>	
Description	Time Period for handing over reckoned from date of issue of letter of intent.



Complete Site	As per Major component	
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.	
Clause 7A	Whether Clause 7A shall be applicable.	
Clause 8A	Authority to decide compensation on account, if Contractor fails to submit completion plans.	
Clause 10 A	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:-	
Sl. No.	Equipment	Numbers (Minimum)
Testing equipments as per CPWD specification as required.		
Clause 10 B (ii)	Whether Clause 10 B (ii) shall be Applicable	
Clause 10 C	Component of labour expressed as percent of value of work	
Clause 10 CC	S. No. Relevant component of material/ Labour for price escalation.	
	13. Labour component	25%
	14. E&M (Electrical & Mechanical) component	75%
	Total	100%
Clause 11	Specification to be followed for execution of work.	
Clause 12	CPWD's specifications; Part VII D.G. Sets - 2013 with up to date correction /amendments, relevant Indian Electricity Rules and as per directions of Engineer-in-charge.	



Authority to decide deviation upto 1.5 times of tendered amount.	Tender approving Authority		
The deviation limit for construction work Clause 16	100% for all the items		
Competent authority for deciding reduced rates. Clause 18	Superintending Engineer, incharge of Major component		
List of mandatory machinery, Tools & Plants to be deployed by the contractor at site	Minor Component -Electrical (E & M) Works		
	Chase Making Machines		
	All Electrical Tool & Plants, Safety equipments, High rise ladder, Crimping tool kit etc.,		
Note: The above listed T&P can be modified as per site requirement and direction of Engineer-in-Charge.			
Clause 19			
Clause 19 C	Rs. 1000/- penalty for each default		
Clause 19 D	Rs. 1000/- penalty for each default		
Clause 19 G	Rs. 1000/- penalty for each default		
Clause 19 K	Rs. 1000/- penalty for each default		
Clause 25			
Settlement of Dispute by Conciliation and Arbitration :	CEO, CHB (Conciliator)		
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
Qualification	Number (of Major +Minor component)		
Graduate Engineer or Diploma Engineer	1 of major component	2 or 5 respectively	Project Manager-cum planning/quality / Site/billing Engineer
			Rs. 15,000/- (Rs. Fifteen thousand) 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 34(i)	
Extent of GST payable by Contractor for Building and Construction works.	GST 18% Applicable. Any Increase/ decrease in the rate of GST as on the last date/ extended date of submission of tender will be adjusted accordingly
Clause 38	Not applicable



**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

Electrical (E&M) work- Pressurized Mechanical Ventilation System		
Sub Head	Description	Sub Head Total
A	Foundation	79,749.00
B	Equipment	70,98,380.00
C	Fire fighting	16,662.00
	Total	71,94,791.00

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

**SCHEDULE OF QUANTITIES FOR THE WORK: CONSTRUCTION OF 100 NOS. TWO BED ROOM (MIG) (BASEMENT & S+5) FLATS FOR GENERAL HOUSING SCHEME IN SECTOR-53, CHANDIGARH. (COMPOSITE WORK).**

**Electrical (E&M) Work- DG Set**

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
1	<b>Sub Head 'A' FOUNDATION</b> 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, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	22.22	cum	303.48	6,743.00	79749.00
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level ;				-	
3	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) 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	5.05	cum	6400.89	32,324.00	
		2.49	cum	7791.45	19,401.00	

EE-IV  
EE-V(E&M)  
EE-VII (PE)

2/2



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
4	15 mm cement plaster on the rough side of single or half brick wall of mix : 1:4 (1 cement: 4 fine sand)	46.00	Sqm	359.37	16,531.00	
5	Finishing walls with water proofing cement paint of required shade :				-	
	New work (Two or more coats applied @ 3.84 kg/10 sqm)	46.00	Sqm	103.26	4,750.00	
	<b>SUB HEAD 'B' EQUIPMENT</b>				-	<b>7098380.00</b>
6	Providing, installing, Testing and Commissioning of 'Silent Type' Diesel Generating set along with Alternator having Prime Power rating of 125KVA/100KW, 415 Volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 HZ, 3 phase system & for 0.85 Load factor and consisting of the following: <b>a) Diesel Engine:</b> Diesel engine 4 stroke water cooled, electric start 159 BHP at 1500 RPM suitable for above output of alternator at 40 Degree C, and conforming to BS 5514, BS 649, IS 10000, capable of taking 10% over loading for one hour after 12 hours of continuous operations. The engine will be fitted complete with all the required accessories.	4	No.	1465982.00	58,63,928.00	
	<b>b) Engine mounted Instrument Panel fitted with and having digital display for following:</b>				-	

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	(I) Start - Stop switch with key (II) Water temperature indication (III) Lubrication oil pressure indication (IV) Lubrication oil temperature indication (V) Battery charging indication (VI) RPM indication (VII) Over Speed indication (VIII) Low lub. Oil trip indicate				-	
	<b>e) Alternator :</b> Synchronous alternator rated at 125 KVA, 415 volts at 1500 RPM, 3 phase, 4 wire system 50 Hz Ac supply with 0.8 lagging power factor at 40 Degree C. The alternator shall be having SPDP enclosure, brushless, continuous duty, self exciting and self regulated through AVR conforming to IS: 4722/BS 2613 suitable for tropical conditions and with class H insulation.				-	
	<b>d) Base Frame &amp; foundation :</b> Both the engine and alternator shall be mounted on suitable base frame made of MS channel, coupled and aligned on a common channel iron fabricated Base Frame with pre-drilled holes with necessary reinforcement which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendation of				-	

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

525



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	manufacturer.				-	
	<b>e) Fuel Tank:</b> Daily service fuel tank of capacity for minimum 12 Hrs continuous running fabricated out of minimum 3mm thick M.S. sheet complete with all standard accessories and fuel piping between fuel tank and diesel engines with MS class 'C' pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications				-	
	<b>f) Exhaust System</b> Dry exhaust manifold with hospital exhaust silencer and catalytic converter.				-	
	<b>g) Starting system :</b> 12 V DC starting system comprising of starter motor; Voltage regulator and arrangement for initial excitation complete with 1 No.12 volts 100AH acid battery as per specifications				-	
	<b>h) Acoustic and weather proof enclosure</b> 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 as per specifications.				-	

*[Signature]*  
EE-IV EE-V (Elect.) EE-VII (PH)

926

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	DG sets shall meet all the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 771 (E) amended time to time and as per latest notification by the Government vide No. 595 dated 11.12.2013 effective from 1.4.2014 in respect of noise and emission norms. The DG sets shall also meet all other statutory requirements as notified by govt. from time to time.				-	
	The cost includes control wiring with 12C 2.5 Sq.mm copper cable from DG to Panel.				-	
	The Job includes carriage to site and complete installation, testing and commissioning at site with all M&P, cost of additional exhaust pipe if required 12 Volt battery and petty material involved to ensure full safety of the man and machine. The cost also includes two years warranty of DG Set which further includes free maintenance for initial two years after commissioning. The maintenance cost shall exclude running charges i.e. diesel, filters and engine oil etc.				-	
7	<b>AUTO MAINS FAILURE CUM METER PANEL FOR COMMON AREA SERVICES</b>	4	No.	308613.00	12,34,452.00	

EE-IV  
EE-VI (act.)  
EE-VII (PH)

525





**CHANDIGARH  
HOUSING BOARD**  
A CORPORATION ADMINISTERED UNDER THE COMPANIES ACT, 1956

Construction of 100 2BHK Flats (Basement & S+S), for General Housing Scheme in Sector 53 Chandigarh. (Composite Work) (Post Qualification and Financial Bid Document)

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	Designing, Supplying, Installation, testing & Commissioning of floor mounted cubical type L.T. Auto Mains Failure Cum Meter Panel both side open able doors suitable for 415 volt, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, & 3.0 mm thick for gland plates including cleaning & finishing complete with 7 tank process for powder coating in Siemens grey shade. Approximate size (H)1250mm x (W)1400mm x (D)500mm x (L)600mm				-	
	The panel shall be provided with the following switchgears for automatic Operation of DG Set:				-	
	Space for 1 No. 3phase KWH Energy Meter and C.T				-	
	Automatic Transfer Switch (ATS) O.L.,M.C.O.S 250AMP, 4 Pole 1 No.				-	
	MCCB 250A 4P 36KA TMR With O/L & S/C Protection				-	
	Current Transformer 250/5A, 10VA				-	
	Battery Charger 12Volt DC input 220Volt				-	

EE-TV

EE-V(Elect.)

EE-VII (PFD)

S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
	The panel shall include all the accessories involved to make the metering cum AMF panel functional i.e. Indicating lamps LED type RYB, control SPMCB 6A, U/V and O/V Relay, Auxiliary Relay AC 220Volt and Auxiliary Relay, DC 12Volt, On Delay Timer, Control Terminal Block, Spreader Link 250A 4P, RHOM Extension, DMF Meter, CT Shorting Link, Neutral Link.					
	Control Wiring with Copper Flexible Wire (Size of control wire shall be 2.5sq. Mm copper flexible for C.T Circuit & 1.0sq.mm for Control Wiring) with thimbles printed sleeves, tie & belt etc.					
	The Panel shall include the Cost of Neoprene Gasket, Door locks, Copper Flexible door earth, legend plates etc.					
	<b>Sub Head 'C' Fire Fighting</b>					<b>16662.00</b>
8	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed conforming IS : 15683:2006	1	Nos.	8973.00	8,973.00	
	4.5kg capacity cylinder		Each			

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

25



S. No.	Description Of Item	Qty.	Unit	Rate (Rs.)	Amount	Sub Head Total
9	Supply, installation, testing and commissioning of ISI marked (IS:15683:2006) portable chemical fire extinguisher, water (gas pressure) type capacity 9 litres with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets as required as per specifications.	1	Nos.	3851.00	3,851.00	
10	Providing of set of 4 Nos. 9.0 Litre capacity GI bucket painted in post office red colour with prior coat of red-oxide paint and written with white paint 'FIRE' and mounted on MS angle iron frame with bracket of appropriate size & capacity including sand filling etc.	1	Nos.	3838.00	3,838.00	
	<b>Total</b>				<b>71,94,791.00</b>	

*[Signature]*  
 Executive Engineer-V,  
 Chandigarh Housing Board,  
 Chandigarh

*[Signature]* EE-IV  
*[Signature]* EE-VI (FCI)  
*[Signature]* EE-VII (PH)

**Mile stone Programmer (Minor Component i.e. Electrical (E&M) Work-  
DG Set)**

(In Physical Terms)

S. No.	Description of Milestone (Physical)			Time allowed in Days (from date of start)	Amount to be withheld in case on non achievement of respective milestone
	1st Quarter.	During the quarter (Block of 20 DUs)	Cumulative (Block of 20 DUs)		
1	DG set foundation	0	0	181 Days	0% of Tendered Amount of composite work.
2	DG set Installation	0	0		
3	Installation of AMF Panel, Testing & Commissioning	0	0		
2nd Quarter.					
1	DG set foundation	0	0	365 Days	0% of Tendered Amount of composite work.
2	DG set Installation	0	0		
3	Installation of AMF Panel, Testing & Commissioning	0	0		
3rd Quarter.					
1	DG set foundation	5	5	546 Days	0.01% of Tendered Amount of composite work.
2	DG set Installation	0	0		
3	Installation of AMF Panel, Testing & Commissioning	0	0		
4th Quarter.					
1	DG set foundation	0	0	730 Days	0.06% of Tendered Amount of composite work.
2	DG set Installation	5	5		
3	Installation of AMF Panel, Testing & Commissioning	5	5		



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

Special conditions- DG sets


1. The firm shall finalize the DG set manufacturer within 6 months of the allotment of work and provided shop drawings of DG sets and allotted Electrical Panels.
2. In general, work shall be carried out as per CPWD's specifications: Part VII D.G. Sets - 2013 with up to date correction /amendments, relevant 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.
3. The DG sets shall be tested for 8 hours at site for which necessary arrangement i.e. fuel, company engineer shall be made by the agency.
4. The Guarantee /Maintenance Manual of DG sets shall be provided by the agency.
5. The DG sets shall be procured strictly as per the milestones to ensure one year guarantee after testing and commissioning.

**ABSTRACT OF COST**

Name of Work: - Construction of 100 Nos. Two Bed Room (MIG) (Basement & S+5) Flats for General Housing Scheme in Sector-53, Chandigarh. (Composite work)

**Minor Component i.e. Electrical (E&M) Work**

Sub Head	Description	Sub Head Total
<b>Building Work :</b>	<b>Electrical &amp; Mechanical work</b>	
1.	E.I. Work	4,00,02,558.00
	<b>Specialized work</b>	
2.	Passenger Lift	94,26,275.00
3.	SPV System	13,31,180.00
4.	Fire Fighting & Fire Alarm	13,00,379.00
5.	CCTV	61,17,370.00
6.	Pressurized Mechanical Ventilation System	64,90,863.00
7.	D.G. Set	71,94,791.00
	<b>Total</b>	<b>7,18,63,416.00</b>

  
Executive Engineer-V,  
Chandigarh Housing Board,  
Chandigarh



**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) 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 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.

EE-IV

EE-V(Elect.)

EE-VII (PH)

15

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.



**LIST OF MATERIAL TO BE COVERED UNDER THE GUARANTEE FOR CIVIL COMPONENT:-**

Sr. No.	Description
1.	Water Proofing
2.	Vitrified, Ceramic, Glazed Tiles in Flooring
3.	Flush Door Shutters

**LIST OF MATERIAL TO BE COVERED UNDER THE GUARANTEE FOR PH COMPONENT: -**

Sr. No.	Description
<b>Brass Fittings</b>	
1.	Brass stop cock 15 mm/id
2.	Brass stop cock 20 mm/id
3.	Brass stop cock 25 mm/id
4.	Brass stop cock 32 mm/id
5.	Brass ball valve 15 mm/id
<b>CP Fittings</b>	
1.	CP Brass Angle Valve 15 mm i/d
2.	CP Brass Bottle trap 32 mm i/d
3.	CP Brass over head shower 15 mm i/d with shower arm
4.	CP Brass Basin Mixer 15 mm i/d
5.	CP Brass Waste 32 mm i/d
6.	CP Brass Health faucet
7.	CP Brass Sink Mixer 15 mm i/d
8.	CP Brass Single Lever Diverter ( Three way)

**LIST OF MATERIAL TO BE COVERED UNDER THE GUARANTEE FOR  
ELECTRICAL COMPONENT:-**

Sr. No.	Description
1.	MCB /RCCB/ MCCB/BDB's
2.	Modular Switches, Socket & Accessories
3.	Lifts
4.	Solar System- Photo Voltaic cells and Inverter Panel
5.	D G Sets
6.	Ventilation fans
7.	Fire Pump with motor
8.	CCTV Camera



**APPROVED MAKES OF VARIOUS ITEMS (WHEREVER PRESCRIBED) FOR USE UNDER THIS CONTRACT**

Sr. No.	Item, Work	BRANDS
1	Cement	ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & JK CEMENT
2	Reinforcement Steel (TMT)	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, SIKA, BAUCHEMIE, CICO, PIDILITE, BASF
5	Water proofing, compound (Crystalline)	ACCOPROOF, XYPEX, BASF, SIKA, PENETRON, KESHUN
6	Flush door Shutters/ Factory made Paneled door shutters	ARCHID, CENTURY, GREEN, MERINO, DURO
7	Hardware/ Fittings (SS)	DORMA, HETTICH, GODREJ, EVERITE, DORSET
8	Hardware/ Fittings (Aluminium) ISI Marked	CLASSIC, NULITE AND CROWN.
9	Premium arcylic emulsion paints	DULUX- WEATHER SHIELD, NEROLAC EXCEL, ASIAN APEX PAINTS, BERGER- WEATHER COAT
10	Wall Putty	BIRLA WALL CARE, JK WHITE, SAINT GOBAIN, FERROUS CRETE
11	Oil Bound washable distemper	ASIAN PAINTS, AKZONOBEL DULUX, BERGER, ICI, NEROLAC
12	Acrylic Distemper	BERGER- BISON, ASIAN-TRACTOR, DULUX-PROMISE, NEROLAC-BEAUTY
13	Wax Polish	RECKITT & COLMAN, ICI, MODI
14	Cement Primer (Interior)	BP WHITE (BERGER), DECOPRIME WT (ASIAN ) AKZONO BEL (DULUX) NEROLAC
	Cement Primer (Exterior)	ASIAN-TRUE CARE, BERGER-WEATHER COAT, NEROLAC-NEROLAC EXTERIOR



15	Steel/ Wood Primer	AKZONOBEL (DULUX) NEROLAC, ASIAN PAINTS, BERGER, JENSON & NICHOLSON
16	Synthetic Enamel paint	AKZONOBEL (DULUX), ASIAN (APCOLITE), KANSAI NEROLAC (SYNTHETIC ENAMEL), BERGER-LUXOL
17	Epoxy paint premium quality	KANSAI NEROLAC, ASIAN, AKZONOBEL (DULUX), FOSROC, ICI
18	Epoxy grouting mortar/ Admixtures	MBT, SIKA, STP
19	Float Glass	SAINT GOBAIN, MODIGUARD, ASAHI INDIA, GOLD PLUS.
20	Mirror	ATUL, BELGIUM GLASS HOUSE, SWASTIK
21	Concrete additive	SIKA, FOSROC, STP, CICO
22	Expansion/ Rebar/ Anchor Fastener	HILTI, FISCHER, DASH, ANCHOR, BOSCH, FISHER
23	Aluminum Sections	INDIAN ALUMINIUM CO., HINDUSTAN ALUMINIUM JINDAL, BHARUKA
24	Glass processors for toughened/ insulating/ bevelled glass etc.	GOLD PLUS, ALLIED GLASS, GSC, GURIND, MIRAGE GLASSES, T.L. VERMA & CO. & SHIVA TUFF
25	Tile Joint Filler	ROFF RAINBOW TILE MATE' OF ROFF CONSTRUCTION CHEMICALS PVT. LTD., WINSIL 20, SILICON SEALANT OF GE BAYER SILICON, MATRIX GROUP.
26	Silicon Sealants	G.E. BAYER DOW CORNING, WACKER
28	False Ceiling-Metal	SAINT GOBAIN, ARMSTRONG, HUNTER, DOUGLUS
29	Gyp Board	SAINT GOBAIN, LAFARGE, BORAL
30	Ceramic Tiles/ Glazed Tiles (Wall)	DIGITAL SERIES OF FIRST PREMIUM QUALITY OF KAJARIA, NITCO, RAK
31	Ceramic tiles( Floor)	ANTI-SKID OF FIRST PREMIUM QUALITY OF KAJARIA, NITCO, RAK
33	UPVC window shutters with frames	REHAU, FENESTA, NCL VEKA
34	Hardware accessories of UPVC windows	ASSABLOY, ROTO, SINGANIA



43	UPVC Pipe (ISI Marked)	ASTRAL, ASHIRWAD, AJAY, SUPREME, JAIN IRRIGATION (DULY ISI MARKED)
44	ACP Sheet	ALSTRONG, ALUCOBOND, ADU DÉCOR
45	Mortice Locks	DORMA, HETTICH, GODREJ, EVERITE, DORSET
46	GI section for Door Frames	TATA, JINDAL, APL APOLLO
47	Stainless Steel hollow section	TATA, JINDAL
48	Polymer Bonding agent	SIKA, PIDILITE, NITOBOND, CICO
49	White Vitreous Chinaware Counter Top Wash basin	JAQUAR (SOLO-SLS WHT 6601, HINDWARE(VIENNE OVAL-10038), PARRYWARE (CASCADE NXT-C0431)
50	White Vitreous Chinaware Wash basin	JAQUAR(FNS WHT 40801), HINDWARE(Neptune Cat No. 10072 )
51	EWC with Solid plastic seat Cover & Lid	JAQUAR(SOLO-SLS WHT 6851 S 300PP, HINDWARE(DOVE-92582), PARRYWARE (REEVE-C8900)
52	EWC with Solid plastic seat & Lid	JAQUAR (LYS WHT 38751S), HINDWARE(Rene) Cat No. 92088
53	Centrifugally Cast (Spun) iron pipes & fittings IS 3989 (ISI Marked)	Any reputed ISI Marked Make
54	HCI Gully Trap	NIF, NIC, NECO, HTM
55	CPVC Pipes (ISI Marked) & Fittings,	ASTRAL, ASHIRWAD, AJAY, SUPREME, JAIN Irrigation
56	GI Pipes (ISI Marked)	TATA, Jindal (Hissar)
57	GI Fittings (ISI Marked)	AVR, R, NVR
58	Brass fitting (ISI Marked) i.e. Brass stop cock, Brass ball valve	KPR, PRIMA or Any other reputed make.
59	CP Brass Fixtures/Fittings	JAQUAR (Lyrics), JAL (Nalini), PRIMA (AURA)
60	S.S. grating for Floor Trap	Chilly, Jayna, Jal, Viking
61	Salem Stainless Steel Sink (ISI Marked)	NEELKANTH, NIRALI, JAYNA, SILVER LINE (BLUESTAR SANITARY IND PVT LTD)
63	Precast Gully trap cover & frame with CHB logo	Any reputed Make
64	Polyethylene Water Storage Tanks (ISI Marked)	SINTEX, KAVERI, DIPLAST
65	Pig lead	Hindustan Zinc Limited, Vedanta, POCL



66	XLPE Cable : 11 KV , PVC insulated XLPE aluminium conductor armoured cables 1100V grade, Control Cable, Copper Conductor PVC Insulated Wires/ Stranded Flexible Wires (FRLS), Telephone Wires/ Telephone Cables, Communication Cables /FRLS Cables/Wires	Finolex, Polycab, RR Kabel , KEI
67	Modular Switches Socket Outlets and wiring Accessories with Moulded Cover Plate	ABB (Tvisha), Legrand (Arteor), Schneider (Livia), Gold Medal Air, North West (Veria) by Wipro
68	MCCB	ABB (Tmax), Schneider (NSX), L&T (Dsine) Siemens (3VL)
69	MCB/DBS/RCCB/SPD	ABB (SH 200 M), Legrand (DX3), Hager, Schneider (Acti-9) , Siemens (3VL), L&T
70	GI Pipe	TATA, Jindal Hisar
71	MS Pipe	TATA, JINDAL
72	MS Conduits (ISI Marked)	AKG, BEC
73	PVC Conduit (FRLS) & Accessories	Diplast, AKG, Precision, BEC Plast, Polypack
74	Electronic Digital Meter (A/V/PF/HZ/KWH) with LCD Display	Schneider, Siemens, Neptune, L&T
75	Cable Trays	Indeana, OBO BEC, Cooper
76	Steel Wire Rope Hangers & Supports	Hilti, Grippler, Dobby Grip (ZECO), Zip Clip, Birla
77	Fire Sealant	3 M India Ltd. , HILTI, Fischer
78	Butterfly Valve (ISI marked), NRVs and other Valves	ZOLOTO, Audco (L & T), Kirloskar, Advance, ATAM
79	Single Headed Hydrant Valves, Fire Brigade inlet, branch pipe & Shut off nozzle	Exflame, Newage, Life Guard , Minimax , Getech
80	20 mm dia rubber pipe for hose reel	Exflame, Newage, Life Guard , Minimax , Getech
81	Starters, switches, T.P. N switches	L & T, Siemens, Schneider
82	Pressure Switch	Indfoss, Switzer
83	Pressure Gauges	H-GURU , FEIBIG , General Instrument, Emerald.
84	Pumps	Mather & Platt, Kirloskar, Grundfos, KSB



85	Motor	ABB, Siemens, Kirloskar
86	Fire Extinguisher, RRL Hose, Hose Drum	Exflame, Newage, Life Guard, Minimax, Getech
87	Thermoplastic Hose Reel	Guards, Kasera, Maitras
88	Rubber Gaskets	CIC, Varuna
89	Flow Switch	Switzer, Dwyer, Siemens, Danfoss, Honeywell
90	Pipe Fittings	Unik, VS, Zoloto M
91	Sprinklers	Tyco, HD, G Tech
92	Flexible Coupling	Resistoflex, Easyflex
93	Diesel Engine	Cummins, Caterpillar, MTU
94	Alternator	Stamford, Marthon, Leroy Somer, Crompton
95	Battery	Exide, Luminous, Tata Power, Okaya
96	Lifts	Johnsons, Schindler, Mitsubhushi Corporation, Otis, KONE
97	Solar System	Greentek, Vega, Sunusa, Jackson
98	Solar Digital Inverters/PCUs	Fronius, Polycab, Delta, Jackson
99	Contactors	ABB-AF, L&T-MO, Schneider-LCID
100	Timers	ABB, L&T, Schneider
101	Double wall corrugated Duct (ISI Marked)	Duraline, Rex, Jain irrigation
102	Axial Flow fan	CRISTAL AIR, BALANCE AIR, HUMIDIN
103	Propeller Fan	MARATHON, CROMPTON, GREAVES, KHAITAN
104	G.I. sheets/ MS Sheet	Tata, Nippon, SAIL
105	Factory fabricated Ducts	DUSTECH, DUCTOFAB, ECO DUCT, ZECO
106	Grilles/Diffusers / VCD/ Louvers	CONAIR, DYANAMIC, MAPRO, TRI-STAR
107	Dumpers	CONAIR, DYANAMIC, MAPRO, TRI-STAR
108	Fasteners (Duct support system)/ Pipe Supports (Band Hanger)	HILTI, ZIP CLIP, BOSCH
109	CCTV Camera	Honeywell, Bosch, CP Plus, Samsung, Hikvision
110	Network Video Recorder (NVR)	Honeywell, Bosch, CP Plus, Samsung, Hikvision

**Construction of 100 2BHK flats (Basement & S+5), for General Housing Scheme in Sector 53 Chandigarh. (Composite Work).**

**General abstract of cost**

	Building work	(Rs.)
1	Civil work	40,18,83,814.00
2	P.H. work	3,15,04,637.00
	<b>Electrical &amp; Mechanical work</b>	
3	E.I. Work	4,00,02,558.00
	Passanger Lift	94,26,275.00
	SPV System	13,31,180.00
	CCTV	13,00,379.00
	Fire Fighting & Fire Alarm	61,17,370.00
	DG Set	71,94,791.00
	Pressurized Mechanical Ventilation System	64,90,863.00
	<b>Total</b>	<b>50,52,51,867.00</b>



**FINANCIAL BID FOR CONSTRUCTION OF 100 2BHK FLATS (BASEMENT & S+5), FOR GENERAL HOUSING SCHEME IN SECTOR 53 CHANDIGARH. (COMPOSITE WORK).**

Part	Description	Amount
1	Major work Component & Minor work Component (Composite amount (DNIT amount))	Rs. 50,52,51,867.00
I/we will charge ..... % (in figures) i.e ..... <sup>(a)*</sup> percent (in words) ..... <sup>(b)*</sup> (write above or below) on the total Composite cost of Rs 50,52,51,867/- (Rs Fifty Crore Fifty Two Lakh Fifty One Thousand Eight Hundred Sixty Seven Only). The overall amount of the Tender comes out to be Rs. _____ (in figures) (Rs. _____ <sup>(c)*</sup> (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 <b>either above or below</b>	
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)

Superintending Engineer-II,  
Chandigarh Housing Board,  
Chandigarh.

Executive Engineer IV,  
Chandigarh Housing Board,  
Chandigarh.

This NIT containing 325 pages as per Index amounting Rs. 50,52,51,867.00 (Rs Fifty crore fifty-two lac fifty-one thousand eight hundred sixty-seven Only) is hereby approved.

Chief Engineer  
Chandigarh Housing Board  
Chandigarh.

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