Centre for Development of Advanced Computing

A Scientific Society of Ministry of Electronics & Information Technology,
Government of India

Office Address: **Innovation Park, Panchavati, Pashan Road, Pune – 411008.**
Tel: +91-20-25868086 / 25503673-675, Fax: +91-20-25694004
www.cdac.in

TENDER FOR

"INTEGRATED CONSTRUCTION OF ACADEMIC BUILDING AT CHIKHALI CAMPUS, CDAC, PUNE"

Part-I / TECHNICAL BID

VOLUME: I/II

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LIST OF IMPORTANT DATES

Name of Work: **INTEGRATED CONSTRUCTION OF ACADEMIC BUILDING AT CHIKHALI CAMPUS, CDAC,PUNE.**

SL No	Description	Dates
01	Completion Period for work	24 Months
02	Mode of submission of tender	Online through https://eprocure.gov.in/eprocure/app
03	Date of Issue of Notice Inviting Bid	Date: - 25.01.2024
04	Period of availability of Bidding Documents From e-procurement portal	From: Date:- 25.01.2024 From 16:00Hrs
		To : Date :- 22.02.2024 Upto 15:00 Hrs
05	Deadline for Receiving Bids online	Upto: Date :- 22.02.2024 Upto 15:00 Hrs
06	Time, Date and place for opening online Technical Bids	Date :- 22.02.2024 On 15:30 Hrs
07	Clarification of queries (Online Mode)	Queries Receiving Up to 06.02.2024 till 15:00Hrs
08	Place of opening Financial bids	ONLINE thru CPPP.
09	Bid Validity	180 days from the date of opening of bid
10	Officer inviting Bids/Tender Inviting Authority	CDAC, Innovation Park, Panchavati, Pashan Road, Pune – 411008
12	Site Visit	Dt.30.01.2024 to Dt.06.02.2024 (10 A.M to 5:00 PM)
13	Pre Bid Meeting	Offline - 07/02/2024 @ 11.00 Hrs.

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NOTICE INVITING TENDER (NIT)

(E-Procurement)

Tender Reference No.: CDACP/LB-ABAC-PH1/23-24/400. **Date: 25.01.2024**

Introduction

C-DAC,Pune plans to build an Academic Building (G+3 ,Expandable to G + 5 floors) minimum GRIHA-3 Star with peripheral developments. The scope of work involves integrated development of a RCC framed structure building with internal and external development works, Horticulture, Electrical, Substation, Water supply, Sanitary, HVAC, Firefighting, Furniture etc with green building features.

Centre for Development of Advanced Computing (C-DAC) invites item rate tenders in electronic tendering system, for "Integrated Construction of academic building at Chikhali Campus, CDAC,Pune" .The tenders shall be available in website (https://eprocure.gov.in/eprocure/app) on dates as mentioned above, "List of Important Dates."

Contact information

Materials Management Group (MMG)
Centre for Development of Advanced Computing (C-DAC)
Innovation Park, Panchavati Pashan Road,
Pune - 411008, Maharashtra India
E-mail: mmg@cdac.in

Site Visit Contact Details:- Satyabrata Mishra **(**Jt. Director**) (**Office Landline No. 022 2550 3694/Mob:-7506939839)

Centre for Development of Advanced Computing **(C-DAC)** invites item rate tenders in electronic tendering system, for **"Integrated Construction of academic building at Chikhali Campus, CDAC,Pune" . The tenders shall be available in website** (https://eprocure.gov.in/eprocure/app) **on** dates as mentioned above, "List of Important Dates."

Tender document is also available for viewing on the "Notices and Tenders" link of the C-DAC website http://cdac.in. Bids to this tender will be accepted only through ONLINE mode through the website https://etenders.gov.in/eprocure/app No other mode of bid will be considered and accepted. For applying Online, the bidder should get itself registered at https://etenders.gov.in/eprocure/app .

Bid submission and System Requirement manual are also available on https://etenders.gov.in/eprocure/app

S.No.	Name of works	Approx. Estimated Cost (Rs)	Period of Completion (in months)	Cost of Tender Document (Non	Earnest Money Deposit (Rs.)
01	**Integrated Construction of Academic Building at**	Rs. 80 Cr.	24 Months	Rs. (10,000 + GST@18%= 11,800.00)	Rs. 0.80 Cr

PERIOD OF AVAILABILITY OF BIDDING DOCUMENTS
From e-procurement portal: - 25.01.2024 (16:00Hrs) upto 22.02.2024 up to15:00 Hrs
Deadline for Receiving Bids online: - 22.02.2024 up to 15:00 Hrs
Tender opening online: 22.02.2024 up to 15.30 Hrs

Intending bidders may download tender documents from e-procurement portal of our website http://https://etenders.gov.in/eprocure/app from the date & time mentioned above**.** The technical bid and bid documents duly filled and digitally signed in all respect may be submitted on-line through our e-portal within date and time (as per server clock) on **as mentioned under "List of Important Dates".**

C-DAC does not take any responsibility for the delay caused due to non-availability of Internet connection or traffic jam etc. for on-line bidding.

Cost of bid document for on-line bid for work is shown in the table above. The amount shall be deposited in the form of Demand draft in favour of **"Centre for Development of Advanced Computing" & Payable at Pune.**

Earnest Money Deposit shall be deposited in the form of Account payee Demand Draft, Banker's Cheque or Bank Guarantee for full amount from Nationalized/ Scheduled Pvt. bank in favour

of C-DAC Pune payable at Pune valid for 150 days from last day of submission in favour of C-DAC Limited.

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

Earnest Money Deposit and Tender Fee can be deposited Online through RTGS/NEFT – Details of Bank account no. with IFSC Code etc. as under. Payment by DD in favour of CDAC payable at Pune from last day of submission.

Name of the Firm	Centre For Development of Advanced Computing
Address	C-DAC Innovation Park, Panchavati, Pashan, Pune-411 008.
Bank Name	Bank of India
Branch Address	Pashan Road, Bhuvaneshwar Co-op Hosg Soc, Pune – 411 008
Bank Account No.	051610100009000
Type of Account	Saving A/c
MlCRCode	411013021
IFSCode	BKID0000516

The bidders are required to submit (a) Online Payment of bid security/earnest money should be made through RTGS/NEFT/UPI in Bank Name – Bank of India, A/c. No- 051610100009000, IFSC Code – BKID0000516 in favour of C-DAC payable at Pune and (b) Original bid security/earnest money in approved form or documentary evidence of deposited through RTGS/NEFT/UPI quoting UTR shall upload duly digitally signed by the person Authorized to sign the bid, failing which the bids will be declared non-responsive.

Names of the technically qualified bidders on the basis of information furnished in the check list and in "My Document" uploaded by concerned bidders after technical evaluation and verification will be displayed in the portal. The Technically qualified bidders will be intimated for the date, time and venue for opening of financial Bids opening. List of Financial comparison charts of bidders will be displayed in the portal. No separate intimation will be given for this, unless the above date is changed. In case of change of date, due intimation will be given online. No individual intimation will be given. In case, due to any reason the scheduled dates for opening of technical and financial parts as mentioned above are holidays or due to any reason the office remains closed or due to any acts of God it becomes unapproachable (solely at the discretion of tender inviting authority), the next working day will be applicable while the previous specified time will remain the same.

Centre for Development of Advanced Computing (**C-DAC)** reserves the right to reject or cancel any or all pre-qualification documents and bid document without assigning any reason's whatsoever.

Eligibility Criterias:-

The intending Bidder should fulfill the following minimum eligibility criteria: -

1. The bidder should be an entity registered in India for at least 10 years in the field of construction, before the date of publication of this tender document, under appropriate Indian Laws. Certificate for the same, issued by the competent authority should be submitted along with the bid
2. **PAN Card & GST Registration**: -Bidder must have valid PAN Card & GST Registration as on the last date of tender submission. The PAN card and GST registration must be in the name of Bidder only. (Submit Copies)
3. **EPF & ESIC Registration**: Agency must have valid EPF and ESIC registration as on the last date of tender submission. (Submit Copies)
4. **Registration:** Bidder must submit valid registration certificate of civil contractor in the name of the firm issued by any Central/ State Govt. Organization (CPWD/State PWD).The bidder shall submit a valid electrical contractor license issued in the name of the firm by the competent authority of the concerned PWD/State Government Authority where project is located.
5. **Turnover:** Average Annual Financial Turnover on construction works during the last three years, ending 31st March of the previous financial year i.e. 2022-23, should be at least Rs. 60 Crore. Turnover certificate duly certified by a Chartered Accountant along with UDIN issued by ICAI is also to be submitted. Applicant has to attach the Balance sheet along with profit & loss statement duly certified by Chartered Accountant for last three years. The turnover certificate and Balance Sheet must be of Bidder only. Supporting documents of holding and subsidiary company will not be considered.
6. **Profitability:** The applicant should be a profit (net) making firm and should not have incurred any loss in last three consecutive balance sheets, duly certified and audited by the Chartered Accountant. Document should be attached.
7. **Credit Facility:** Agency shall have Un-utilized credit facility amounting to 10% or bank solvency of 40% of Estimated cost (minimum) certified from Bank and the credit facility should not be older than 3(three) Months from the date of submission of tender.
8. **Joint Venture/Consortium**: Joint Ventures and Consortium are not permitted.

9. **Bid Capacity**: Agencies who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under: -

   Assessed available bid capacity = A x N x 2 - B

   N = Number of years rounded up to first decimal prescribed for completion of the subject contract.

   A = Maximum value of works executed in anyone year during last five years (up dated to the price level of current financial year with percentage stated in this PQ document).

   B = Value at current price level of existing commitments and ongoing works to be completed in the next 'N' years.

The Bidders are requested to furnish the existing commitments on Works under execution along with stipulated period for completion of remaining for each of the work should be furnished in an affidavit on non-judicial stamp paper of value of Rupees 100/- duly certified that the particulars furnished are correct as per the format of **Annexure-I**

10. **Work Experience**: Bidder should have the experience of One similar completed work costing not less than the amount equal to Rs.60 Crore during last 5 years ending last day of month previous to the one in which tenders are invited.

    Similar works mean:
    "Similar work" refers to a work involving Successfully completed "School/Educational Institute/R&D/Academic RCC framed structure building with internal and external development works, Horticulture, Electrical, Substation, Water supply, Sanitary, HVAC, Firefighting, Furniture etc. in any Central / State Govt. Departments / Central PSUs/ State PSU/ Central Autonomous bodies/ State Autonomous bodies/ City Development Authority/Municipal Corporation of City formed under any act by Central/State Government and published in Central/State Gazette. The bidder shall submit Completion Certificate(s) mentioning name, nature of work(s), value(s) of the job(s), date(s) of commencement, stipulated date(s) of completion and actual date(s) of completion duly certified by officer of level of Executive Engineer or higher level or equivalent along-with LOI(s)/W.O(s) from respective Owner(s)/Client(s).

    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 last date of receipt of applications for tenders.

11. The Bidder must have completed construction of at least any one Educational/Academic/ Administrative/R&D building with **GRIHA/SVAGRIHA Three-Star or more** Complied and certified during last 5 years ending last day of tender submission.

12. **Human Resource Strength**: -The firm should have at least 50 employees on firm direct payroll . All 50 employees should be employed with the bidder as on date of Bid publication. PF challans for such employees for last one month prior to month of bid publication need to be submitted. Bidder should submit certificate issued by authorized signatory or Head of Human resources of the bidder, on bidder's letter head and copies of valid PF challan in the name of said employees need to be submitted in support of this criteria.
13. **Technical Resource Strength**: -Bidder must have minimum Five (5) nos. of qualified B.E/B.Tech (Civil Engineers) employees and minimum Two (2) no. of qualified B.E/B.Tech (Electrical Engineer /Mechanical Engineer) professionals, with minimum five years' post qualification experience in Building Construction field ,employed in the bidder's payroll. All seven (7) employees should be employed with the bidder as on date of Bid publication. Copies of B.E/B.Tech Certificates along with PF challans for such employees for last month prior to month of bid publishing need to be submitted. Bidder should submit certificate issued by authorized signatory or Head of Human resources of the bidder, on bidder's letter head and copies of valid PF challan in the name of said employee in support of this condition

14. The firm should have office presence in Pune Area. Necessary documentary proof such as Electricity bill/water bill etc. in the name of firm showing address proof has to be submitted. Third party arrangement is not acceptable. Any rental agreement in lieu for office presence has to be registered agreement prior to the date of tender publishing.

15. Bidder has to submit the Site Visit report along-with Geotagging photographs of self-mentioning with GPS coordinate, date and time and submit the same in online technical bid document. Representatives of the firm are allowed with company ID cards during site visit. Site Visit is mandatory. The bidder has to visit the site to assess the Ground condition, transport conditions and working conditions at site on date as mentioned above and submit Site visit undertaking (**Annexure –II**).

16. The Bidder should not have been blacklisted or Debarred in any State Govt./Municipal Corporations/Central Govt./any State Govt. Organizations, Urban Local Body and/or its Undertaking company during last 03 years ending last day of the previous month of date of NIT. Bidder has to submit a notarized self-declaration with the bid in respect of the same that "He has not been reprimand in past 03 years for poor performance and also he has not been debarred by any of his client/ in any State Govt./Municipal Corporations/Central Govt./any State Govt. Organizations, Urban Local Body for poor performance, unprofessional/ slow work leading to cancellation of his ongoing assignment".

17. It is obligatory on part of the Bidder to sign, stamp and submit all pages of this document including any additions, changes, modifications, Pre-Bid meeting Minutes, addendums and amendments/corrigendum issued etc in technical bid.

Note:-

A. **C-DAC is free to get documents verified and agency shall have no objection to it. In case if it is found at any stage that the agency has made any false information will be disqualified and blacklisted.**

B. **Fraudulent Act:**
The Contractor shall submit all the genuine document with respect to its credential such as work experience, bank Guarantee and other documents to C-DAC to quality in the tender. The contractor agree that the contractor shall not indulge in any fraudulent activity and in any point of time including after being successful bidder, if any fraudulent act shall have been committed by the contractor then C-DAC shall have full rights to forfeit the EMD, Security deposit, performance Guarantee, whatsoever without any notice to the Contractor.

C. Interested bidders may contact the officials mentioned in the tender for site visit and/or for seeking any details regarding execution of proposed work.**Any corrigendum/addendum/errata in respect of the above tender shall be made available only at our official web site www.cdac.in and** https://eprocure.gov.in/eprocure/app

INSTRUCTIONS TO BIDDERS

General:

1. Qualification of the Bidder

1.1 All bidders shall provide Forms of Bid and Qualification information as necessary.

1.2 All bidders shall include the following information and upload documents on CPP portal with their bids, Qualification Information unless otherwise stated: -

(a) Undertaking in the letter head of the firm with duly sign and seal regarding correctness of the information furnished with bid documents shall upload duly digitally signed by the person Authorized to sign the bid.

(b) Undertaking in the letter head of the firm with duly sign and seal regarding past contractual performance shall upload duly digitally signed by the person Authorized to sign the bid.

(c) All Undertaking on the letter head of the firm with duly sign and seal shall upload duly digitally signed by the person Authorized to sign the bid

(d) Power of attorney of authorized signatory signing the bid shall upload duly digitally signed by the person Authorized to sign the bid.

(e) Letter of Transmittal on the letter head of the firm with duly sign and seal shall upload duly digitally signed by the person Authorized to sign the bid.

(f) Copies of original documents defining the constitution, place of registration, and principal place of business.

(g) Turnover for each of the last five years.

(h) Reports on the financial standing of the Bidder, such as profit and loss statements duly signed by auditors for the past five years;

(i) Copy of GST registration certificate and acknowledgement of upto date filed return.

(j) Copy of EPF registration certificate and latest EPF challan.

(k) All signed documentary proofs in support of all eligibility criterias.

1.3 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

(i) Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and / or record of submission of any false / fake document(s).

(ii) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

(iii) Participated in the previous bidding for the same work and had quoted unreasonably high or low bid prices and could not furnish rational justification for it to the C-DAC.

2. Cost of Bidding

2.1 **Preparation of Bids:**

The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the C-DAC will, in no case, be responsible or liable for those costs.

2.2 **Documents Comprising the Bid**

A- Technical Bid-

1) **EMD & Tender document cost**:- Scanned Copy of Demand draft drawn in favour of "C-DAC" payable at Pune towards **EMD & Tender document cost**. Or Online Payment in Bank of India(details as mentioned above on Page no. 07.)
2) **Declaration**
   a) Scanned copy of Affidavit by the bidder as per Performa. or All Undertaking on the letter head of the firm with duly sign and seal shall upload duly digitally signed by the person Authorized to sign the bid.
3) **Scanned copy of Power of attorney of authorised signatory signing the bid or Power of attorney of authorized signatory signing the bid shall upload duly digitally signed by the person Authorized to sign the bid.**
4) **In case of Non submission of Tender Fee and EMD, prospective bidder's bids will be summarily rejected.**
5) **All details as per proforma and documentary proof for eligibility criteria's .In case of non submission of all these documents, bid is liable to be rejected.**

B - Financial bid - (Finance Cover)

i) Financial/Commercial Bid shall be uploaded in BOQ format of CPPP.

ii) All cells/items has to be quoted compulsory. If any cell is found to be blank or quoted abnormally low, CDAC reserves the right to reject the bid.

C - My Document in Portal

Scanned copies in **Prescribed Formats and all supported document required as per all Annexures and Performa's given in tender document** to be attached in My Document" in pdf format file duly digitally signed by the bidder. Copy of GST registration certificate and acknowledgement of upto date filed return.

The tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modifications shall be rejected

NOTE: - a) All the documents should be digitally signed.

2.3 **Bid Validity**:-. The offer should be valid for 180 (One hundred Eighty) days from the last date of opening of tenders. In exceptional circumstances, prior to expiry of the original time limit, the C-DAC may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder will not be required or permitted to modify his bid, but will be required to extend the validity of his earnest money for a period of the extension.

2.4 **The Earnest Money may be forfeited**:

a) If the Bidder withdraws the Bid after bid opening (technical bid) during the period of Bid validity;

b) In the case of a successful Bidder, if the Bidder fails to furnish the required Performance Security & Sign the Agreement

c) The Bid without EMD shall be considered incomplete and summarily rejected. Need to submit the declaration form as per the performa XIII

3. Online Submission of Bids

3.1 **Bidding through E-Tendering System:**

(a) The bidding under this contract is electronic bid submission through website https://etenders.gov.in/eprocure/app Detailed guidelines for viewing bids and submission of online bids are given on the website. Any citizen or prospective bidder can logon to this website and view the Invitation for bids and can view the details of work for which the bid is invited. The prospective bidder can submit bids on line; however the bidder is required to have enrolment /registration in the web site and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token. The DSC can be obtained from any authorised certifying agencies. The bidder should register in the web site https://etenders.gov.in/eprocure/app using the relevant option available. Then the digital signature registration has to be done with the e-token, after logging into the site. After this the bidder can login the site through secured login by entering the password of the e-token & the user id/password chosen during registration. After getting the bid schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise, the bid will be rejected.

(b) The completed bid comprising of documents, should be uploaded on the website given above through e-tendering along with scanned copies of requisite certificates as are mentioned in different sections in the bidding document and scanned copy of bid security in case it is provided in the form of DD.

3.2 **Deadline for Submission of Bids**

(a) Complete Bids in two parts as mentioned above must be received on CPPP portal Online not later than the date and time indicated in the Bid Data Sheet **and also copy of online Payment of EMD, Cost of tender document, Affidavit as mentioned in NIT.**

(b) The C-DAC may extend the deadline for submission of bids by issuing an amendment in which case all rights and obligations of the C-DAC and the bidders, previously subject to the original deadline will then be subject to the new deadline.

3.3 **Modification/Withdrawal/Late Bids:**

(a) The electronic bidding system would not allow any late submission of bids after due date & time as per server time.

(b) Bidders may modify their bids by uploading their request for modification before the deadline for submission of bids. For this the bidder need not make any additional payment towards the cost of tender document. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. In on line system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. The bidders may withdraw his bid by uploading their request before the deadline for submission of bids, however, if the bid is withdrawn, the re-submission of the bid is not allowed.

(c) No bid shall be modified or withdrawn after the deadline of submission of bids.

(d) Withdrawal or modification of a bid between the deadline for submission of bids and the expiration of the original period of bid validity as mentioned elsewhere above or as extended pursuant to tender inviting authority's requirement may result in the forfeiture of the bid security.

4. Bid Opening and Evaluation: -

4.1 (a) The C-DAC inviting bids or its authorized representatives will open the bids online and this could be viewed by the bidders also online. In the event of the specified date for the opening of bids being declared a holiday for the C-DAC, the bids will be opened at the appointed time on the next working day.

(b) The file containing the Part I of the bid will be opened first.

(c) In all cases, the amount of bid security, cost of bid documents, processing fee for e-tender and validity of the bid shall be scrutinized. Thereafter, the bidders' name and such other details as the C-DAC may consider appropriate, will be notified as Part I bid opening summary by the authority inviting bids at the on line opening.

(d) Evaluation of Part I of bids with respect to **bid security, qualification information and other information furnished in Part I** of the bid, shall be taken up, and a list will be drawn up of the qualified bidders whose Part II of bids will be eligible for opening.

(e) The result of evaluation of Part I of the Bids shall be made public on e-procurement following which on next working day from the date of making public the result of evaluation of Part I of the Bids part II or the price bid of the qualified bidders will be opened.

(g) The C-DAC shall inform, the bidders, who have qualified during evaluation of Part I of bids, of the date, time of online opening of Part II of the bid, if the specified date of opening of financial bid is changed. In the event of the specified date being declared a holiday for the C-DAC, the bids will be opened at the appointed time and location on the next working day.

(h) Part II of bids of only these bidders will be opened online, who have qualified in Part I of the bid. The bidders' names, the Bid prices, the total amount of each bid, and such other details as the C-DAC may consider appropriate will be notified online by the C-DAC at the time of bid opening.

Financial proposal with any counter conditions or ambiguous remarks shall be rejected.

4.2 **Process to be Confidential**

Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the C-DAC's processing of bids or award decisions may result in the rejection of his/her Bid

Clarification of Bids and Contacting the C-DAC: -

(a) No Bidder shall contact the C-DAC on any matter relating to its bid from the time of the bid opening to the time the contract is awarded.

(b) Any attempt by the bidder to influence the C-DAC's bid evaluation, bid comparison or contract award decision may result in the rejection of his bid.

4.4 **Examination of Bids and Determination of Responsiveness**

(a) During the detailed evaluation of "Technical Bids", the C-DAC will determine whether each Bids (a) meets the eligibility and Qualifying criteria (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the bidding documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be

further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications and drawings.

(b) A substantially responsive "Financial Bid" is one, which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the bidding documents, the C-DAC's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids. No conditional bid will be accepted in any form.

(c) If a "Financial Bid" is not substantially responsive, it will be rejected by the C-DAC, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

4.5 **Correction of Errors**

(a) Bids determined to be substantially responsive will be checked by the C-DAC for any arithmetic errors. Errors will be corrected by the C-DAC as follows:

1. Where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
2. Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

(b) The amount stated in the Bid will be adjusted by the C-DAC in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid will be rejected, and the Earnest money shall be forfeited.

4.6 **Evaluation and Comparison of Bids**

(a) The C-DAC will evaluate and compare only the bids determined to be substantially responsive.

(b) In evaluating the bids, the C-DAC will determine for each bid the evaluated bid price by adjusting the bid price by making correction, if any, for errors

(c) If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the C-DAC may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the C-DAC may require that the amount of the performance security set forth in be increased at the expense of the successful Bidder to a level sufficient to protect the C-DAC against financial loss in the event of default of the successful Bidder under the Contract. The amount of the increased performance security shall be decided at the sole discretion of the C-DAC, which shall be final, binding and conclusive on the bidder.

(d) To assist in the examination, evaluation and comparison of bids, the C-DAC may, at his discretion, ask any bidder for providing clarification of his bid, including breakdown of the unit rates. The request for clarification and the response shall be in writing or by cable but no change in the price or substance of the bid shall be sought, offered, permitted. If clarification is not provided within the stipulated time period, the bid will be declared non-responsive.

5. Award of Contract

5.1 Award Criteria

The C-DAC will award the Contract to the Bidder whose Bid has been determined as follows:-

i) The contract of the project will be awarded to the bidder who be the lowest bidder i.e. L1

ii) In case of tie, the bidder with higher turnover in last financial year(2022-23) will be awarded the work.

5.2 C-DAC's Right to accept any Bid and to reject any or all Bids

2(a) The C-DAC reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the C-DAC's action.

5.3 Notification of Award and Signing of Agreement.

a. bidder whose Bid has been accepted will be notified of the award by the C-DAC prior to expiration of the Bid validity period by cable, fax, letter, e-mail or facsimile confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the C-DAC will pay to the Contractor in consideration of the execution, (hereinafter and in the Contract called the "Contract Price") and completion period.

b. The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security.

c. The Agreement will incorporate all agreements between the C-DAC and the successful Bidder. It will be signed by the C-DAC and the successful Bidder after the performance security is furnished.

5.4 Corrupt or Fraudulent Practices

The C-DAC requires the bidders / Contractors to strictly observe the laws against fraud and corruption in force in India, namely, Prevention of Corruption Act, 1988.

Corrupt & fraudulent practice and Fraud prevention policy - The C-DAC (C-DAC) will reject a proposal for award, if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with C-DAC., In any central Government of agency, and any other state agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contract, or in execution of the work related to contract. If the C-DAC determines that the Contractor has engaged incorrupt, fraudulent, collusive, coercive, or obstructive practices, in competing for or in executing the Contract, then the C-DAC may, after giving 14 days' notice to the contractor, terminate the Contractors employment under the Contract and expel him from the work

5.5 Escalation in Price

Clause 10 (CC) of CPWD as per CPWD GCC 2020 is applicable for Payment due to Increase/Decrease in Prices/Wages (excluding materials covered under clause 10 CA of CPWD) after Receipt of Tender for Works.

The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extension, if any.

It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between C-DAC and the contractor;

the contractor shall become entitled to payment only after C-DAC has approved the submitted escalation. Any delay in approval of escalation shall not entitle the contractor to any compensation/ interest from C-DAC.

6.0 Performance Guarantee:-

Within 15 days from the date of issue of LOA / LOI, the tenderer shall submit Performance Guarantee amounting to 5% (Five percent) of the awarded value of work in the form of DD Account payee, Banker's Cheque or Bank Guarantee in favour of C-DAC. Payable at Pune or Bank Guarantee from the Nationalized /Scheduled Bank of equivalent value. No interest will be paid under any circumstances. The Performance Bank Guarantee shall remain valid till completion of project/taking over by client whichever is later. An amount is to be deposited equivalent to 0.01% per day of the amount of Performance guarantee for extended /delayed period of submission of Performance guarantee. In no case the extension will be granted for more than 15 days. In case of non-submission of Performance guarantee with in stipulated / extended period, it will be presumed that agency is not interested in the work and EMD submitted will be forfeited without any notice. Shall be disqualified from bidding for any contract with you for a period of one year from the date of notification.

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

This Performance Guarantee initially be submitted with the validity till scheduled completion period as per tender document plus minimum 6 months beyond that. but in case of extension of completion due to any reason, it is the responsibility of the agency to get it extended one month prior to its expiry without any claim on it, in case of failure, C-DAC may get it en-cashed without giving any notice.

On receipt of the performance guarantee in the form of DD/BG & duly confirmed from issuing branch the EMD will be refunded. EMD deposited in the form of Banker's Cheque /Demand draft will be refunded.

The bidders quoting below minus (-) 5% of the estimated cost put to tender shall submit the additional performance Guarantee as follows:

Sr. No.	Range of Difference between the estimated Cost put to tender and Bid Amount	Additional Performance Security to be deposited by the successful bidder.
1.	Below 5%	No Additional Performance Security
2.	Below 5% and above & Below 10%	50% of (difference between estimated cost put to tender and Bid Amount)
3.	From 10% and above	150% of (difference between estimated cost put to tender and Bid Amount)

The Contractor shall submit genuine and valid Bank Guarantee to C-DAC. The Contractor agrees that the contractor shall not indulge in any fraudulent activity and in any point of time including after being successful bidder, if any fraudulent act shall have been committed by the contractor then C-DAC shall have full rights to forfeit the EMD, Security deposit, performance Guarantee, whatsoever without any notice to the Contractor apart from taking action as deemed fit under terms and condition of the contract including termination of the awarded work.

7. RETENTION MONEY:-

The security deposit/Retention Money will be deducted from the successful contractor at the rate of 10% from the Gross value of each R/A bills till it reaches 5% of the contract value. No interest will be paid on the Security Deposit under any circumstances. The total security deposit will be refunded only after expiry of defect liability period. However after successful completion of work 50% of the security deposit can be released against bank guarantee from the Nationalized / Scheduled Bank (as per list enclosed) as per approved format.

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

8. On acceptance of tender, the name of the authorized representative(s) of the contractor who would be responsible for taking instructions from Engineer-in-charge or his authorized representative shall be intimated by the contractor within 07 days from the date of issue of telegram/letter/telex/fax of intents by C-DAC.

9. The tenderer shall not be permitted to tender for works if his near relative is posted as an Accountant or an Assistant Engineer or any higher ranks in the project office or concerned office of the C-DAC. The contractor 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 of the officers in C-DAC. Any breach of this condition by the tenderer would render him liable to the withdrawal of the work awarded to him and forfeit of Earnest Money and Security Deposit. This may also debar the contractor from tendering for future works under C-DAC.

10. TAXES AND DUTIES.

10.1 The contract price is inclusive of all taxes, duties, cess and statutory levies payable under any law including but not restricted to Goods and Service tax (GST) levied by Union and State Governments(CGST,SGST,UTGST,IGST), labour cess, Custom duty, Royalty, Toll tax and any other such taxes and duties leviable by local/State/Union Government from time to time on all such articles, materials which may be used for this work or any other tax(duty etc.,) paid by the contractor.

10.2 In case of any change in rate of tax or any provision relating levy of GST resulting in increase in burden of GST on the contractor, the contractor shall be entitled to receive compensation for such increase in quantum of tax on the contractor. Similarly, recovery shall be made from the contractor on account of decrease of rate of GST. GST as applicable at the time of work will be charged to RA bills.

10.3 Contractor must be registered under Goods and Service tax (GST) laws, and copy of the registration certificate of the same shall be submitted to C-DAC.

10.4 Apart from the registration as mentioned at 10.3 above contractors shall also obtain all other necessary registrations required under any other Local/State/Union Government Statute, for the execution of this contract, if any.

10.5 Contractor must submit as a compliance of GST Laws, Tax invoice, as per applicable rules and regulations under the GST Act(s), failing which GST amount will be recovered by C-DAC without any recourse or prior notice from the next invoices/security Deposit/Bank Guarantees and/or available dues with C-DAC.

10.6 The contractor/service provider shall be responsible for issuing of Tax Invoices, filing of statutory return and deposit of statutory taxes within the time limit as prescribed in law. Any interest/Penalty/taxes (non availment of Input tax credit due to mismatch to GSTR2) which is required to be paid by C-DAC due to default by the Contractor/service provider to comply with the above-mentioned activity/provisions as prescribed in laws, rules and regulations shall be recovered from the

Contractor/Service provider and adjustment shall be made when mismatch is attended and solved and credit is extended to C-DAC.

10.7 Apart from compliance mentioned at 10.6 above, in the event of nonpayment/default in payment of taxes and duties and any other statutory compliances, under any other Local/State/Union Government Statute, C-DAC reserves the right to withhold the dues/payment of contractor and make payment to Local/State/Union Government authorities or to Labourers, as may be applicable.

10.8 It is clearly understood that the contractor is fully aware of all GST Laws and his Liabilities and responsibilities under the said laws including but not restricted to correct HSN/SAC code, applicable rate of taxes of GST or otherwise on which his liability has to be paid and discharged. C-DAC shall have no liability or responsibility for any penalty or proceedings or any other liability levied or leviable on the contractor because of lower deduction or any other such non compliance of the contractor.

10.9 Bidders will examine the various provisions of the central Goods and Service Tax Act.,2017 (CGST)/ Goods and Service tax Act(IGST)/Union Territory Goods and Service Tax Act,2017(UTGST)/respective state's State Goods and Service tax Act(SGST) also, as notified by Central/State Government and as amended from time to time and applicable taxes before bidding. Bidders will ensure that full benefit of input tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.

10.10 Anti-Profiteering Clause upon implementation of GST any reduction in tax on account of anti- profiteering on supply of goods or services, the benefit of reduced tax shall be passed on to C-DAC by way of commensurate reduction in prices.

10.11 In case of any law requires C-DAC to pay tax on the contract price on reverse charge basis, the amount of tax deposited by C-DAC would be considered as per Income tax act, GST Laws or any other law as applicable.

10.12 Stamp duty and registration charges, if any, payable on the executed contract document, shall be borne by the contractor.

11. Time for completion of project:- Total work is to be completed within **24 Months** including rainy season.

12. The tenderer shall be deemed to have gone through the various conditions and clauses of the tender and visited the site before quoting their rates, once they make an offer for this work. No claim shall be entertained on this account.

13. Details of documents to be submitted:

Following documents are to be submitted with Technical bid duly supported with credentials/ certificates as directed in the respective proforma.

S.No.	Details	Proforma No.	To be executed on
1.	Acceptance of Tender Conditions	PROFORMA- I	Tenderer's letter head
2.	Form of Tender	PROFORMA- II	Tenderer's letter head
3.	General Information	PROFORMA – III	
4.	List of Major Plant and Machinery in Possession of the Firm	PROFORMA – IV	
5.	Annual Turn Over For The Last five Years	PROFORMA-V	

6.	Details of the Similar Works Completed in Last Five Years	**PROFORMA-VI**	
7.	Details of on-going/existing works	**PROFORMA-VII**	
8.	Past contractual performance	**PROFORMA- VIII**	On Non-judicial stamp paper of value not less than Rs. 100/-
9.	Bank Account Particulars for refund of EMD through Electronic mode	**PROFORMA – IX**	
10	Certificate of Credit Facility	**PROFORMA – X**	
11	Format for litigation	**PROFORMA -XI**	Banker's letter Head
12	GST Registration Details	**PROFORMA -XII**	
13	Bid Securing Declaration Form	**PROFORMA -XIII**	
13	Letter of transmittal	**PROFORMA -XIV**	Tenderer's letter head

PROFORMA- I

(On the letter head of the Bidder)

To,
Executive Director, C-DAC.
Innovation Park, Panchavati
Pashan Road, Pune – 411008.

Sir,

ACCEPTANCE OF TENDER CONDITIONS

The tender documents for the work "Construction of academic building at Chikhali Campus, CDAC, Pune." been downloaded by me/us/ from official website/e tendering site of Centre for Development of Advanced Computing and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work.

1. The contents of clause 3.2 and 3.3 of the Tender documents (Instructions to tenderer) have been noted wherein it is clarified that after unconditionally accepting the tender condition in its entirety, it is not permissible to put any remark(s)/conditions(s) (except unconditional rebate on price, if any) in the tender enclosed in "Envelope-2 and the same has been followed in the present case. In case this provision of the tender is found violated at any time after opening of the Envelope 2 , I/we agree that the tender shall be summarily rejected and C-DAC shall, without prejudice to any other right or remedy be at liberty to forfeit the full said earnest money absolutely.
2. I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements. In case this provision of the tender is found violated at any time before or after opening of the Price bid/Award, I/we agree that the tender/Award shall be summarily rejected and C-DAC shall, without prejudice to any other right or remedy be at liberty to forfeit the full said earnest money/any other amount payable under this contract absolutely.
3. The required earnest money for this work is enclosed herewith.
4. If I/we will not fulfil the minimum qualifying criteria of the tender I/we not lodge any claim for opening of envelope 2 of the tender.

Yours faithfully,

Dated : ___

(Signature of the Bidder)
With rubber stamp

PROFORMA- II

FORM OF TENDER

(On the letterhead of the Bidder)

To

Executive Director, C-DAC.
Innovation Park, Panchavati
Pashan Road, Pune – 411008.

1. I/We, _____ [*Name and address of the Bidder]*_____ have read the various terms and conditions of the Bid documents together with Addendum no(s)/Errata no(s) attached here with duly signed by me/us and agree to abide by the same.
2. I/We hereby declare that we are aware of the site of work and have made ourselves fully conversant of the conditions therein and including the topography of area, soil strata at site of work, sources and availability of construction materials, rates of construction materials, water, electricity, all local taxes, royalties, octrois etc., availability of local labour (both skilled and unskilled), relevant labour rates and labour laws, the existing road and approaches to the site of work, requirements for further service roads / approaches to be constructed by me / us, the availability and rates of private land etc. that may be required by me / us for various purposes, climatic conditions, law and order situation and availability of working days.
3. I/We hereby tender for execution of_____ work_____ _____**"** as per tender documents within the time schedule of completion of work as per separately signed and accepted rates in the bill of quantities quoted by me/us for the whole work in the accordance with the Notice Inviting Tenders, conditions of Contract. Specifications of materials and workmanship, bill of quantities. Drawings, time schedule of completion of jobs and other documents and papers, all as in tender documents.
4. It has been explained to me/ us that the time stipulated for jobs and completion of works in all respects and in different stages mentioned in the "Time schedule for Completion of jobs and signed and accepted by me/us is the essence of the contract. I/We agree that in case of failure on my/our part to strictly observe the time of completion mentioned for jobs or any of them and the final completion of works in all respects according to the schedule sat out in the said "Time Schedule for completion of stipulations contained in the contract the recovery being made as specified therein. In exceptional circumstances extensions of time which shall always being in writing way, however be granted by the C-DAC at its entire discretion for some items and I/we agree that such extension of time will not be counted for the final completion of work as stipulated in the said "Time Schedule of Completion of jobs."
5. I/we agree to pay the earnest Money deposit, performance guarantee and Security Deposit and accept the terms and condition as laid down in the memorandum below in this respect.

6. MEMORANDUM

S.No.	Description	GCC Clause No.	Values/Description to be applicable for relevant clause(s)
1.	Name of Work		" Integrated Construction of academic building at Chikhali Campus, CDAC,Pune."

Sign & Seal of Tenderer **C-DAC**

2.	Client/Owner		Centre for Development of Advanced Computing
3.	Type of Tender		Item rate
4.	Estimated Cost	As per e-NIT	**Rs. 8**0.00 Cr **/-** **(Rupees Eighty Crore Only)**
5.	Earnest Money deposit	As per e-NIT	**Rs. 0.80 Cr (Rupees Eighty lakhs Only)**
	BID to be submitted in the form of Insurance Surety Bonds, Account payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee or online payment can be made for full amount as above or minimum of **Rs.** 80,00,000 **/-** issued from Nationalized/Scheduled pvt. Bank as per Memorandum attached with tender document **or** online payment through RTGS/NEFT in Bank Name – Bank of India, A/c. No. 051610100009000,IFSC Code – BKID0000516 in favour of C-DAC payable at Pune. **In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).**		
6.	Time for completion	As per e-NIT	Total work is to be completed within 24 Months including rainy season.
7.	Mobilization Advance	8.0	10% against bank Guarantee
8.	Interest rate on Mobilization Advance	8.0	8% per annum
9.	Schedule of Rates applicable	46.0	Refer clause No. 46 of GCC in conjunctions with BOQ
10.	Validity of Tender	4.0	180 (one hundred eighty) days
11.	Performance Guarantee	9.0	5% of contract value to be submitted within 15 days from the date of issue of LOI. Clause no 9.0 of GCC.
12.	Security deposit/ Retention Money	10.0	To be deducted @ 10% of each RA bill and will be restricted up to 5% of the contract value.
13.	Time allowed for starting the work.	43.0	Date of start of contract shall be reckoned 10 days after the date of issue of letter/FAX/E-mail of intent/acceptance of tender.
14.	Defect liability period	74.0	12 (Twelve Months from the date of handing over of works to Owner/C-DAC.
15.	Recovery rate of work force supplied by C-DAC to Contractor	28.5	Rs. 20,000/- (Rupees Twenty Thousand only) each man power per month.

6. Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and in default thereof, to forfeit, and pay C-DAC or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tender documents.

7. If I/We fail to commence the work immediately on issue of LOI, or I/We fail to submit the Performance Guarantee as per Clause 9.0 of General conditions of contract I/We agree that C-DAC shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money deposited with C-DAC besides any other action as per

terms of registration with C-DAC. The C-DAC shall also be at liberty to cancel the notice of acceptance of tender if we fail to deposit the performance guarantee as contained elsewhere in the tender documents.

8. I/We are also enclosing herewith the Acceptance letter on the prescribed pro-forma as referred to in condition of e-NIT.

Dated the_____ day of _____

SIGNATURE OF TENDERER

NAME IN CAPITAL LETTERS _____

ADDRESS _____

_____

TELEPHONE & FAX NO.

E-mail ID _____

SEAL OF TENDERER

WITNESS

OCCUPATION. _____

PROFORMA - III
GENERAL INFORMATION

All individual firms and each partner of a joint venture participating in this Bid are requested to complete the information in this form.

1	Name of Bidder	
2	Head Office Address	
	Tel. No	
	Mobile no.	
	Fax No	
	E-mail address	
3	Address on which Correspondence should be done	
	Tel. No	
	Mobile no.	
	Fax No	
	E-mail address	
4	Place of incorporation / registration	
5	Legal status of the applicant (attach copies of original documents defining the legal status)	
i)	Specify, if the bidder is	
	a) An individual	
	b) A proprietary firm	
	c) A firm in partnership	
	d) A Limited Company or Corporation	
	e) A group of firms / joint venture (if yes, give complete information in respect of each member)	**Not Applicable**
ii)	Attach a copy of Proprietorship or Partnership Deed or Article of Association or Incorporation of Company or JV Agreement as the case may be	
6	Name of Proprietor / Partners / Directors with their addresses, Mobile & Telephone numbers, Fax no., E-mail address.	
7	Designation of individuals authorized to act for the organization with the address, Mobile & Telephone numbers, Fax, E-mail address. **(Enclosed legal Power of Attorney along with Board resolution in case of Companies).**	

8	Was the applicant ever required to suspend any construction for a period of more than six months continuously after commencement of the construction? If so, give the name of the project & reasons of suspension of work.		
9	Has the applicant of 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.		
10	Has the applicant, or any constituent partner in case of partnership firm ever been debarred / black listed for tendering in any organization at any time? If so, give details.		
11	Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of Law? If so, give details.		
12	Credit facility		
13	Turn Over / Net Profit for the years given below: **Copies of Audited balance sheets are to be enclosed with proforma V.**	Turn Over in Lakhs	Profit in Lakhs
	2018-19		
	2019-20		
	2020-21		
	2021-22		
	2022-23		
14	Other details: **(Copies to be enclosed)**		
	a) EPF No. valid up to:		
	b) Goods & Service tax registration No.		
	c) PAN No.		
15	Give particulars of registration with Govt./Semi Govt./Public Sector Undertakings/Local Bodies.		

Note: Use separate sheets for providing more information if any.

Date & Place **Signature & seal of the applicant**

PROFORMA – IV

List of major Plant and Machinery in possession of the firm

S.No.	Name of Plant & Machinery/equipment	Available Owned	*Other than col. No. C
A	B	C	D
1.	Excavator		
2.	Dozer		
3.	Dumper		
4.	Truck		
5.	Tractor with trolley		
6.	Water Tanker		
7.	Batching Plant : Capacity-------		
8.	Transit Mixer		
9.	Site Mixers with weigh batcher		
10.	Skip Hoist		
11.	Dewatering / Water Pumps		
12.	Survey equipments:		
	a) Total Stn,		
	b) Theodolite		
	c) Level instruments		
13.	Details of Shuttering & Staging materials		
14.	Any other information**		

Signature & seal of the applicant

Date & Place

Note:

* In case of any arrangement for getting the equipment on lease, etc., authenticated proof of the same is to be submitted.

**

Use separate sheets for providing more information.

PROFORMA-V

Date: _____

ANNUAL TURN OVER FOR THE LAST FIVE YEARS				
S. No.	**YEAR**	**Turnover from Engineering construction works (Rs in lacs)**	**Net Profit (In Rs lacs)**	**Remarks (if any)**
1	2018-19			
2	2019-20			
3	2020-21			
4	2021-22			
5	2022-23			

Note:

1 The bidder **shall submit the attested copies of the audited balance sheets** along with Profit and loss statements and Auditors report and schedules duly certified by the bidder and Chartered Accountant. Certificate from the Chartered Accountant, wherever the Annual Turnover is Certified for the relevant financial year in which the minimum criteria of Annual Turnover is satisfied should also be submitted.

PROFORMA-VI

DETAILS OF THE SIMILAR WORKS COMPLETED IN LAST FIVE YEARS

S. No.	Description of the Work with Contract No.	Name and address of the C-DAC with Contact No.	Date of award	Stipulated date of completion	Date of actual completion	Value of completed work (In Rs lacs)	Reasons for delays, penalty if any	Any other relevant information
1								
2								
3								
4								
5								
6								

Note:

1. The Bidder shall submit the attested Copies of the Completion Certificates from the Client.

2. The value of work executed should be inclusive of the value of free supply items.

3. The attested copies submitted as the proof of similar works completed must be in the name of Bidder only. The proof submitted in this regard not in the name of Bidder will not be considered.

Sign & Seal of Tenderer **C-DAC**

PROFORMA-VII

DETAILS OF ON-GOING/EXISTING WORKS

S. No.	Description of the Work with Contract No.	Name and address of the C-DAC	Date of award	Stipulated date of completion	Value of work as per order (In Rs. lacs)	Value of work completed so far (In Rs.	Anticipated date of completion of work	Any other relevant information
1								
2								
3								
4								
5								
6								
7								
8								
9								

Note:-

The copies of certificates of ongoing-awarded works issued by the owner shall be attached. Only those works shall be considered for evaluation for which copies of the certificates issued by the owner are attached.

PROFORMA – VIII

PAST CONTRACTUAL PERFORMANCE

(Affidavit on non-judicial stamp paper of Rs 10/- duly attested by Notary/Magistrate)

This is to certify that We, M/s _____*[Name of the Bidder with address]*, in submission of the Bid, _____*[Name of Bid with Bid no.]*

i) have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;

ii) do not have records of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc

iii) have never been banned by any Central/State Govt. Departments/ Public Sector Undertakings or Enterprises of Central/State Govt. ;

iv) have submitted all the supporting documents and furnished the relevant details as per the prescribed format.

v) have submitted all the information and the requisite documents with the Bid and further certify that we are fully responsible for the correctness of the information and documents submitted by us.

SIGNATURE OF THE BIDDER

SEAL

Note:

Exceptions of the above, if any, shall be clearly mentioned with details by the bidder for evaluation/consideration if any.

PROFORMA –IX

BANK ACCOUNT PARTICULARS FOR REFUND OF EMD THROUGH ELECTRONIC MODE

S. No.	Description	Particulars
1	Name of the Beneficiary	
2	Bank Name	
3	Bank Address	
4	Bank Branch code	
5	Account No.	
6	IFSC Code	
7	MICR No.	

Date & Place **Signature & seal of the applicant**

PROFORMA - X

Certificate of Credit Facility

(On Banker's letter Head)

This is to certify that M/s _____, is a reputed firm/company with a good financial standing.

The firm/company is enjoying a fund/non-fund based credit facility of Rs _____ to meet its working capital requirements.

The firm/company is having un-utilized fund/non-fund based credit facility of Rs _____ as on *dd/mm/year*.

Signature
Name
Designation
Address of Bank

BANK'S SEAL

NOTE: The above certificate shall be from the RBI Scheduled Bank.

PROFORMA – XI

LITIGATION HISTORY
(ON THE LETTER HEAD OF APPLICANT)

S. No.	Name of Work	Client	Type of case (Court case/Arbitration Case)	Date of registering of case	Name & Address of Court / Arbitrator	Amount involved	Present Status	Remarks (if any)
1	2	3	4	5	6	7	8	9

Signature of Applicant
With seal

Note:

Applicant has to submit the details of last 5 years in respect of Court cases / Arbitration cases.

PROFORMA – XII

GST REGISTRATION DETAIL

S.NO	CONTRACTOR/VENDOR DETAILS	
1	Name	
2	Address(As per registration with GST)	
	City	
	Postal Code	
	Region/State(Complete State Name)	
3	GSTIN ID/Provisional ID No.(Copy of Acknowledgement required)	
4	Type of Business(As per registration with GST)	
5	Service Accounting Code/HSN Code	
6	Contact person	
	Phone number and Mobile number	
	Email id	
	Compliance rating(if undated by GSTN)	

PROFORMA- XIII

LETTER OF TRANSMITTAL

To,

Executive Director, C-DAC.
Innovation Park, Panchavati
Pashan Road, Pune – 411008

Sub: Integrated Construction of academic building at Chikhali Campus, CDAC, Pune.

Sir,

1. I/we hereby certify that all the statement made and information supplied in the Performa I to XIII and accompanying statement are true and correct.
2. I/We have read and examined the complete document including the instruction to Contractors, terms of reference and general conditions of the agreement and services to be provided for above-mentioned work.
3. I/we confirm that we are not debarred/ blacklisted by any Government department/organization/PSU on the last date of submission of this bid or I am debarred or blacklisted by …… (Name of Client) for the period from …… to ……
4. I/We hereby express our interest and submit my/our bid for 'Eligibility Bid' in prescribed formats for undertaking the above referred work.
5. I/We agree to abide by and fulfill all the terms, conditions and provisions of the aforesaid documents.
6. I/We confirm that to the best of my/our knowledge and belief the information contained in the specified formats and all supporting and explanatory information is truthful and exact.
7. I/We have furnished all information and details necessary for qualification of Technical bid and have no further pertinent information to supply.
8. I/We also authorize **C-DAC, Pune** approach individuals, C-DACs, firms and corporation to verify our credentials, competence and general reputation.

Sign & Seal of Tenderer **C-DAC**

9. I/We submit the following 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 disqualified and/or debarred in case any information furnished by me/us found to be incorrect".

Date: (Signature of Bidder/Authorized signatory of Bidder*)

Name and Address of Bidder:

Note: * Letter of Authority from Bidder should be enclosed, in case of Authorized Signatory of Bidder.

GENERAL CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

1.0 GENERAL

The Contract means the documents forming the tender and acceptance thereof and the agreement executed between the competent person on behalf of C-DAC and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

1.1 **Centre for Development of Advanced Computing**, hereinafter called 'C-DAC' proposes to get the works executed as mentioned in the Contract on behalf of Owner/ Client.

1.2 The work will be executed as per drawings "GOOD FOR CONSTRUCTION" to be released by C-DAC unless otherwise specified elsewhere in the tender documents.

1.3 In the contract, the following expressions shall, unless the context otherwise requires, have the meaning, hereby respectively assigned to them.

1.4 DEFINITIONS

a. **ENGINEER-IN-CHARGE** means the PROJECT MANAGER or an officer nominated by C-DAC who shall supervise and be in-charge of the work from time to time.

b. **WORKS OR WORK**: The expression works or work shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

c. **CONTRACTOR** means the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

d. **Consultant** Means Design Cum Project Management Consultant **(M/s. NPCCL)** appointed by C-DAC for design and Monitoring of the project.

e. **DRAWINGS** mean the drawings referred to in the Bill of Quantities, specifications and any modifications of such drawings or such other drawings as may from time to time be furnished or approved by C-DAC.

f. **SITE** means the lands and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by C-DAC or used for the purpose of the agreement.

g. **APPROVAL** means approved in writing including subsequent written confirmation of previous verbal approval.

h. **WRITING** means any manuscript typed written or printed statement under or over signature and/or seal as the case may be.

i. **MONTH** means English Calendar month 'Day' means a Calendar day of 24 Hrs each.

j. **CONTRACT VALUE** means the sum for which the tender is accepted as per the letter of intent.

k. **LANGUAGE**: All documents and correspondence in respect of this contract shall be in English Language.

l. **BILL OF QUANTITIES** or **SCHEDULE OF QUANTITIES** means the priced and completed Bill of Quantities or Schedule of Quantities forming part of the tender.

m. **OWNER** means **C-**DAC who has awarded the work to Contractor as implementing agency.

n. **TENDER** means the Contractor's priced offer to C-DAC for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Intent or Award letter. The word TENDER is synonymous with Bid and the word TENDER DOCUMENTS with "Bidding Documents" or "offer documents".

o. The headings in the clauses/ conditions of tender documents are for convenience only and shall not be used for interpretation of the clause/ condition.

p. Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words imparting persons or parties shall include firms, companies and other organizations having legal capacities.

2.0 SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the tenderer/bidder shall visit the site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at site, approach to the site, availability of water & power supply, application of taxes, cess duties and levies as applicable, nature of

ground, soil and sub-soil condition, underground water table level, accommodations they may require etc., river regime, river water levels, other details of river, streams & any other relevant information required by them to execute complete scope of work.

The tenderer may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.), which may influence or affect their tender prices. Tenderer shall considerer all site conditions and get satisfied himself in all respect before quoting his rate and no claim or extra charges whatsoever in this regard shall be entertained / payable by the C-DAC at a later date.

2.1 ACCESS BY ROAD

Contractor, if necessary, shall build temporary access roads to the actual site of construction for the works at his own cost to make the site accessible. The Contractor shall maintain the same in motor able condition at all the times as directed by Engineer-in-Charge at his own cost. The contractor shall be required to permit the use of any roads so constructed by him for vehicles of C-DAC or any other agencies/ contractors who may be engaged on the project site, free of cost. Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

2.2 HANDING OVER & CLEARING OF SITE

2.2.1 The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the contractor due to this phasing / sequencing of the work. The contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per specification by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

2.2.2 The efforts will be made by the C-DAC to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor, the C-DAC shall only consider suitable extension of time for the execution of the work. It should be clearly understood that C-DAC shall not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of Contractor's labour, equipment etc.

2.2.3 The Contractor shall be responsible for removal of all over-ground and under-ground structures (permanent, semi-permanent and temporary) and constructions from the site. The cost to be incurred in this regard shall be deemed to be included in the quoted rate of Bill of Quantities items and contractor shall not be entitled for any extra payment whatsoever, in this regard. The contractor, if required, shall demolish old structures on the proposed site, properly. The useful material obtained from demolition of structures & services shall be the property of the owner/C-DAC and these materials shall be stacked in workmanship like at the place specified by the Engineer- in-charge.

2.2.4 If required, the contractor has to do site clearance, enabling work, barricading, diversion of Roads, shifting/ realignment of existing utility services, drains, nallas etc. at his own cost as per direction of Engineer-in-charge and the contractor shall not be entitled for any extra payment whatsoever in this regard.

2.2.5 Necessary arrangements including its maintenance are to be made by the contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain, which are not in the alignment of the said project but are affected and/ or need to be demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in these regards shall be deemed to be included in the quoted rates of the Bill of Quantities items and contractor shall not be entitled for any extra payment whatsoever, in these regards.

2.2.6 The Contractor shall be responsible to co-ordinate with service provider/ concerned authorities for cutting of trees, shifting of utilities and removal of encroachments etc. and making the site un-encumbered from the project construction area required for completion of work. This shall include initial and frequent follow up meetings/ actions/ discussions with each involved service provider/ concerned authorities. The contractor shall not be entitled for any additional compensation for delay in cutting of trees, shifting of utilities and removal of encroachments by the service provider/ concerned authorities.

2.2.7 The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain the utilities that are to be affected by the works through the site investigation and collection of information from the concerned utility owners.

2.2.8 The contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/ re-alignment of existing public utilities. C-DAC shall only assist the contractor for liaising in obtaining the approval from the concerned authorities. Take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the contractor for the same. Shifting/ re-alignment of public utilities should be done without disturbing the existing one. New service lines should be laid and connected before dismantling the existing one.

2.2.10 Shifting/ re-alignment of existing public utilities shall be done by the contractor as per technical requirement of respective bodies or as per direction of Engineer-in-Charge. Shifting/ re-alignment of public utilities include all materials, labours, tools and plants and any other expenses whatsoever for the same. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment, whatsoever, in this regard. In case any of these services are shifted by the State Govt/ local authorities themselves for which deposit as per their estimates is to be made to them, the contractor shall deposit the same and the contractor shall be paid only at the rates quoted by them in BOQ for quantity specified in the BOQ, if such items are included in the BOQ irrespective of amount paid by him to the State Govt./ local authorities for execution of these works. In case such provision is not made in the BOQ or the quantity exceeds those specified in the BOQ, the same is deemed to be included in the rates quoted by him for other items in BOQ and nothing extra shall be payable to contractor on this account.

3.0 SCOPE OF WORK

3.01 The scope of work covered in this tender shall be as per the Bill of Quantities, specifications, drawings, instructions, orders issued to the contractor from time to time during the work. The drawings for this work, which may be referred for tendering, provide general idea only about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. Drawings will be released as "GOOD FOR CONSTRUCTION" from time to time by the Engineer-in-charge of C-DAC and accordingly be executed according to any additions/ modifications/ alterations/ deletions made from time to time, as required by any other drawings that would be issued to the contractor progressively during execution of work. It shall be the responsibility of the contractor to incorporate the changes that may be in this scope of work, envisaged at the time of tendering and as actually required to be executed.

3.2 The quantities of various items as entered in the "BILL OF QUANTITIES" are indicative only and may vary depending upon the actual requirement. The contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the bill of quantities.

4.0 VALIDITY OF TENDER

The tender for the works shall remain open for acceptance for a period of **180 days** from the last date of opening of tenders. The earnest money will be forfeited without prejudice to any right or remedy, in case the contractor withdraws his tender during the validity period or in case he changes his offer to his benefits, which are not acceptable to C-DAC. The validity period may be extended on mutual consent.

5.0 ACCEPTANCE OF TENDER

5.1 The C-DAC reserves to itself the authority to reject any or all the tenders received without assigning any reason. The acceptance of a tender shall be effective w.e.f. the date on which the telegram/ e-mail, letter of intent of acceptance of the tender is put in the communication by the C-DAC. C-DAC also reserves the right to Split the work among two or more parties at lowest negotiated rate without assigning any reason thereof. The contractor is bound to accept the portion of work as offered by C-DAC after split up at the quoted/-negotiated rates.

5.2 The C-DAC reserve the rights to restrict the bidder(s) for opening the price bid in case there are number of packages in the vicinity and the C-DAC does not want to award more than its specified number of packages as matter of strategy to one bidder, the bid in such case will be returned unopened as mentioned in the "Tender document" in such case. Order of Opening of bids shall be in order of decreasing value of packages.

6.0 SET OF CONTRACT DOCUMENTS

1. Notice Inviting tender
2. Corrigendum(s) and Addendum (s).
3. Pre-qualification documents
4. General Conditions of contract
5. Special conditions and formats
6. BOQ/schedule of rates

7. Technical Specifications
8. Tender drawings

7.0 EARNEST MONEY DEPOSIT

7.1 Earnest Money Deposit of amount as mentioned in "Memorandum to Form of Tender'' required to be submitted along with the tender shall be in the form of Insurance Surety Bonds, Account payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee, or payable at place as mentioned in "NIT/ Instructions to Tenderer" in favor of C-DAC Limited from any Nationalized / scheduled Bank of India, or Bank Guarantee in enclosed format from any Nationalized / Scheduled Bank as per list annexed. The EMD shall be valid for minimum period of 150 days (One hundred and fifty days) from last day of submission of Tender.

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

7.2 EMD Declaration shall accompany the offer and placed in the sealed envelope cover of the offer as detailed in the Instruction to tenderer. Any tender not accompanied with the requisite Earnest Money Deposit Declaration along with Letter of Acceptance shall be rejected and such tenderer(s) will not be allowed to attend the opening of bids. Conditional tenders will be summarily rejected.

7.3 Deleted

7.4 Deleted

7.5 Deleted

7.6 The EMD will be returned to all unsuccessful or technically unqualified tenderers after opening of price bid and to the technically qualified tenderers other than lowest (L-1) within ten (10) days of the Award of the Contract to successful bidder. EMD of successful tenderer shall be refunded after submission of Performance Guarantee/ initial security deposit duly confirmed from issuing bank.

7.7 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s) (except unconditional rebate on price, if any) in/ along-with the tender.

7.8 In case the condition 7.7 mentioned above is found violated at any time after opening of tender, the tender shall be summarily rejected and C-DAC shall, without prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

7.9 No interest shall be payable by the C-DAC on the said amount covered under EMD/Other security deposits.

8.0 MOBILISATION ADVANCE:

Mobilization advances not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within six months of the order to commence the work. Such advance shall be released in two or more installments to be determined by the Engineer-in-Charge at his sole discretion. The first installment of such advance shall be released by the Engineer-in-charge to the contractor on a request made by the contractor to the Engineer-in-Charge in this behalf. The second and subsequent installments shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment(s) to the satisfaction of the Engineer-in-Charge. Before any installment of advance is released, the contractor shall execute Bank Guarantee Bonds not more than 6 (six) in number from commercial Bank for the amount equal to 110% of the amount of advance and valid for the period till recovery of advance. This (Bank Guarantee from commercial Bank on prescribed format for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

8.1 The mobilization advance bear simple interest at the rate of 8 percent per annum and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractors bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty percent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.

If the circumstances are considered reasonable by the Engineer-in-Charge, the period mentioned in (ii) for request by the contractor in writing for grant of mobilization advance may be extended at the discretion of the Engineer-in-Charge.

9.0 PERFORMANCE GUARANTEE

Within 15 days from the date of issue of LOA / LOI, the tenderer shall submit Performance Guarantee amounting to 5% (Five percent) of the awarded value of work in the form of Insurance Surety Bonds, Account payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee in favour of C-DAC. or Bank Guarantee from the Nationalized /Scheduled Bank of equivalent value. No interest will be paid under any circumstances. The Performance Bank Guarantee shall remain valid till completion of project/taking over by client whichever is later. An amount is to be deposited equivalent to 0.01% per day of the amount of

Performance guarantee for extended /delayed period of submission of Performance guarantee. In no case the extension will be granted for more than 15 days. In case of non-submission of Performance guarantee with in stipulated / extended period, it will be presumed that agency is not interested in the work and EMD submitted will be forfeited without any notice. Shall be disqualified from bidding for any contract with you for a period of one year from the date of notification

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

This Performance Guarantee initially be submitted with the validity till scheduled completion period as per tender document plus minimum 6 months beyond that but in case of extension of completion due to any reason, it is the responsibility of the agency to get it extended one month prior to its expiry without any claim on it, in case of failure, C-DAC may get it en-cashed without giving any notice.

On receipt of the performance guarantee in the form of DD/BG & duly confirmed from issuing branch the EMD will be refunded. EMD deposited in the form of Banker's Cheque /Demand draft will be refunded.

The bidders quoting below minus (-) 5% of the estimated cost put to tender shall submit the additional performance Guarantee as follows:

Sr. No.	Range of Difference between the estimated Cost put to tender and Bid Amount	Additional Performance Security to be deposited by the successful bidder.
1.	Below 5%	No Additional Performance Security
2.	Below 5% and above & Below 10%	50% of (difference between estimated cost put to tender and Bid Amount)
3.	From 10% and above	150% of (difference between estimated cost put to tender and Bid Amount)

The Contractor shall submit genuine and valid Bank Guarantee to C-DAC. The Contractor agrees that the contractor shall not indulge in any fraudulent activity and in any point of time including after being successful bidder, if any fraudulent act shall have been committed by the contractor then C-DAC shall have full rights to forfeit the EMD, Security deposit, performance Guarantee, whatsoever without any notice to the Contractor apart from taking action as deemed fit under terms and condition of the contract including termination of the awarded work.

10.0 **SECURITY DEPOSIT**

The security deposit will be deducted from the successful contractor at the rate of 10% from the Gross value of each R/A bills till it reaches 5% of the contract value. No interest will be paid on the Security Deposit under any circumstances. The total security deposit will be refunded only after expiry of defect liability period. However after successful completion of work 50% of the security deposit can be released against bank guarantee from any Nationalized Bank as per approved format.

In case of Bank Guarantee, Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

11.0 **MOBILISATION OF MEN, MATERIALS AND MACHINERY:**

11.1 All expenses towards mobilization at site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipment's, clearing the site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

11.2 It shall be the responsibility of the Contractor to provide, operate and maintain all necessary construction equipment's, scaffoldings and safety, gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, contractor shall also be responsible for obtaining temporary electric and water connection for all purposes. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

11.3 It shall be the responsibility of the contractor to obtain the approval for any revision and/ or modification of work desired by him from C-DAC before implementation. Also such revisions and/or modifications if accepted / approved by the C-DAC shall be carried at no extra cost to C-DAC.

11.4 The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the contractor's responsibilities and his rates for execution of work shall be inclusive of supply of all these items.

11.5 It is mandatory for the contractor to provide safety equipment's and gadgets to its all workers, supervisory and Technical staff engaged in the execution of the work while working. The cost of the above equipment's/ gadgets are deemed to be included in the rates quoted by the contractor for the items & works as per Bill of Quantities and contractor shall not be entitled for any extra cost in these regard. The above norm is to be strictly complied with at site. In case the contractor is found to be deficient in providing Safety Equipment's/ Gadgets in the opinion of Engineer-in-charge, the Engineer-in-charge at his option can

procure the same at the risk & cost of contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the contractor for the same. The decision of the Engineer-in-charge shall be final and binding on contractor in this regard.

11.6 All designs and drawings shall be supplied by Contractor for execution of work at his own cost and get is certified from C-DAC prior execution of the work. However it shall be the duty and responsibility of contractor to bring to the notice of the C-DAC in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of the C-DAC in writing for the same.

11.7 One copy of contract documents including drawings furnished to the contractor shall be kept at the site and the same shall at all reasonable times be available for inspection.

11.8 All materials, construction plants and equipment's etc. once brought by the contractor within the project area, will not be allowed to be removed from the premises without the written permission of the C-DAC. Similarly all enabling works built by the contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of the C-DAC.

12.0 TDS DEDUCTION FROM PAYMENTS

TDS under Income Tax and GST TDS under GST shall be deducted from all payments made to the contractor including advances in accordance with the Income Tax Act & GST Act prevailing from time to time.

13.0 TAXES AND DUTIES.

13.1 The contract price is inclusive of all taxes, duties, cess and statutory levies payable under any law including but not restricted to Goods and Service tax (GST) levied by Union and State Governments(CGST,SGST,UTGST,IGST), labour cess, Custom duty, Royalty, Toll tax and any other such taxes and duties leviable by local/State/Union Government from time to time on all such articles, materials which may be used for this work or any other tax(duty etc.,) paid by the contractor.

13.2 In case of any change in rate of tax or any provision relating levy of GST resulting in increase in burden of GST on the contractor, the contractor shall be entitled to receive compensation for such increase in quantum of tax on the contractor. Similarly, recovery shall be made from the contractor on account of decrease of rate of GST. GST as applicable at the time of work will be charged to RA bills.

13.3 Contractor must be registered under Goods and Service tax (GST) laws, and copy of the registration certificate of the same shall be submitted to C-DAC.

13.4 Apart from the registration as mentioned at 10.3 above contractors shall also obtain all other necessary registrations required under any other Local/State/Union Government Statute, for the execution of this contract, if any.

13.5 Contractor must submit as a compliance of GST Laws, Tax invoice, as per applicable rules and regulations under the GST Act(s), failing which GST amount will be recovered by C-DAC without any recourse or prior notice from the next invoices/security Deposit/Bank Guarantees and/or available dues with C-DAC.

13.6 The contractor/service provider shall be responsible for issuing of Tax Invoices, filing of statutory return and deposit of statutory taxes within the time limit as prescribed in law. Any interest/Penalty/taxes (non availment of Input tax credit due to mismatch to GSTR2) which is required to be paid by C-DAC due to default by the Contractor/service provider to comply with the above mentioned activity/provisions as prescribed in laws, rules and regulations shall be recovered from the Contractor/Service provider and adjustment shall be made when mismatch is attended and solved and credit is extended to C-DAC.

13.7 Apart from compliance mentioned at 10.6 above, in the event of nonpayment/default in payment of taxes and duties and any other statutory compliances, under any other Local/State/Union Government Statute, C-DAC reserves the right to withhold the dues/payment of contractor and make payment to Local/State/Union Government authorities or to Labourers, as may be applicable.

13.8 It is clearly understood that the contractor is fully aware of all GST Laws and his Liabilities and responsibilities under the said laws including but not restricted to correct HSN/SAC code, applicable rate of taxes of GST or otherwise on which his liability has to be paid and discharged. C-DAC shall have no liability or responsibility for any penalty or proceedings or any other liability levied or leviable on the contractor because of lower deduction or any other such non compliance of the contractor.

13.9 Bidders will examine the various provisions of the central Goods and Service Tax Act.,2017 (CGST)/ Goods and Service tax Act(IGST)/Union Territory Goods and Service Tax Act,2017(UTGST)/respective state's State Goods and Service tax Act(SGST) also, as notified by Central/State Government and as amended from time to time and applicable taxes before bidding. Bidders will ensure that full benefit of input tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.

13.10 Anti-Profiteering Clause upon implementation of GST any reduction in tax on account of anti- profiteering on supply of goods or services, the benefit of reduced tax shall be passed on to C-DAC by way of commensurate reduction in prices.

13.11 In case of any law requires C-DAC to pay tax on the contract price on reverse charge basis, the amount of tax deposited by C-DAC would be considered as per Income tax act, GST Laws or any other law as applicable.

13.12 Stamp duty and registration charges, if any, payable on the executed contract document, shall be borne by the contractor.

14.0 **ROYALTY ON MATERIALS:**

The contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand etc. from the local authorities and quoted rates shall be inclusive of royalty on any account whatsoever.

15.0 **RATES TO BE FIRM**

15.1 The item rates quoted by the tenderer shall be firm and fixed for the entire period of completion and till handing over of the work except Change in statuatory taxes(GST).

15.2 The contractor shall be deemed to have inspected the site, it's surrounding and acquainted with the nature of the ground, accessibility of the site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, constructional plant, temporary works, restrictions on the plying of heavy vehicles in area, supply and use of labour, materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

15.3 The rates and prices given in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment/ overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, taxes, royalty ,duties, cess, octroi and other levies, insurance liabilities and obligations set out or implied in the tender documents and contract.

15.4 Unless otherwise specified in the Bill of Quantities (BOQ), the contractor has to make his own arrangement for dewatering/ bailing out of water, effluent including strutting, shoring etc at every stage of work wherever required including working under foul condition as per direction of Engineer-in-Charge at

his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

15.5 If required to make work site suitable for execution, contractor shall have to clear jungle including of rank vegetation, grass, trees etc., clear & clean existing drains/ canals (including strutting, shoring and packing cavities) and dispose them out of the site up-to any lead and lift as per direction of Engineer-in-charge. The contractor should inspect the site of work from this point of view. Unless otherwise specified in the Bill of Quantities, the cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items/Percentage and the contractor shall not be entitled for any extra payment in this regard.

15.6 If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the contractor has to protect the structures by any means as per the directions of the Engineer - in – Charge. If any damage caused to any temporary or permanent structure(s) in the vicinity is caused due to execution of the project, the contractor has to make good the same by any means as per directions of the Engineer - in – Charge. The contractor should inspect the site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items/Percentage and the contractor shall not be entitled for any extra payment in this regard.

16.0 ESCALATION/ PRICE VARIATION

Clause 10 (CC) of CPWD as per CPWD GCC 2020 is applicable for Payment due to Increase/Decrease in Prices/Wages (excluding materials covered under clause 10 CA of CPWD) after Receipt of Tender for Works.

The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extension, if any.

It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between C-DAC and the contractor; the contractor shall become entitled to payment only after C-DAC has approved the submitted escalation. Any delay in approval of escalation shall not entitle the contractor to any compensation/ interest from C-DAC.

17.0 INSURANCE OF WORKS ETC.

Contractor is required to take **contractor's all risk policy** or erection all risk policy (as the case may be) from an approved insurance company in the joint name with C-DAC and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of

contract against all loss of damage from whatever cause arising other than excepted risks for which he is responsible under the terms of the contract and in such manner that the C-DAC and the contractor are covered during the period of construction of works and/or also covered during the period of defect liability for loss or damage:

a. The work and the temporary works to the full value of such works.

b. The materials, constructional plant, centering, shuttering and scaffolding materials and other things brought to the site for their full value.

Whenever required by C-DAC, the contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premiums.

18.0 INSURANCE UNDER WORKMEN COMPENSATION ACT

Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof. Wherever required by C-DAC the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

19.0 THIRD PARTY INSURANCE

Contractor is required to take third party insurance cover for an amount of 5% (five percent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of C-DAC, arising out of the execution of the works or temporary works. Wherever required by C-DAC the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums. In case of failure of the contractor to obtain contractors all risk policy, insurance under workman compensation act and third party insurance as described above within one month from the date of commencement of work, running account payments of the contractor shall be withheld till such time the contractor obtains the aforesaid insurance covers.

If the Contractor could not effect a comprehensive insurance cover against risks which he may be required to effect under the terms of the contract, then he shall give his attention to get the best insurance cover available and even in case of effecting a wider insurance cover than the one which the subsidiary of the General Insurance Company could offer, such an insurance is ought to be done after the C-DAC's approval, by or through the subsidiary of the General Insurance Company.

20.0 INDEMNITY AGAINST PATENT RIGHTS

The contractor shall fully indemnify the C-DAC from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

21.0 LABOUR LAWS TO BE COMPLIED BY THE CONTRACTOR

The contractor shall obtain a valid license under the contract labour (R & A) Act 1970 and the contract labour Act (R&A) Central Rules 1971 and amended from time to time, and continue to have a valid license until the completion of the work including defect liability period. The contractor shall also abide by the provision of the child labour (Prohibition and Regulation) Act-1986 and amended from time to time. Any failure to fulfill this requirement shall attract the penal provisions of this contract arising out the resultant for non-execution of the work before the commencement of work.

21.1 No labour below the age of 18 years shall be employed on the work.

22.0 LABOUR SAFETY PROVISION

The contractor shall be fully responsible to observe the labour safety provisions.

23.0 OBSERVANCE OF LABOUR LAWS

23.1 The contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall indemnify and keep indemnified C-DAC against effect or non observance of any such laws. The contractor shall be liable to make payment to all its employees, workers and sub-contractors and make compliance with labour laws. If C-DAC or the client/ owner is held liable as "Principal C-DAC" to pay contributions etc. under legislation of Govt. or Court decision in respect of the employees of the contractor, then the contractor would reimburse the amount of such payments, contribution etc. to C-DAC and/ or same shall be deducted from the payments, security deposit etc. of the contractor.

23.2 The Contractor shall submit proof of having valid EPF registration certificate. In absence of the said certificate payment to the extent of 4.70% (four point seventy percent) of the value of the Running Account bill may be withheld by C-DAC and shall be released only after the production of the EPF registration certificate from the concerned authorities. If it is incumbent upon C-DAC to deposit withhold amount with EPF authorities, the withhold amount shall be deposited by C-DAC with EPF authorities. In such a case C-DAC shall not refund

this withhold amount to the contractor even after the production of EPF registration certificate.

23.3 The contractor shall be liable to pay cess levied under the Building and other Construction Workers Welfare Cess Act, 1996, at such rates as may be notified by the Government from time to time. The C-DAC shall deduct at source from every Running Account Bill of the Contractor, the said cess, at such rates for the time being prevailing, which shall not exceed 2% (two percent) but not be less than 1% (one percent) of the cost of construction incurred by the C-DAC.

24.0 LAW GOVERNING THE CONTRACT

The Indian Laws shall govern this contract for the time being in force.

25.0 LAWS, BY LAWS RELATING TO THE WORK

The contractor shall strictly abide by the provisions, for the time being in force, of law relating to works or any regulations and bylaws made by any local authority or any water & lighting agencies or any undertakings within the limits of the jurisdiction of which the work is proposed to be executed. The contractor shall be bound to give to the authorities concerned such notices and take all approvals as may be provided in the law, regulations or bylaws as aforesaid, and to pay all fees and taxes payable to such authorities in respect thereof.

26.0 EMPLOYMENT OF PERSONNEL

26.1 The contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents and any other nationality in any way are associated with the works.

26.2 The C-DAC shall have full power and without giving any reason to the contractor, immediately to get removed any representative, agent, servant and workmen or employees on account of misconduct negligence or incompetence or whose continued employment may in his opinion be undesirable. The contractor shall not be allowed any compensation on this account.

27.0 TECHNICAL STAFF FOR WORK

27.1 The contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by C-DAC shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at site, whenever required by C-DAC to take instructions.

27.2 Within 15 days of letter of intent, the contractor shall submit a site organizational chart and Resume including details of experience of the Project-in-Charge and other staff proposed by him and shall depute them on the Project after getting approval from Engineer-in-Charge. If desired by the contractor at a later date, the Project-in-Charge and other staff whose resume is approved by C-DAC can be replaced with prior written approval of C-DAC and replacement shall be with equivalent or superior candidate only. Decision of Engineer-in-Charge shall be final and binding on the contractor. Even after approving the site organizational chart, the Engineer-in-Charge, due to nature and exigency of work, can direct the contractor to depute additional staff as per the requirement.

The removal of such additional staff from the site shall only be with the prior written approval of Engineer-in-Charge. The contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-in-Charge shall be final and binding on the contractor.

The desired numbers of personnel for the project are as follows:

S.No.	Contract Value	Graduate Engineers		Diploma Engineers	
		Civil	Mechanical/ Electrical	Civil	Mechanical/ Electrical
1.	Up to 5.00 Crores	-	-	02	01
2.	More than 5.00 & Up to 10.00 Crores	01	-	02	01
3.	More than 10.00 & Up to 25.00 Crores	02	01	02	01
4.	More than 25.00 & Up to 50.00 Crores	03	01	03	01
5.	More than 50.00 & Up to 75.00 Crores	04	02	04	02
6.	More than 75.00 & Up to 100.00	05	02	06	03
7.	More than 100.00	06	03	08	04

27.3 In case the contractor fails to employ the staff as aforesaid he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 40,000/- (Rupees forty Thousand only) for each month of default in the case of each Graduate Engineer and Rs.25,000/- (Rupees twenty five Thousand only) in the case of each Diploma Engineer. The decision of the Engineer-in-charge as to the number of Technical

Staff to be adequate for the project and the period for which the required technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor.

28.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACOMMODATION

28.1 The contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up of labour camp and same is deemed to be included in the rates quoted by the contractor for the works. The contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. Contractor shall give the vacant possession of the land utilised for this purpose back after completion of the work. The security deposit of the contractor shall be released only after contractor demolishes all structures including foundations and gives back clear vacant possession of this land.

28.2 In the event the contractor has to shift his labour campus at any time during execution of the work on the Instructions of local authorities or as per the requirement of the work progress or as may be required by C-DAC, he shall comply with such instructions at his cost and risk and no claim whatsoever shall be entertained on this account.

28.3 **FURNISHED OFFICE ACCOMMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY CONTRACTOR TO C-DAC**

On account of furnished Project office equipped with all facilities such as telephone, fax, internet, photocopier, computer/ laptop & printer along with operator, regular electric & purified drinking water supply and inspection vehicle etc. as per the requirement of the project. otherwise an amount equal to 1.0 % of gross bill from all running account & final bill will be recovered.

The contractor shall also make sufficient arrangement for Photography/ Videography preferably by maintaining a camera/video camera at site so that video photographs can be taken of a specific activity at any point of time. The contractor shall also provide software like MS Project etc. for the purpose of preparing progress report etc.

28.4 The contractor shall make all arrangements for ground breaking ceremony/ inaugural function etc for the project as required and the cost towards it deemed to be included in his rates/offer.

28.5 UTILISATION OF WORK FORCE OF C-DAC BY THE CONTRACTOR

C-DAC may supply skilled/semiskilled work force if available in surplus and required by the contractor, like work supervisors, masons, wireman, plumber etc or any other category to assist the contractor in execution of the works at the fixed recovery rate of Rs. 20,000/- per month for each number of workforce (Rupees twenty thousand only per month) or any higher rate mentioned in the "Memorandum to the Form of Tender" against each work force, till handing over of the whole project.

Recoveries, as stated above will be made by C-DAC from the monthly running account bills. The contractor shall deploy such work force on the execution of the works as per their trades and deployment shall be for the entire contract period till completion and handing over of works.

Further, the monthly rate per person is for the purpose of recovery only and in no

way shall be construed to be the rate applicable for working out analysis, justification

of rates, extra items, claims etc.

S.No.	Value of the Project as per agreement (Rs.in crores)	Number of work force of various categories
1.	From Rs.1 crore to 2.5 crore	1
2.	Above Rs.2.5 crore to 5 crore	3
3.	Above Rs.5 crore to 7.5 crore	4
4.	Above Rs.7.5 crore to 10 crore	6
5.	Above Rs.10 crore to 15 crore	8
6.	Above Rs.15 crore to 20 crore	10
7.	Above Rs.20 crore to 30 crore	12
8.	Above Rs.30 crore to 50 crore	15
9.	Above Rs.50 crore to 75 crore	20
10	Above Rs.75 crore up to any value.	25

29.0 WATCHING AND LIGHTING

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-in-Charge.

30.0 HEALTH & SANITARY ARRANGEMENTS

In case of all labour directly or indirectly employed in work for the performance on the contractor's part of this contract, the contractor shall comply with all rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

31.0 WORKMEN'S COMPENSATION ACT

The contractor shall at all times indemnify C-DAC and Owner against all claims for compensation under the provision of workmen's compensation Act or any other law in force, for any workmen employed by the contractor or his sub-contractor in carrying out the contract and against all costs and expenses incurred by the C-DAC therewith.

32.0 MINIMUM WAGES ACT

The contractor shall comply with all the provisions of the minimum wages Act, 1948, contract labour Act (R&A) 1970, and rules framed there under and other labour laws/local laws affecting contract labour that may be brought into force from time to time.

33.0 LABOUR RECORDS

The contractor shall submit by the 4th & 19th of every month to the Engineer-in-Charge of C-DAC a true statement, showing in respect of the second half of the proceeding month and the first half of the current month, respectively, of the following data: -

a) The number of the labour employed by him (category-wise).

b) Their working hours.

c) The wages paid to them.

d) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.

e) The number of female workers who have been allowed Maternity Benefits and the amount paid to them.

f) Any other information required by Engineer-in-Charge.

34.0 RELEASE OF SECURITY DEPOSIT AFTER LABOUR CLEARANCE

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually

complete, the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security deposit will be released if otherwise due.

35.0 SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS

Interest free secured advance up-to a maximum of 75 % (seventy five percent) of the Market Value of the Materials or the cost of materials as derived from the tendered item/percentage rate of the contractor, whichever is less, required for incorporation in the permanent works and brought to site and duly certified by C-DAC site Engineer shall be paid to the Contractor for all non-perishable items as per CPWD norms/ C-DAC. The advance will be paid only on submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance paid for the balance quantities of materials. The contractor shall construct suitable godown at the site of work for safe storing the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks.

35.1 Payment of such advance shall be processed by C-DACL with a certificate from an Officer not below the rank of Executive Engineer as under:-

a) The quantities of material for which advance is to be made are required being claimed have actually been brought to site.

b) Full quantity of the material for which advance is to be made are required by the contractor for use on items of work for which rates for finished work have been agreed up on.

c) The quality of materials is as per desired specifications and having the desired test certificates from the approved laboratories.

36.0 MEASUREMENTS OF WORKS

Unless otherwise mentioned in the bill of quantities the measurements of works shall be done as per building code/ CPWD specifications if the same is not given in the building code/ CPWD specifications, the same shall be measured as per latest relevant BIS codes in force. The quantity of steel reinforcement and the

structural steel sections incorporated in the work shall be measured & paid on the basis of standard coefficients of sections as per BIS Codes of practice.

37.0 PAYMENTS GUIDELINES: -

37.1 The contractor shall prepare computerized bills using the program as approved by Engineer-in-Charge as per prescribed format/ pro-forma. The Contractor shall submit five numbers of hard copies and one soft copy of floppy/ CD for all bills, subject to clause 37.3 herein below, the payment due to the contractor shall be made within fifteen days of getting the measurements verified from the Engineer-in-Charge or his subordinate/ representative of PMC (M/S NPCC) and/or representative of CDAC and certification of bill by the Engineer-in-Charge of PMC and/or representative of CDAC.

37.2 All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and / or accepted by C-DAC and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of the C-DAC under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract. The contractor shall submit the final bill within three months of the completion of work, otherwise C-DAC's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on contractor.

Each Running Bills should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-in-charge taken from various points depicting status of work as on Report/ Bill date along with Monthly Progress Report for the concerned month in the pro-forma to be given/ approved by Engineer-in-Charge. Intermittent progress Photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-in-Charge. No payment of running account bill shall be released unless it is accompanied by progress photographs and Monthly Progress Report as above.

37.3 It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between C-DAC and the contractor; the contractor shall become entitled to payment only after C-DAC has received the corresponding payment(s) from the client/ Owner for the work done by the contractor. Any delay in the release of payment by the client/ Owner to C-DAC leading to a delay in the release of the corresponding

payment by C-DAC to the contractor shall not entitle the contractor to any compensation/ interest from C-DAC.

37.4 All payments shall be released by C-DAC online through RTGS/NEFT to the bank details given by the contractor.

38.0 WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT

For carrying out work on Sunday and Holidays or during night, the contractor will approach the Engineer-in-Charge or his representative at least two days in advance and obtain his permission. The Engineer-in-Charge at his discretion can refuse such permission. The contractor shall have no claim on this account whatsoever. If work demand, the contractor shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in-Charge at no extra cost to C-DAC.

39.0 NO IDLE CHARGES TOWARDS LABOUR OR P&M ETC.

No idle charges or compensation shall be paid for idling of the contractor's labour, staff or P&M etc. on any ground or due to any reason whatsoever. C-DAC will not entertain any claim in this respect.

40.0 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS AND ORDERS ETC.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings.

The contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

41.0 DIRECTION FOR WORKS

41.1 All works to be executed under the contract shall be executed under the directions and subject to approval in all respects of the Engineer-in-

Charge of C-DAC who shall be entitled to direct at what point or points and in what manner the works are to be commenced and executed.

41.2 The Engineer-in-Charge and his representative shall communicate or confirm their instructions to the contractor in respect of the execution of work during their site inspection in a 'Works Site Order Book' maintained at the site office of Engineer-in-Charge. The contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book.

42.0 ORDER OF PRECEDENCE OF DOCUMENTS

In case of difference, contradiction, discrepancy, dispute with regard to Conditions of

Contract, specifications, Drawings, Bill of quantities and rates quoted by the Contractor and other documents forming part of the contract, the following shall prevail in order of precedence.

i. Agreement along with statement of agreed variations and its enclosures,
ii. Letter of Intent, Letter of Award, Work Order
iii. Bill of Quantity / Schedule of Quantities
iv. Special Condition of Contract.
v. Standard Technical specifications (General, Additional and Technical Specification) as give in Tender documents.
vi. General Conditions of Contract.
vii. Drawings.
viii. CPWD Standard specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders.
ix. Relevant B.I.S. Codes.

43.0 TIME SCHEDULE & PROGRESS

43.1 Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the Tender conditions. The Date of start of contract shall be reckoned 10 days after the date of issue of letter/FAX/E-mail of intent/acceptance of tender. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.

43.2 The contractor shall also furnish within 10 days of date of receipt of letter of Intent, a CPM network/ PERT chart/ Bar Chart (in MS Project) along with quarterly milestones and resources plan for man, material & machinery to achieve the milestones for completion of work within stipulated time. This will be duly got approved from Concerned Zonal/UNIT office of C-DAC. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

43.3 Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.

43.4 During the currency of the work the contractor is expected to adhere to the time schedule on miles stone and total completion and this adherence will be a part of Contractor's performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/ BAR CHART undertaken by the C-DAC. These reviews may be undertaken at the discretion of C-DAC either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of C-DAC/ owner / consultant at the sole discretion of C-DAC. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.

43.5 Contractor shall submit fortnightly/ Monthly (as directed by Engineer-in-Charge) progress reports (5 copies) on a computer based program (program and software to be approved by Engineer-in-Charge) highlighting status of various activities and physical completion of work.

43.6 The contractor shall send completion report with as built drawings (4 sets) with soft CAD copies and maintenance schedule to the office of Engineer-in-Charge, of C-DAC in writing within a period of 30 days of completion of work.

44.0 WATER AND ELECTRICITY

The contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

45.0 MATERIALS TO BE PROVIDED BY THE CONTRACTOR

The contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works.

The contractor shall at his own expense and without delay; supply to the Engineer-in-Charge samples of materials to be used on the work and shall get the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if required by the Engineer-in- Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply.

The contractor shall at his risk and cost, submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided or otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance and cost in obtaining the right and visit to such access.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials, which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to the supplies and all costs which may require such removal and substitution shall be borne by the contractor.

45.1 CEMENT AND CEMENT GODOWN

Cement shall be procured by Contractor confirming to BIS: 8112 Specification latest edition or higher Grade as directed by the Engineer-in-Charge. The cement shall be procured directly from the reputed manufacturers/ stockiest, which will have to be got approved from C-DAC in advance. Relevant vouchers and test certificates will be produced as and when required. The cement shall be stored by the contractor in such suitable covered and lockable stores, well protected from climate and atmospheric affect. The cement godown shall be constructed by the contractor as per CPWD/Building code specifications at his own cost. The cement in bags shall be stored in godowns in easy countable position. Cement bags shall be used on first in first out basis. Cement stored for

beyond 90 days will be required to be tested at contractors cost, before use in works.

45.2 **STEEL & STEEL STOCKYARD**

Steel confirming to BIS specifications (latest edition) shall be procured by the contractor directly from reputed manufacturers/producers as per approved list of C-DAC. The manufacturer has to give a certificate that the material supplied is not a re-rolled product. The contractor will produce relevant vouchers & test certificates. Re-rolled sections will not be allowed.

Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The contractor shall take proper care to prevent direct contact between the steel and the ground/ water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per directions of the Engineer-in-Charge. Steel shall also be protected, by applying a coat of neat cement slurry over the bars for which no extra payment shall be made.

Test certificates for each consignment of steel shall be furnished and tests to be got carried out from the authorized laboratory as per the directions of Engineer-in-Charge, before incorporating the materials in the work.

46.0 SCHEDULE OF QUANTITIES / BILL OF QUANTITIES/ QUANTITY VARIATION

46.1 The work under this contract shall be carried out as per BOQ cum rate schedule. In case the description /specification as per BOQ are found to be incomplete, CPWD specifications shall be followed. Quantities mentioned in the rate schedule are approx. only and liable for variation due to change of scope of work/variation in schedule of quantities, changes in design etc. The tenderers shall under take to execute actual quantities as per advise of C-DAC engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site in payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of individual quantity to the extent sanction is available.

46.2 All items of work in the bill of quantities/ schedule of quantities shall be carried out as per the CPWD specifications, drawings and instructions of the Engineer-in-Charge of C-DAC and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision and tools, tackles, plant & machinery complete as called for in the detailed specifications and conditions of the contract. The Contractor without the approval of the C-DAC shall execute no item, which is not covered in the bill of

quantities. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

46.3 If the rates for the extra items are not available in the BOQ then CPWD shall be followed as per the instruction of C-DAC Engineer-in Charge.

47.0 ANTI-TERMITE TREATMENT & WATER PROOF TREATMENT

47.1 Pre-construction treatment shall be carried out in co-ordination with the building work and shall be executed in such a manner that the civil works are not hampered or delayed by the anti-termite treatment. The treatment shall be carried out as detailed in BIS: 6313 (Part-II) latest revision. The waterproof treatment shall be of type and specifications as given in the schedule of quantities.

47.2 The treatment against water-proofing of basement, roofs, water retaining areas and termite infestation shall be and remain fully effective for a period of not less than 10 (Ten) years to be reckoned from the date of expiring of the Defect Liability period, prescribed in the contract. At any time during the said guarantee period if C-DAC finds any defects in the said treatment or any evidence of re-infestation, dampness, leakage in any part of buildings or structure and notifies the contractor of the same, the contractor shall be liable to rectify the defect or give re-treatment and shall commence the work or such rectification or re-treatment within seven days from the date of issue of such letter to him. If the contractor fails to commence such work within the stipulated period, the C-DAC may get the same done by another agency at the Contractor's cost and risk and the decision of the Engineer-in-Charge of C-DAC for the cost payable by the contractor shall be final and binding upon him.

47.3 Re-treatment if required shall be attended to and carried out by the Contractor within seven days of the notice from Engineer-in-Charge of C-DAC.

47.4 The C-DAC reserves the right to get the quality of treatment checked in accordance with recognized test methods and in case it is found that the chemicals with the required concentration and rate of application have not been applied, or the water proof treatment is not done as per specifications, the contractor will be required to do the re-treatment in accordance with the required concentration & specifications at no extra cost failing which no payment for such work will be made. The extent of work thus rejected shall be determined by C-DAC.

47.5 Water proofing and anti-termite treatment shall be got done through approved / specialized agencies only with prior approval of Engineer-in-Charge.

47.5a. The contractor shall make such arrangement as may be necessary to safe guard the workers and residents of the building against any poisonous effect of the chemicals used during the execution of the work.

47.6 During the execution of work, if any damage shall occur to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of Engineer-In-Charge by the contractor at his costs and risks.

47.7 The contractor shall make his own arrangement for all equipments required for the execution of the job.

47.8 The contractor whose tender is accepted shall execute guarantee Bond in the prescribed form as appended for guaranteeing the anti-termite treatment and water proof treatment.

48.0 INDIAN STANDARDS

Wherever any reference is made to any IS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with the amendments current at the last date of receipt of tender documents.

49.0 CENTERING & SHUTTERING

Marine plywood only or steel plates of minimum thickness as approved by Engineer-in-Charge shall be used for formwork. The shuttering plates shall be cleaned and oiled after every repetition and shall be used only after obtaining approval of C-DAC's Engineers at site. The number of repetitions allowed for plywood and steel shuttering shall be at the discretion of Engineer-in-Charge of C-DAC depending upon the condition of shuttering surface after each use and the decision of Engineer-in-Charge in this regard shall be final and binding on the contractor. No claim whatsoever on this account shall be admissible.

50.0 PROPRIETARY MATERIALS

50.1 The following proprietary materials shall be brought to site after the approval of C-DAC.

a) Water Proofing Compound

b) Cement

c) Steel

d) Bitumen

e) Primer/Paints/Varnish etc.

f) Chemical for anti termite treatment

g) Any other materials as per discretion of the C-DAC.

50.2 The quantity of proprietary materials shall be measured and recorded in the Measurement books and signed by the Contractor and the Engineer-in-Charge as a check to ensure that the required quantities as required for execution of works as per specifications have to be brought to site for incorporation in the work.

50.3 Proprietary materials brought at site shall be stored as directed by C-DAC and those already recorded in Measurement book, shall be suitably marked for identification.

50.4 The contractor shall ensure that the proprietary materials are brought to site in original sealed containers or packing bearing manufacturer's markings and brands (except where the quantity required is a fraction of the smallest packing). Materials not complying with this requirement shall be rejected. The empty containers of such proprietary materials shall not be destroyed/ disposed-off without the permission of C-DAC.

50.5 The contractor shall produce receipted vouchers showing quantities of the materials to satisfy Engineer-in-Charge that the materials comply with the specifications. These vouchers shall be endorsed, dated and initiated by Engineer-in-Charge giving the contract number and name of work and a certified copy of each such voucher signed both by C-DAC and the Contractor shall be kept on record.

51.0 RECORDS OF CONSUMPTION OF MATERIALS

51.1 For the purpose of keeping a record of materials (Steel & Cement) received at site and consumed in works, the contractor shall maintain a properly bound register in the form approved by the C-DAC, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the contractor's representative and C-DAC/PMC(NPCC)'s representative.

51.2 The register of material shall be kept at site in the safe custody of C-DAC's Engineer during progress of the work. This provision will not, however, absolve the contractor from the quality of the final product.

51.3 In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per CPWD (as the case may be) specifications/ norms, the work will be devalued and/ or a penal rate (i.e. double the rate at which cement/ steel purchased last) recovery for lesser consumption of cement/ steel shall be made in the rates of the work done subject to the condition that the tests results fall within the acceptable criteria

as per CPWD (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the contractor at no extra cost.

In case of cement, if actual consumption is less than 98% of the theoretical consumption, a recovery shall be affected from the contractor's dues at the penal rate (Prescribed under relevant clauses of I.S.Code) for the actual quantity, which is lower than 98% of theoretical consumption.

52.0 MATERIALS AND SAMPLES

52.1 The materials/ products used on the works shall be one of the approved make/ brands out of list of manufacturers/ brands/ makes given in the tender documents. The contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-in-Charge for prior approval. In exceptional circumstances Engineer-in-Charge may allow alternate equivalent makes/ brands of products/ materials at his sole discretion. The final choice of brand/ make shall remain with the Engineer-in-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor.

In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer of C-DAC and the owner shall have the discretion to check quality of materials and equipments to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The contractor shall provide the necessary facilities and assistance for this purpose.

52.2 The above provisions shall not absolve the contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge of C-DAC.

52.3 The contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by C-DAC. The materials articles etc. as approved shall be labeled as such and shall be signed by C-DAC and the Contractor's representative.

52.4 The approved samples shall be kept in the custody of the Engineer- in-Charge of C-DAC till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the contractor. No payment will be made to the contractor for the samples or samples destroyed in testing.

52.5 The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the site order book.

52.6 The contractor shall set up and maintain at his cost, a field-testing laboratory for all day-to-day tests at his own cost to the satisfaction of the Engineer-in-Charge. This field-testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per CPWD (as the case may be) specifications. The laboratory building shall be constructed and installed with the appropriate facilities; Temperature and humidity controls shall be available wherever necessary during testing of samples.

All equipments shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipments in good working condition for the duration of the contract.

The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programme as required by the Engineer-in-charge.

The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the site, etc. The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-in-charge and shall submit the results of such measurements without delay. All field tests shall be carried out in the presence of C-DAC representative. All costs towards samples, materials, collection, transport, manpower, testing etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the bill of quantities.

53.0 TESTS AND INSPECTION

53.1 The contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work.

All the tests on materials, as recommended by CPWD, NBC (latest rivision), Local Municipal rules and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of tender documents) shall be got carried out by the contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of the C-DAC. All testing charges, expenses etc. shall be borne by the contractor.

All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the contractor or C-DAC at the cost of the Contractor.

53.2 WORKS TO BE OPEN TO INSPECTION

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of the C-DAC. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/ or an inspecting authority of State Government of State in which work is executed and/or by third party checks by owner/ clients. The compliance of observations/ improvements as suggested by the inspecting officers of C-DAC/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of contractor.

54.0 BORROW AREAS

The contractor shall make his own arrangements for borrow pits and borrow disposal areas including their approaches and space for movement of man, machinery, other equipments as required for carrying out the works. The contractor shall be responsible for taking all safety measures, getting approval, making payment of royalties, charges etc. and nothing extra shall be paid to the contractor on this account and rates quoted by the contractor for various items of bill of quantities shall deemed to include the same.

55.0 BITUMEN WORK

55.1 The contractor shall collect the total quantity of tar or bitumen required for the work as per standard formula, before the process of painting started and shall hypothecate it to the Engineer-in-Charge. Although the materials are hypothecated to C-DAC the Contractor undertakes the responsibility for their proper watch, safe custody and protection against all risks. The materials shall not be removed from site of work without the consent of the Engineer-in-charge in writing.

56.0 CARE OF WORKS

From the commencement to the completion of works and handing over, the contractor shall take full responsibility for care thereof all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of Precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor.

57.0 WORK IN MONSOON AND DEWATERING

The execution of the work may entail working in the monsoon also. The contractor must maintain labour force as may be required for the job and plan

and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work in monsoon. The contractor's rate shall be considered inclusive of cost of dewatering required if any and no extra rate shall be payable on this account.

58.0 NO COMPENSATION FOR CANCELLATION/ REDUCTION OF WORKS

If at any time after the commencement of the work the C-DAC shall for any reason whatsoever is required to abandon the work or is not require the whole work thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out or fore-closure, neither shall he have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated. Provided that the contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the site of the work by the contractor and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof and then taken back by the contractor, provided however, that the Engineer-in-Charge shall have in all such cases the option of taking over all or any such materials at their purchase price or at local current rates whichever may be less. In the case of such stores having been issued by C-DAC and returned by the Contractor to C-DAC, credit will be given to him by the Engineer-in-Charge at rates not exceeding those at which they were originally issued to him after taking into consideration any deduction for claims on account of any deterioration or damage while in the custody of the contractor and in this respect the decision of the Engineer-in-Charge shall be final.

59.0 RESTRICTION ON SUBLETTING

59.1 The contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract and even then only with the prior written consent of the C-DAC and such consent if given shall not relieve the contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults or neglects of any sub-contractor, his agents, servants or workman as full as if they were the acts, defaults or neglects of the contractor, his agent, servants or workman provided always that the provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

59.2 The contractor may entrust specialized items of works to the agencies specialized in the specific trade. The contractor shall give the names and details of such firm whom it is going to employ for approval of C-DAC. These details shall include the expertise, financial status, technical manpower, equipment, and resources and list of works executed and on hand of the specialist agency.

60.0 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, construction of structures should be put up by the contractor anywhere on the project site, neither any building built by him shall be un-authorized occupied by him or his staff.

61.0 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies operating at the site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute the decision of C-DAC shall be final and binding on the contractor. No claim whatsoever shall be admissible on this account.

62.0 SETTING OUT OF THE WORKS

The contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works. If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the contractor shall at his own expenses rectify such error to the satisfaction of Engineer-in- charge. The checking of any setting out or of any line or level by the engineers of C-DAC shall not in any way relieve the contractor of his responsibility for the correctness.

63.0 NOTICE BEFORE COVERING UP THE WORK

The contractor shall give not less than seven days notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer-in-charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of Inspection/ measurement without such notice or his consent being obtained the same shall be uncovered at the contractor's expenses and he shall have to make it good at his own expenses.

64.0 SITE CLEARANCE

64.1 The contractor shall ensure that the working site is kept clean and free of obstructions for easy access to job site and also from safety point of view. Before handing over the work to the C-DAC the contractor shall remove all temporary structures like the site offices, cement godown, stores, labour hutments etc., scaffolding rubbish, left over materials tools and plants, equipments etc., clean and grade the site to the entire satisfaction of the Engineer-in-charge. If this is not done the same will be got done by C-DAC at his risk and cost.

64.2 The contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter's works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the item/percentage rates quoted by the contractor shall be deemed to have included the same.

65.0 VALUABLE ARTICLES FOUND AT SITE

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the site, shall be the property of the owner/ Government and the contractor shall duly preserve the same to the satisfaction of Engineer-in-charge and shall from time to time deliver the same to such person or persons indicated by the C-DAC.

66.0 MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER'S PROPERTY

All materials like stone, boulders and other materials obtained in the work of dismantling, excavation etc. will be considered owner/ government property and may be issued to the contractor by the owner/ C-DAC, if required for use in this work at rate s approved by C-DAC or the contractor may be asked to dispose these items at his cost.

67.0 SET-OFF OF CONTRACTOR'S LIABILITIES

C-DAC shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the contractor under this agreement including security deposit and proceeds of performance guarantee.

68.0 MATERIALS PROCURED WITH THE ASSISTANCE OF C-DAC

If any material for the execution of this contract is procured with the assistance of C-DAC either by issue from its stores or purchase made under orders or permits or licenses obtained by C-DAC, the contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the permission of Engineer-in-charge. The contractor, if required by the C-DAC, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as the C-DAC shall determine having due regard to the conditions of materials.

69.0 ALTERATION IN SPECIFICATION, DESIGN & DRAWING

69.1 The Engineer-in-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original specifications, drawings, designs and instructions that may appear to him to be necessary during the progress of the work, and the contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions, or substitutions shall not invalidate the contract and any altered, additional or substituted work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work, and the certificate of the Engineer-in-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extent of 25 percent of such extension shall be allowed to the contractor. The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

i) The rates for the additional, altered or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a nearest similar item of work as are specified in the contract for the work. In case of composite tenders where two or more schedule of quantities/ bill of quantities form part of the contract, the rates shall be derived from the nearest similar item in the schedule of quantities / bill of quantities of the particular part of work in which the deviation is involved failing that from the lowest of the nearest similar item in other schedule of

quantity. The opinion of the Engineer-in-Charge as to whether or not the rate can be reasonably so derived from the item in this contract will be final and binding on the contractor.

iii) If the altered, additional or substituted work includes any work for which no rate is specified in the contract for the work and which cannot be derived in the manner specified in sub para (i) and (ii) from the similar class of work in the contract then such work shall be carried out at the rates entered in the Schedule of rates **DSR- 2021 or latest revision shall be considered**.

iv) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-in-Charge of the rate which it is his intention to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-in-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 15% (Fifteen percent) to cover the contractors supervision, overheads and profit and pay the contractor accordingly. The opinion of the Engineer-in-Charge as to the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the contractor.

However, the Engineer-in-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider advisable. But under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

70.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK

If it shall appear to the Engineer-in-Charge or his authorized subordinate in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing which shall be made within six months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified

and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-Charge in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent of the estimated amount put to tender for every day not exceeding ten days, while his failure to do so shall continue and in the case of any such failure, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the contractor.

71.0 POSSESSION PRIOR TO COMPLETION

71.1 C-DAC shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by C-DAC delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of C-DAC in this case shall be final binding and conclusive.

71.2 When the whole of the works or the items or the groups of items of work for which separate periods of completion have been specified have been completed the contractor will give a notice to that effect to the Engineer-in-Charge in writing. The Engineer in-Charge shall within 7 days of the date of receipt of such notice inspect the works and either the Engineer-in-Charge issues to the contractor a completion certificate stating the date on which in his opinion the works were completed in accordance with the contract or gives instructions in writing to the contractor specifying the balance items of work which are required to be done by the contractor before completion certificate could be issued. The Engineer-in-Charge shall also notify the contractor of any defect in the works affecting completion.

71.3 The contractor shall during the course of execution prepare and keep updated a complete set of 'as built' drawings to show each and every change from the contract drawings, changes recorded shall be countersigned by the Engineer-in-Charge and the contractor. Four copies of 'as built' drawings shall be supplied to C-DAC by the contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the contractor only.

72.0 COMPENSATION FOR DELAY AND REMEDIES

72.1 If the contractor fails to maintain the required progress in terms of relevant clause of Special Conditions of Contract, to complete the work and clear the

site on or before the end date mentioned in contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the C-DAC on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or such smaller amount as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as applicable) that the progress remains below that specified in the relevant clause in Special Conditions of Contract or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified.

i) Completion period (as originally stipulated) not exceeding 3 month @ 1% per day

ii) Completion period (as originally stipulated) exceeding 3 months @ 1% per week

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with C-DAC.

72.2 CANCELLATION / DETERMINATION OF CONTRACT IN FULL OR PART

Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workmanlike manner shall omit to comply with the requirement of such notice for a period of seven days thereafter; or

ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge; or

iii) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or

iv) If the contractor persistently neglects to carry out his obligations under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or

v) If the contractor shall offer or give or agree to give to any person in C-DAC service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action in relation to the obtaining or execution of this or any other contract from C-DAC; or

vi) If the contractor shall obtain a contract with C-DAC as a result of wrong tendering or other non-bona-fide methods of competitive tendering; or

vii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administrative of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or

viii) If the contractor being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or

ix) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or

x) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of the labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works

or any portion thereof without and prior written approval of the Engineer-in-Charge.

xi) When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge may without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to C-DAC, by a notice in writing, cancel the contract as a whole or only such items of work in default from the Contract.

xii) If the Contractor submits non-guine and invalid or fraudulent/forge document, Bank Guarantee etc. to C-DAC without prejudice to any other right or remedy which shall have accrue hereafter to C-DAC, by notice in writing cancel the contract as whole or only such items of work in default from the contract.

The Engineer-in-Charge shall on such cancellation by the C-DAC have powers to:

a) Take possession of site and any materials, constructional plant, implements, stores, etc. thereon; and/ or

b) Carry out the incomplete work by any means at the risk and cost of the contractor; and/ or

c) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission the full security deposit recoverable under the contract shall be liable to be forfeited and un-used materials, construction plants, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of the C-DAC. If any portion of the Security Deposit has not been paid or received it would be called for and forfeited; and/ or

d) To employ labour paid by the Department and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-Charge shall be final and conclusive) against the contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in-Charge as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

e) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract clause / relevant clause of Special Conditions of Contract, out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by C-DAC under his contract or on any other account whatsoever or from his security deposit or the proceeds of sales of unused materials, construction plants, implements temporary buildings etc. thereof or a sufficient part thereof as the case may be. If the expenses incurred by the C-DAC are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

f) By a notice in writing to withdraw from the contractor any items or items of work as the Engineer-in-charge may determine in his absolute discretion and get the same executed at the risk and cost of the contractor.

Any excess expenditure incurred or to be incurred by C-DAC in completing the works or part of the works or the excess loss or damages suffered or may be suffered by C-DAC as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to C-DAC in law be recovered from any moneys due to the contractor on any account, and if such moneys are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractor's unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract and law.

Any sums in excess of the amounts due to C-DAC and unsold materials, constructional plant etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by C-DAC of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

In the event of anyone or more of the above courses being adopted by the Engineer-in-Charge the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified. Provided further that if any of the recoveries to be made, while taking action as per (d) and/or (e) above, are in excess of the security deposit forfeited, these shall be limited to the amount by which the excess cost incurred by the Department exceeds the security deposit so forfeited.

72.3 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION IS NOT TAKEN

In any case in which any of the powers conferred upon the Engineer-in-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to the used for the execution of the work / or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor and/or direct the contractor or his authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds

and expenses of any such sale shall be final and conclusive against the contractor.

72.4 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY

The time allowed for execution of the Works as specified in the terms of contract or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from the 10th Day or such time period as mentioned in letter of Intent/ award after the date on which the Engineer-in-Charge issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as aforesaid, the Executing Agency shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

72.4.1 Within 10 (Ten) days of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart in MS Project) along with quarterly milestones and resources plan for man, material & machinery to achieve the milestones and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work.

The compensation for delay as per clause no. 72 shall be leviable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/ or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work".

72.4.2 If the work(s) be delayed by:

i) Force-majeure or

ii) Abnormally bad weather, or

iii) Serious loss or damage by fire, or

iv) Civil commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-

Charge in executing work not forming part of the Contract, or

vi) Non-availability of stores, which are responsibility of the C-DAC or,

vii) Non availability or break down of tools and plant to be supplied or supplied by C-DAC or, any other cause which, in the absolute discretion of the C-DAC, is beyond the Contractor's control, then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

72.4.3 Request for extension of time, to be eligible for consideration, shall be made by the contractor in writing with in fourteen days of the happening of the event causing delay on the prescribed form.

The Contractor will indicate in such a request the period for which extension is desired. In any such case C-DAC may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request.

73.0 WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR

73.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, C-DAC shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, C-DAC shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, C-DAC shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with C-DAC pending finalization or adjudication of any such claim.

73.2 It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or C-DAC will be kept withheld or retained as such by the Engineer-in-Charge or C-DAC till the claim arising out of or under the contract is determined by the

competent court and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the C-DAC shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise.

C-DAC shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for C-DAC to recover the same from him in the manner prescribed in Clause 51.1 above or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by C-DAC to the contractor, without any interest thereon whatsoever.

73.3 LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or by C-DAC against any claim of the Engineer-in-Charge or C-DAC in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the C-DAC. It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the C-DAC will be kept withheld or retained as such by the Engineer-in-Charge or the C-DAC or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

74.0 DEFECTS LIABILITY PERIOD

The contractor shall be responsible for the rectification of defects in the works for a period of **twelve months** from the date of taking over of the works by the Owner/ Client. Any defects discovered and brought to the notice of the contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by C-DAC at the cost and expense of the contractor.

75.0 FORCE MAJEURE

Any delay in or failure of the performance of either party hereto shall not constitute default hereunder to give rise to any claims for damages, if any to the Extent such delay or failure of performance is caused by occurrences such as acts of God or the public enemy, expropriation, compliance with any order or request of Government authorities, acts of war, rebellions, sabotage fire, floods, strikes, or riots (other than contractor's employees). Only extension of time shall be considered for Force Majeure conditions as accepted by C-DAC. No adjustment in contract price shall be allowed for reasons of force majeure.

76.0 ARBITRATION -

In case any dispute arises between the C-DAC and successful bidder with respect to this RFP, including its interpretation, implementation or alleged material breach of any of its provisions both the Parties hereto shall endeavor to settle such dispute amicably. If the Parties fail to bring about an amicable settlement within a period of 30 (thirty) days, dispute shall be referred to the sole arbitrator mutually appointed by both parties. If the sole arbitrator is not appointed mutually by both the parties then the competent Court shall have jurisdiction for appointment of sole arbitrator. Arbitration proceedings shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and Rules made there under, or any legislative amendment or modification made thereto. The venue and seat of the arbitration shall be Pune. The award given by the arbitrator shall be final and binding on the Parties. The language of arbitration shall be English. The common cost of the arbitration proceedings shall initially be borne equally by the Parties and finally by the Party against whom the award is passed. Any other costs or expenses incurred by a Party in relation to the arbitration proceedings shall ultimately be borne by the Party as the arbitrator may decide. Courts in Pune only shall have the exclusive jurisdiction to try, entertain and decide the matters which are not covered under the Arbitration and conciliation Act.

76.1 **JURIDICTION**

The agreement shall be executed at Pune on non-judicial stamp paper purchased in Pune and the Court (s) at Pune alone shall have exclusive jurisdiction to deal with matters arising there from, to the exclusion of all other courts.

77.0 SUSPENSION OF WORKS

(a) The contractor shall, on receipt of the order in writing of the Engineer-in-charge, suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-charge may consider necessary for any of the following reasons:

i) On account of any default on part of the contractor, or

ii) For proper execution of the works or part thereof for reason other than the default of the contractor, or

iii) For safety of the works or part thereof; The contractor shall, during such suspension, properly protect and secure the work to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above.

i) The contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No adjustment of contract price will be allowed for reasons of such suspension.

ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by C-DAC, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full.

78.0 TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

Without prejudice to any of the right or remedies under this tender or contract at later date, if the contractor dies, the Engineer-in-charge shall have the option of terminating the contract without compensation to the contractor.

79.0 CLARIFICATION AFTER TENDER SUBMISSION

Tenderer's attention is drawn to the fact that during the period, the bids are under consideration, the bidders are advised to refrain from contacting by any means, the C-DAC and/or his employees/ representatives on matters related to the bid under consideration and that if necessary, C-DAC will obtain

clarifications in writing or as may be necessary. Duly authorized Tender Scrutiny Committee does the tender evaluation and process of award of works and this committee is authorized to discuss and get clarification from the tenderers

80.0 ADDENDA/ CORRIGENDA

Addenda/Corrigenda to the tender documents may be issued prior to the date of opening of the tender to clarify or effect modification in specification and/or contract terms included in various tender documents. The tenderer shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The tenderer shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt and submit along with the tender document. All addenda/ Corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the tender and contract documents.

81.0 QUALITY ASSURANCE PROGRAMME

To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The contractor shall prepare and finalise such Quality Assurance Programme within 15 days from letter of intent. C-DAC shall also carryout quality audit and quality surveillance of systems and procedures of Contractor's quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

a) His organization structure for the management and implementation of the proposed Quality Assurance Program.

b) Documentation control system.

c) The procedure for purpose of materials and source inspection.

d) System for site controls including process controls.

e) Control of non-conforming items and systems for corrective actions.

f) Inspection and test procedure for site activities.

g) System for indication and appraisal of inspection status.

h) System for maintenance of records.

i) System for handling, storage and delivery.

j) A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

The Contractors in the formats appended hereto shall submit all the quality reports. Checklist enclosed here in this document shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-in-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of contractor and C-DAC. All the costs associate with Printing of Formats and testing of materials required as per technical specifications or by Engineer-in-charge shall be included in the Contractor's quoted rates in the Schedule/ Bill of quantities.

82.0 APPROVAL OF TEMPORARY / ENABLING WORKS

The setting and nature of all offices, huts, access road to the work areas and all other temporary works as may be required for the proper execution of the works shall be subject to the approval of the Engineer-in-charge.

All the equipments, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract-shall have to be arranged by the Contractor only. Nothing extra shall be paid to the Contractor on this account and the Item/percentage rates quoted by the Contractor for various items in the Bill of Quantities shall be deemed to include the cost of enabling works.

83.0 CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING

The Contractor shall prepare and finalize in consultation with C-DAC, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Intent for the purpose of execution of the Contract.

The Contractor shall have to attend all the meetings at any place in India at his own cost with C-DAC, Owners/ Clients or Consultants of C-DAC/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such persons and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of C-DAC/ Owner/ Clients and any dealing/ correspondence if required at any time with Clients/ Owners/ Consultants shall be through C-DAC only.

During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress report to the Engineer-in-charge of C-DAC by 5th of every month. The format of monthly progress report shall be as approved by Engineer-in-Charge of C-DAC.

84.0 CONTRACT AGREEMENT

The Contractor shall enter into a Contract Agreement with the C-DAC within 20 days from the date of receipt of Letter of Intent or within such extended time, as may be granted by the C-DAC. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. Incase, the contractor does not sign the agreement as above or start the work within 10 days of the receipt of letter of intent, his earnest money is liable to be forfeited and letter of intent consequently will stand withdrawn.

85.0 MANNER OF EXECUTION OF AGREEMENT

i. The contract agreement shall be signed at the office of the C-DAC within 20 days from the date of receipt of Letter of Intent. The Contractor shall produce for signing of the Contract, appropriate Power of Attorney and the requisite documents/materials. Unless and until a formal contract is prepared and executed, the Letter of Intent read /Work order in conjunction with the Bidding Documents will constitute a binding contract.

ii. The agreement will be signed in five originals and the Contractor shall be provided with one signed original and the other four originals will be retained by the C-DAC. Contractor has to provide 05 (five) nos. of non-judicial stamp papers of requisite value purchased from Pune.

ii. The Contractor shall deposit the amount in the form of NEFT/RTGS/demand draft in favour of C-DAC Payable at Pune within seven days of issuance of LOI/LOA equal to the twice of the tender cost in lieu to the preparation of contract agreement.

86.0 PURCHASE PREFERENCE

C-DAC reserves its right to extend Purchase Preference as per policy of Government of India, if any, as applicable on this work. The tenderers are requested to go through latest instructions of Government of India on its preference policy before quoting for the tender.

87.0 CHANGE IN FIRM'S CONSTITUTION TO BE INTIMATED

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby

undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 59.1 hereof and C-DAC shall be entitled to take action under Clause 72.2 (xi).

LABOUR SAFETY PROVISION

The contractor shall be fully responsible to observe the labour safety provisions as per prevailing act and amended from time to time.

1.0 Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).

2.0 Scaffolding or staging more than 3.6m (12 feet) above the ground, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

3.0 Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width & should be suitable fastened as described in (2.0) above.

4.0 Every opening in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 feet).

5.0 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. for ladder up to and including 3m (10 feet) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm (1 ft.) of length. Uniform step spacing shall not exceed 30 cm (12"). Adequate precautions shall be taken to prevent danger

from electrical equipment. No materials on any of the sites of the work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defence of every suit, action or other proceeding at law that may be brought by an person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the Contractor, be paid to compensate any claim by any such person.

6.0 **EXCAVATION AND TRENCHING**

All trenches, 1.2mts.(four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30m. (100 feet) in length or fraction thereof, Ladder shall be extended from bottom of the trench to at least 90 cm (3feet) above the surface of the ground. The side of the trenches, which are 1.5m (5 feet) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger or sides to collapsing. The excavated materials shall not be placed within 1.5m (5 feet) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7.0 **DEMOLITION** –

Before any demolition work is commenced and also during the progress of the work:

a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.

b) No electric cable or apparatus that is likely to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

c) All practical steps shall be taken to prevent danger to persons employed from risk

or fire or explosion or flooding. No floor, roof or other part of the building shall be

overloaded with debris or materials as to render it unsafe.

8.0 All necessary personal safety equipments as considered adequate by the Engineer-in-charge should be kept available for the use of persons employed on the site and maintained in a condition suitable for immediate use, and the

contractor should take adequate step to ensure proper use of equipment by those concerned- The following safety equipment shall be invariably provided.

8.1 Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

8.2 Those engaged in white washing and mixing or stacking of cement bags or any materials that are injurious to the eye shall be provided with protective goggles.

8.3 Those engaged in welding works shall be provided with welders protective eye shields.

8.4 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe interval.

8.5 When workers are employed in sewers and manholes, which are in active use, the Contractors shall ensure that the manhole covers are opened and ventilated at-least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident the public. In addition, the contractor shall ensure that the following safety measures are adhered to:

a. Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer

b. At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manholes for working inside.

c. Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper, which changes colour in the presence of such gases and gives indication of their presence.

d. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

e. Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f. The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g. No smoking or open flames shall be allowed near the blocked manhole being cleaned.

h. The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

i. Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer In-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

j. Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

k. Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air-blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at-least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

l. The workers engaged for cleaning the manholes/ sewers should be properly trained before allowing working in the manhole.

m. The workers shall be provided with Gumboots or non sparking shoes, bump helmets and gloves non sparking tools, safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

n. Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

o. If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

p. The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer In charge regarding the steps to be taken in this regard in an individual case will be final.

8.6 The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.

8.6.1 No paint containing lead or lead products shall be used except in the form of paste

or readymade paint.

8.6.2 Suitable facemasks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

8.6.3 Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

8.6.4.1

a. White lead, sulphate or lead work products containing those pigments shall not be used in painting operation except in the form of paste or of paints ready for use.

b. Measures shall be taken whenever required in order to prevent danger arising from the application of paint in the form of spray.

c. Measures shall be taken, whenever practicable to prevent danger arising out of dust caused by dry rubbing down and scrapping.

8.6.4.2

a. Adequate facilities shall be provided to enable working painter to wash during and on cessation of work.

b. Suitable arrangements shall be made to prevent clothing put off during working hours being spoiled by painting materials.

8.6.4.3

a Cases of lead poisoning and of suspected lead poisoning shall be notified and shall

be subsequently verified by a medical man appointed by the competent authorities

of the Consultant.

b The C-DAC may require when necessary a medical examination of workers.

c Instructions with regard to the special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

9.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

10.0 Use of hoisting machines and tackle including their attachment encourage and supports shall conform to the following standard of conditions.

10.1

a. These shall be of good mechanical construction, sound material and adequate strength and free from patent, defects and shall be kept required in good working order.

b. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

10.2 Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any Scaffolding, winch or giving signals to operator.

10.3 In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

10.4 In case of C-DAC machines, the safe working load shall be notified by the Engineer-in-Charge. As regards Contractor's machines the Contractor shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get verified by the Engineer-in-Charge.

11.0 Motors gearing, transmission electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguard, hosting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves sleeves and boots as may be necessary be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

12.0 All scaffolding, ladders, and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

13.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety codes shall be named therein by the contractor.

14.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by the or their representatives.

15.0 Notwithstanding the above Clauses from (i) to (xiv) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

1.0 **APPLICATION**

These rules shall apply to all building and construction works in which 20 (twenty) or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contractor work is in progress.

2.0 **DEFINITION**

Work place means a place where twenty or more workers are ordinarily employed or are proposed to be employed in connection with construction work on any day during the period during which the contractor work is in progress.

3.0 **FIRST-AID FACILITIES**

3.1 At every work place first aid facilities shall be provided and maintained, so as to be easily accessible during working hours, First-Aid boxes at the rate of not less than one box per 150 contract labour or part thereof ordinarily employed.

3.2 The First-Aid boxes shall be distinctly marked with a red cross on white ground and shall contain the following equipments: -

3.2.1

a) For work places in which number of contract labour employed does not exceed 50, each First-Aid box shall contain the following equipments:

i) 6 small sterilized dressings.
ii) 3 medium size sterilized dressings.
iii) Large size sterilized dressings.
iv) 3 large sterilized burn dressings.
v) 1 (30 ml) bottle containing a two percent alcoholic solution of iodine.
ii) 1(30 ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label.
vii) 1 snakebite lancet.
viii) (30 gms) bottle of potassium permanganate crystals.

ix) 1 pair of scissors.

ix) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advise

Service & Labour Institutes, Government of India.

x) 1 bottle containing 100 tablets (each of 5 grams) of aspirin.

xi) Ointment for burns.

xii) A bottle of suitable surgical antiseptic solution.

3.2.2 For work places in which the number of contract labour exceed 50. Each First-Aid box shall contain the following equipments:

i) 12 small sterilized dressings.

ii) 6 medium size sterilized dressings.

iii) 6 large size sterilized dressings.

iv) 6 large size sterilized burn dressings.

v) 6 (15 gms) packet sterilized cotton wool.

vi) 1 (60 ml.) bottle containing a two percent iodine alcoholic solution.

iii) 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.

viii) 1 rolls of adhesive plaster.

iv) 1 snake – bite lancet.

x) 1 (30 gms.) bottle of potassium permanganate crystals.

xi) 1 pair of scissors.

xiii) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.

xiii) A bottle containing 100 tablets (each of 5 grams) of aspirin.

xiv) Ointment for burns.

xv) A bottle of suitable surgical antiseptic solution.

3.3 Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

3.4 Nothing except the prescribed contents shall be kept in the First Aid box.

3.5 The First Aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

3.6 A person in charge of the First-Aid box shall be a person trained in First-Aid treatment, in work places where the number of labour employed is 150 or more.

3.7 In work places where the number of labour employed is 500 or more and hospital facilities are not available within easy distance of the works, first-Aid Posts shall be established and run by a trained Compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

3.8 Where work places are situated in places, which are not towns of cities, a suitable motor transport shall be kept readily available to carry injured person or persons suddenly taken ill to the nearest hospital.

4.0 DRINKING WATER

4.1 In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

4.2 Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

4.3 Every water supply of storage shall be at a distance of not less than 50 feet from any latrines drain or other source of pollution, Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap-door which shall be dust and water-proof.

4.4 A reliable pump shall be fitted to each covered well, trap-door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5.0 WASHING FACILITIES

5.1 In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of labour employed herein.

5.2 Separate and adequate screening facilities shall be provided for the use of male and female workers.

5.3 Such facilities shall be conveniently accessible and shall be kept clean and hygienic condition.

6.0 LATRINES AND URINALS

6.1 Latrines shall be provided in every work place on the following scale, namely:

a) Where females are employed there shall be at least one latrine for every 25 females.

b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females, as the case may be, up to the first 100, and one for every 50 thereafter.

6.2 Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

6.3 Construction of Latrines: The inside walls shall be constructed of masonry or some suitable heat resisting non-absorbent materials and shall be cement washed inside and outside at least once a year. Latrine shall not be a standard lower than borehole system.

6.4

(a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as the case may be.

(b) The notice shall also bear the figure of man or of women, as the case may be.

6.5 There shall be at least one urinal for male workers up to 50and one for female workers up to 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereof, thereafter.

6.6

a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

b) Latrines and urinals other than those connected with a flush sewerage system shall comply with the requirements of the Public Health Authorities.

6.7 Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

6.8 Disposal of Excreta

Unless otherwise arranged for by the local sanitary authority arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternatively excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or for refuse and then covering it with a layer of earth for fortnight (when it will turn into manure).

6.9 The Contractor shall, at his own expense, carry out all instruction issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor's workmen or employees on the site. The Contractor shall be responsible for payment of any charges, which may be levied by Municipal or Cantonment Authority for execution of such work on his behalf.

7.0 **PROVISION OF SHELTER DURING REST**

At every place there shall be provided, free of cost four suitable sheds, two for males and the other two for rest separately for the use of man and women labour. The height of each shelter shall not be less than 3 meters from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sqm. Per head, provided that the Engineer-in-Charges may permit, subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8.0 **CRECHES**

8.1 At every work place, at which 20 or more women workers are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedrooms.

The rooms shall be constructed on standard not lower than the following:

i) Thatched roof

ii) Mud floor and walls.

iii) Planks spread over the mud floor and covered with matting

8.2 The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

8.4 The Contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.

8.4 The Contractor shall provide one Ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.

8.5 The use of the rooms/earmarked as crèche shall be restricted to children, their attendant and mother of the children.

9.0 **CANTEENS**

9.1 In every work place where the work regarding the employment of contract labour is likely to continue for six months and wherein contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the Contractor for the use of such labour.

9.2 The canteen shall be maintained by the Contractor in an efficient manner.

9.3 The canteen shall consist of at least a dining hall, kitchen, store room, pantry and washing places separately for workers and utensils.

9.4 The canteen shall be sufficiently lighted at all times when any person has access to it.

9.5 The floor shall be made of smooth and impervious material and inside walls shall be lime washed or colour washed at least once in each year provided that the inside walls of the kitchen shall be lime-washed every four months.

9.6 The premises of the canteen shall be maintained in a clean and sanitary condition.

9.7 Waste Water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

9.8 Suitable arrangements shall be made for the collection and disposal of garbage.

9.9 The dining hall shall accommodate at a time 30 persons of the labour working at time.

9.10 The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chair shall not be less than one square meter per dinner to be accommodated.

9.11

a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.

b) Washing places for women shall be separate and screened to secure privacy.

9.12 Sufficient tables, stool, chairs or benches shall be available for the number of dinners to be accommodated.

9.13.1

a) There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment necessary for the efficient running of the canteen.

b) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition.

9.13.2

a) Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

b) A service counter, if provided, shall have top of smooth and impervious material.

c) Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

9.14 The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the labour.

9.15 The charge for foodstuffs, beverages and any other items served in the canteen shall be based on 'No profit No loss' and shall be conspicuously displayed in the canteen.

9.16 In arriving at price of foodstuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure, namely:

a) The rent of land building.

b) The depreciation and maintenance charges for the building and equipment provided for the canteen.

c) The cost of purchase, repair and replacement of equipment including furniture, crockery, cutlery and utensils:

d) The water charges and other charges incurred for lighting and ventilation:

e) The interest and amounts spent on the provision and maintenance and equipment provided for in the canteen.

9.17 The accounts pertaining to the canteen shall be audited once in every 12 months by registered accountants and auditors.

10.0 ANTI MALARIAL PRECAUTIONS

The Contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling up of any borrow pits which may have been dug by him.

11.0 AMENDMENTS

It is clarified by that C-DAC has floated and authored the present tender and therefore, C-DAC is the best judge as to how the document / tender have to be interpreted. C-DAC may from time to time, add to or amend these rules and issue such directions as it may consider necessary for the purpose of removing any difficulty which may arise in the administration hereof.

15.0 Contractor has to follow all the rules & regulations as per Labour Act and maintain all the records in the proper formats by obtaining from concerned labour department/office which are to be produced before the Owner / C-DAC / labour officers for inspection as & when asked.

CONTRACTOR'S LABOUR REGULATIONS

1.0 **SHORT TITLE**

These regulations may be called the Contractor "Labour Regulations".

2.0 **Definitions**

2.1 "**Workman**" means any person employed by the C-DAC or its Contractor directly or indirectly through a sub-contractor, with or without the knowledge, of the C-DAC to do any skilled, semi-skilled, un-skilled, manual, supervisory, technical or clerical work for hire or reward, whether, the terms of employment are expressed or implied but does not include any person-

a) Who is employed mainly in a managerial or administrative capacity; or

b) Who being employed in a supervisory capacity draws wages exceeding Rupees Two thousand Five hundred per person or exercises either by the nature of the duties attached to the office or by reason of powers vested to him, functions mainly of managerial nature.

c) Who is an outworker, that is to say, a person to whom any articles or materials are given out by or on behalf of the principal C-DAC to be made up cleaned, washed, altered, ornamental finished, repaired, adopted or otherwise processed for sale for the purpose of the trade or business of the principal C-DAC and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal C-DAC.

2.2 "**Fair Wages**" means wages whether for time or piecework fixed and notified under

the provisions of the minimum Wages Act from time to time.

2.3 "Contractor" shall include every person who undertake to produce a given result other than a mere supply of goods or articles of manufacture through labour or who supplies labour for any work and includes a sub-contractor.

2.4 "Wages" shall have the same meaning as defined in the Payment of Wages Act.

2.4.1 Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

2.4.2 When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.

2.4.3.1 Every worker shall be given a weekly holiday on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.

2.4.3.2 Whether the Minimum Wages prescribed by the Government under the Minimum Wage Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.

2.4.3.3 here a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substitute holiday to him for the whole day on one of the five days immediately before or after the normal weekly holidays and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

3.0 DISPLAY OF NOTICE REGARDING-WAGES, ETC.

The contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers, giving the minimum rates of wages fixed under the Minimum Wages Act, the actual wages being paid, the hours of work for which such wages are earned, wage period, dates of payment of wages and other relevant information as per Appendix 'A'.

4.0 PAYMENT OF WAGES

4.1 The contractor shall fix wage periods in respect of which wages shall be payable.

4.2 No wage period shall exceed one month.

4.3 The wages of every person employed as labour in an establishment or by a contractor where less than one thousand, such persons are employed shall be paid before the expiry of the seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

4.4 Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

4.5 All payments of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.

4.6 Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.

4.7 All wages shall be paid in current coin or currency or in both.

4.8 Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

4.9 A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgment.

4.10 It shall be the duty of the contractor to ensure the disbursement of wages in the presence of the Engineer or any other authorized representatives of the Engineer-in-Charge who will be required to be present at the place and time of disbursement of wages by the contractor to workmen.

4.11 The contractor shall obtain from the Engineer or any other authorized representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll" as the case may be in the following form:

"Certified that the amount shown in column No…..... has been paid to the workmen concerned in my presence on…..... at …....."

5.0 FINES AND DEDUCTIONS, WHICH MAY BE MADE FROM WAGES

5.1 The wages of a worker shall be paid to him without any deduction of any kind except the following-

a) Fines

b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

c) Deduction for damage to or loss of goods expressly entrusted to the employed persons for custody, or from loss of money or any other deduction which he is required to account where such damage or loss is directly attributable to his neglect or default

d) Deduction for recovery of advances or for adjustment of over payment of wages, advances granted shall be entered in a register.

e) Any other deduction, which the Central Government may from time to time allow.

5.2 No fines should be imposed on any workers in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.

NOTE: An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-I.

5.3 No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

5.4 The total amount of fine, which may be imposed in any one-wage period on a worker, shall not exceed an amount equal to three paise in Rupees of the total wages, payable to him in respect of that wage period.

5.5 No fine imposed on any worker shall be recovered from him in installment, or after the expiry of sixty days from the date on which it was imposed.

5.6 Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6.0 LABOUR RECORDS

6.1 The contractor shall maintain a "Register of persons employed" on work on contract in form XIII of the CL (R&A) Central Rules 1971 (Appendix-B).

6.2 The contractor shall maintain a "Muster Roll" register in respect of all workmen employed by him on the work under contract in from XVI of the CL (R&A) Rules 1971 (Appendix-C).

6.3 The contractor shall maintain a "Wage Register" in respect of all workmen employed by him on the work in form (Appendix-D).

6.4 Register of accidents – The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full particulars of the labourers who met with accident.

b) Rate of wages

c) Sex

d) Age

e) Nature of accident and cause of accident.

f) Time and date of accident.

g) Date and time when he/she admitted in Hospital

h) Date of discharge from the Hospital

i) Period of treatment and result of treatment

j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.

k) Claim required to be paid under Workmen's Compensation Act.

l) Date of payment of compensation.

m) Amount paid with details of the person to whom the same was paid.

n) Authority by whom the compensation was assessed.

o) Remarks.

6.5 Register of Fines – The contractor shall maintain a "Register of Fines" in the form

(Appendix-H)

The contractor shall display in a good condition and in a conspicuous place of work the approved list of Acts and Omission for which fines can be imposed (Appendix-I).

6.6 Register of Deductions-The contractor shall maintain a "Register of Deductions" for damage or loss in form (Appendix-J).

6.7 Register of Advances-The contractor shall maintain a "Register of Advances" in form (Appendix-K).

6.8 Register of Overtime-The contractor shall maintain a "Register of Overtime" in form (Appendix-L).

7.0 ATTENDANCE CARD-CUM WAGE SLIP:

7.1 The contractor shall issue an attendance card-cum-wage slip to each workman employed by him in the specimen form at (Appendix-E).

7.2 The card shall be valid for each wage period.

7.3 The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

7.4 The card shall remain in possession of the worker during the wage period under reference.

7.5 The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

7.6 The contractor shall obtain the signature or thump impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

8.0 **EMPLOYMENT CARD**

The contractor shall issue an Employment Card in form to each worker within three days of the employment of the worker (Appendix-F).

9.0 **SERVICE CERTIFICATE**

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a service certificate in from Appendix-G.

10.0 **PRESERVATION OF LABOUR RECORDS**

All records required to be maintained under Regulations Nos. 6 and 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge, Labour Officer.

11.0 **POWER OF LABOUR OFFICERS TO MAKE INVESTIGATIONS INQUIRY**

The Labour Officer or any other person authorized by C-DAC on its behalf shall have power to make inquires with a view to ascertaining and enforcing due and proper observance of the Fair Wage Clauses and the Provisions of Regulations. He shall investigate into any complaint regarding the default made by the contractor or sub-contractor in regard to such provision.

12.0 **Inspection of Book and slips**

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour officer or any other person, authorized by the Central Government on his behalf.

13.0 **Submission of Returns**

The contractor shall submit periodical returns as may be specified from time to time.

14.0 **Amendments**

The C-DAC may from to time, add or amend the regulations and on any question as to the application, interpretation or effect of these regulations the decision of the C-DAC concerned shall be final.

15.0 Contractor has to follow all the rules & regulations as per Labour Act and maintain all the records in the proper formats by obtaining from concerned labour department/office which are to be produced before the Owner / C-DAC / labour officers for inspection as & when asked.

SPECIAL CONDITIONS OF CONTACT (SCC)

SPECIAL CONDITIONS OF CONTACT (SCC)

The following special conditions shall be read in conjunction with General Conditions of contract, if there are any provisions in these Special Conditions, which are at variance with the provisions of General

Conditions of Contract, the provisions in these special Conditions shall prevail.

(1) The work in general shall be carried out as per CPWD/NBC (2016)/ Local Municipal byelaws/specification updated with correction slips issued up to last date of submission of tender.

(2) For items not covered under CPWD/NBC (2016)/ Local Municipal Specification, as above, the work shall be done as per latest relevant ISI /BIS Codes of practice.

INTRODUCTION

1.0 LOCATION/APPROACH TO SITE: The proposed site is in **Sector-12**, **Chikhali, Pune, Maharashtra.**

2.0 LETTER OF UNDERTAKING

The tender shall be accompanied by Letter of acceptance of tender conditions as per proforma given in this tender document.

3.0 Any tender not accompanied by Letter of acceptance in accordance with aforesaid provision of notice Inviting Tender and Instructions to Tenderer shall be rejected.

4.0 Once the Tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s)(except unconditional rebate on price ,if any)in/along with the tender.

5.0 SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the tenderer/bidder shall visit the site, its surrounding, access and satisfy themselves about the local conditions such as approach roads to the site, availability of water & power supply, application of taxes, duties and levies as applicable, nature of ground, soil and subsoil condition, underground water table level, accommodations they may require etc., river regime, river water levels, other details of river, streams & any other relevant information required by them to execute complete scope of work. The tenderer may obtain all necessary information as to risks, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender. Tenderer shall consider all site conditions and get satisfied himself in all respect before quoting

his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by the C-DAC at a later date.

6.0 TRANSFER OF BID DOCUMENTS

Transfer of bid documents purchased by one intending bidder to another is not permissible.

7.0 The C-DAC reserves the right to award the work to a single party or to split the work amongst two or more parties as deemed necessary without assigning any reason whatsoever.

8.0 ESCALATION PAYMENT / PRICE VARIATION ADJUSTMENT

Clause 10 (CC) of CPWD as per CPWD GCC 2020 is applicable for Payment due to Increase/Decrease in Prices/Wages (excluding materials covered under clause 10 CA of CPWD) after Receipt of Tender for Works.

The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extension, if any.

It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between C-DAC and the contractor; the contractor shall become entitled to payment only after C-DAC has approved the submitted escalation. Any delay in approval of escalation shall not entitle the contractor to any compensation/ interest from C-DAC.

9.0 The Item/Percentage rates and prices to be tendered in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment / overheads, together with preparation of designs drawings pertaining to casting yard (if required). Staging from work, stacking yard, etc, all general risk, taxes, GST, insurance liabilities and obligations set out or implied in the tender documents and contract.

10.0 The materials products used on the works shall be one of the approved makes/brands out of list of manufacturers / brands /makes given in the tender documents. The contractor shall submit samples /specimens out of approved makes of materials /products to the engineer in charge for prior approval. In exceptional circumstances engineer in charge may allow alternate equivalent makes / brands of products / materials at his sole discretion. The final choice of brand / make shall remain with the engineer in charge, whose decision in the matter shall be final and binding and nothing extra on this account shall be payable to the contractor.

Incase single brand / make are mentioned, other equivalent makes brands may be considered by the engineer in charge with prior approval .Incase of variance in CPWD's specification from approved products makes specification the specification of approved products make shall prevail for which nothing shall be paid extra to the contractor.

11.0 Within 10 (Ten) days of issuance of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) along with quarterly milestones and resources plan for man, material & machinery to achieve the milestones and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of item of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work.

12.0 AMENITIES TO BE PROVIDED BY CONTRACTOR TO C-DAC

On account of furnished Project office equipped with all facilities such as telephone, fax, internet, photocopier, computer/ laptop & printer along with operator, regular electric & purified drinking water supply and inspection vehicle etc. as per the requirement of the project. If failed an amount equal to 1.0 % of gross bill from all running account & final bill will be recovered.

The contractor shall also make sufficient arrangement for Photography/ Videography preferably by maintaining a camera/video camera at site so that video photographs can be taken of a specific activity at any point of time. The contractor shall also provide software like MS Project etc. for the purpose of preparing progress report etc.

13.0 The contractor if required shall demolish old structures on the proposed site properly. The useful material shall be the property of the owner /C-DAC and these materials shall be stacked in workmanship like at the place specified by the Engineer-in-Charge.

14.0 The contractor shall provided safety equipment and gadgets to all their workers, Supervisors and technical staff engaged in the execution of the work while working. The equipment and gadgets shall also be provided to C-DAC by the contractor at his own cost for use of C-DAC officials and /or workforce. The cost of the above equipments /gadgets shall be included in the rates quoted by the contractor for the items & works as per bill of Quantities and contractor shall not be entitled for any extra cost in this regard. The above norm is to be strictly complied with at site .In case the contractor is found to be deficient in providing

safety equipment/ gadgets in opinion of engineer- in - charge, the engineer in charge at his option can procure the same at the risk & cost of contractor and provide the same for the use at work site and shall make the recoveries from the bills of the contractor for the same. The decision of the engineer -in -charge shall be final and binding on contractor in this regard.

15.0 The tenderer shall quote his rates inclusive of all taxes to Central/State Government along with other taxes, duties, levies etc. in conjunction with other terms and conditions.

16.0 If required, the contractor has to do site clearance, enabling work, barricading, shifting /realignment of existing utility services etc at his own cost and the contractor shall not be entitled for any extra payment whatsoever in this regard.

17.0 In case of any sort of anomalies and/or typing error in the nomenclature, rates, & Description etc. of the items indicated in the Price bid / BOQ of scheduled items must be read as per respective schedule such as latest CPWD-2021 or latest.

18.0 Contractor has to submit a Construction Program within 10 days of issue of LOA/LOI. Contractor has to make provision for double shift, to complete the work in the stipulated time with lighting arrangement for night shift.

19.0 Unless otherwise provided in the schedule of quantity, rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads, & depths of the building and nothing extra shall be paid to him on this account.

20.0 All drawings shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of the quantities appended with the tender and architectural drawings relating to relevant item, the former shall prevail unless and otherwise given in writing by the engineer in charge.

21.0 The contractor shall be required to produce samples of all building materials and fittings sufficiently in advance to obtain approval of the Engineer-in charge.

22.0 The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable.

23.0 The rate of all items in which use of cement is involved inclusive of all charges for curing.

24.0 MODE OF PAYMENT

AS per GCC conditions

25.0 The rate quoted by the contractor shall be deemed to be inclusive of all taxes as per the laws applicable in the State/central government and charges of Third Party Quality Audit (TPQA) from IIT/VJTI/NIT/Government department engaged in building construction works. Third party Quality Audit agency shall be deployed with prior approval of C-DAC.

26.0 The stamp duty if any on the contract agreement levied by the Government or any other statutory body shall be paid by the contractor.

27.0 Contractor will be responsible for obtaining connections of water, sewerage and electricity from the concerned authority to ensure their proper commissioning so that no defects in operation of connections exist, by carrying out necessary tests etc. C-DAC/Client will render requisite assistance in making application etc for the purpose.

28.0 All designs and drawings shall be supplied by C-DAC for execution of work. However, it shall be the duty and responsibility of contractor to bring to the notice of the C-DAC in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of the C-DAC in writing for the same.

29.0 The contractor shall be responsible for safety, quality and soundness of the Structure including structural elements beyond maintenance period. The contractor shall have obligation to rectify such defects minimum up to 01 (One) years from the date of completion of work. The defects have to be rectified within a reasonable time not exceeding forty five days after issue of notice by Engineer-in- Charge. If contractor does not take corrective action within 45 days, then action for debarring of the agency shall be taken by the appropriate authority.

30.0 CDAC has appointed **M/S NPCC (National projects Construction Corporation Limited)** as **Design Cum PMC/ Project Management Consultant** for this project . M/S NPCC or any other third party agency /Firm/Consultant/Technical Advisor deployed by C-DAC shall have authority to act on behalf of C-DAC for technically monitoring and managing the project. PMC shall be responsible to control or change of Construction means, method, techniques, sequences or procedures, or for safety precautions, bill measurements certifications, bill payment recommendations to CDAC and program in connection with the works or the temporary works. In case of any confusion /conflict for interpretation of any clause/specification between PMC and Contractor , CDACs decision will be final and binding on all the parties.

31.0 Contractor/agency will not have any authority to revise the estimate. If any changes are required, it will be proposed by Contractor/agency to C-DAC. Revised estimate will be sanctioned by C-DAC as per delegation of power. However, in the interest of project, permission of competent authority can be obtained before

executing the variation, pending sanction of Revised Estimate.

32.0 Contractor/Agency shall resolve the right of way issues for the project but in critical situations, C-DAC shall extend necessary support towards the same being owner of the project. Statutory clearances such as Forest clearance etc. shall also be taken by Contractor and C-DAC shall provide any statutory notification/letters etc. required for this purpose.

33. Day-to-day coordination with the local authorities and bodies will be the responsibility of Contractor.

34. Contractors shall ensure the safety of existing traffic as per the extant guidelines of CPWD & ensure compliance to various applicable Statutory requirements during execution of this work.

35. 100% responsibility to ensure safe working during construction and ensuring no damage to working/existing cables would be of Contractor responsibility and in case of any damage to the same, the decision of C-DAC would be final in this regard.

36. In case of various specifications/SOR, CPWD specification shall prevail over and above all.

37. Green Building Concept is desired by the C-DAC. Contractor is required to comply as per the latest GRIHA Manual. Minimum GRIHA 3-star certificate is desired by the C-DAC for the project.

38. CDAC reserves the right to have the work inspected and certified independently by third party agency /technical advisor/consultants appointed by CDAC.

CDAC may withhold/deduct payments for the non-satisfactory work of the contractor.

39. The selected bidder must indemnify CDAC and its stakeholders against all third party claims of intellectual property rights infringement including infringement of patent, trademark/copyright or industrial design rights arising from the use of the services, designs, codes, chips etc. and related services or any part thereof. CDAC and its stakeholders stand indemnified from any claims that the hired manpower / bidder vendor's manpower may opt to have towards the discharge of their duties in the fulfillment of the purchase orders/contract. CDAC and its stakeholders also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the hired manpower / bidder's manpower while discharging their duty towards fulfillment of the purchase orders/contract.

40. Bidder shall be liable to C-DAC for any indirect or consequential loss or damage (including loss of revenue and profits) arising out of or relating to the Tender.

Except in the case of Gross Negligence or Willful Misconduct on the part of the successful bidder or on the part of any person acting on behalf of the successful bidder executing the work or in carrying out the Services, the successful bidder, with respect to damage caused by the successful bidder including to property and/or assets of CDAC or its stakeholders shall regardless of anything contained herein, not be liable for any direct loss or damage that exceeds (A) the Support Amount or (B) the proceeds the Selected Agency may be entitled to receive from any insurance maintained by the Selected Agency to cover such a liability, whichever of (A) or (B) is higher. This limitation of liability slated in this Clause, shall not affect the successful bidder's liability, if any, for damage by successful bidder to a Third Party's real property, tangible personal property or bodily injury or death caused by the successful bidder or any person acting on behalf of the successful bidder in executing the work or in carrying out the Services and shall also not affect indemnity provisions under other clauses.

41. All remedies under this Agreement are cumulative and are in addition to and independent of each other.

42. The bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this RFP, CDAC shall reject a Proposal without being liable in any manner whatsoever to the bidder, if it determines that the bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, C-DAC shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Authority for, inter alia, time, cost and effort of the Authority, in regard to the RFP, including consideration and evaluation of such bidder's Proposal. Without prejudice to the rights of the C-DAC under Clause above and the rights and remedies which C-DAC may have under the Agreement, if abidder, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice,fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the execution of the Agreement, such bidder shall not be eligible to participate in any tender or RFP issued by MeitY during a period of 2 years from the datesuch bidder, as the case may be, is found by C-DAC to have directly or through an agent,

engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

I. "corrupt practice" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of C-DAC who is or has been associated in any manner, directly or indirectly with the Selection Process or has dealt with matters concerning the Agreement or arising therefrom, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in theservice of C-DAC, shall be deemed to constitute influencing the actions of a person connected with the Selection Process); or (ii) save as provided herein, engagingin any manner whatsoever, whether during the Selection Process or after the execution of the Tender, as the case may be, any person inrespect of any matter relating to the Project or the Tender, who at any time has been or is a legal, financial or technical consultant/ adviser of C-DAC inrelation to any matter concerning the Project;

II. "fraudulent practice" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;

III. "coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participationor action in the Selection Process;

IV. "undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by C-DAC with the objective of canvassing,lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and

V. "restrictive practice" means forming a cartel or arriving at any understanding or arrangement among bidders with the objective of restricting or manipulating a fulland fair competition in the Selection Process.

43. Failure of the successful bidder to agree with the Legal Agreement and Terms &Conditions of the RFP shall constitute sufficient grounds for the annulment of the award, in which event CDAC may award the contract to the next lowest quoting bidder or call for new proposals from the interested bidders. In such a case, the C-DAC shall invoke the EMD and/or Performance Bank Guarantee and/or Bank Guarantee against Advance of the defaulting bidder.

44. MOBILISATION ADVANCE:

Mobilization advances not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within six months of the order to commence the work. Such advance shall be released in two or more installments to be determined by the Engineer-in-Charge at his sole discretion. The first installment of such advance shall be released by the Engineer-in-charge to the contractor on a request made by the contractor to the Engineer-in-Charge in this behalf. The second and subsequent installments shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment(s) to the satisfaction of the Engineer-in-Charge. Before any installment of advance is released, the contractor shall execute Bank Guarantee Bonds not more than 6 (six) in number from commercial Bank for the amount equal to 110% of the amount of advance and valid for the period till recovery of advance. This (Bank Guarantee from commercial Bank on prescribed format for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

The mobilization advance bear simple interest at the rate of 8 percent per annum and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractors bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty percent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.

If the circumstances are considered reasonable by the Engineer-in-Charge, the period mentioned in (ii) for request by the contractor in writing for grant of mobilization advance may be extended at the discretion of the Engineer-in-Charge.

41. <u>Payment:</u>-

I. The Contractor shall periodically submit **Running Account (RA) bills** in the prescribed CPWD Performa for the work done provided it is **not less than Rs.5 crs**. All running bills shall be accompanied with the photographs in sufficient nos. and angles illustrating the progress of work and for which claims raised in RA bill is evident. The photographs shall be duly signed by the contractor. The bills should be accompanied by

supporting joint measurement sheets certified by PMC(M/S NPCC) , drawings, applicable reports and any other documents required by CDAC. The bills should be certified for payment by PMC(M/S NPCC) before forwarding to CDAC.

II. The bills not submitted on the CDAC prescribed format may not be considered for payment.

III. Statutory deduction at source/TDS shall be deducted on prescribed norms of the Govt. enforce time to time from the bills.

45. Penalty for Delayed Delivery/ Compensation for Delay: -

The completion of this project is a time critical and cost sensitive activity for CDAC.This engagement with the selected agency is based on the premise that agency would do everything to ensure that the project is completed positively in the timeframe of 24 months as specified including the monsoon period and mobilization period.

If the contractor fails to omplete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the C-DAC on account of such breach, pay as agreed compensation the amount calculated at the rates @ 1% per week on the amount of accepted tendered value of the work for every completed week of delay that the progress remains below that specified in the relevant clause in Special Conditions of Contract or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified.

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the accepted Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with C-DAC.

However, if the delay is beyond 10 weeks, CDAC reserves the right to terminate the contract .In this case, CDAC reserves the right to forfeit the retention money held by CDAC.

Delay in completion of project if any attributed to force majeure situation or attributed to CDAC will not be considered for computing the penalty amount.

46. **Statuatory Requirements**:-

i. It is the responsibility of the contractor for getting the all approval from the local statutory authorities such as town planning / municipal authorities / electricity board / fire / forest department etc. and other department for the total / entire works executed at site as per the approved plans and designs etc.

ii. The contractor is responsible for Liaison & obtaining the connection for water supply, sewer connection, electric connection and other connections if any from local authorities/state Electricity board. However, the statuary payments payable to Govt. department shall be paid by CDAC directly to the concerned authorities. If any statutory charges/fee to be paid by contractor directly to the local/statutory authorities on behalf of client the same shall be reimbursed to contractor on submission of proper receipt .In case of lifts the statutory fees shall in scope of contractor and shall not be reimbursed.

iii. The contractor shall have to obtain all Approvals including excavation by blasting, Commencement Cetificate for construction , Connections/ NOCs/Completion Certificates/ Occupancy Certificate,GRIHA 3 star certficate etc from the concerned Local/Statutory authorities/GRIHA authorities for civil & electrical , Sewerage works, Water Supply works, Fire Fighting work, Fire Alarm system work, DG set pollution control board, Passenger / Goods lifts , and/or any other works required for completion of project etc. at his own cost and nothing extra other than statutory fee/charges shall be payable on this account to the contractor.

However, the letters required from the client for the needful stated purposes will be arranged by PMC (M/S NPCC) from the CDAC as per the request of contractor.

iv. The contractor is advised to quote his rates for different works considering the above factors and all conditions given in NIT and SCC, GCC.

FORMATS

Appendix – 'A'

LABOUR BOARD

S. No.	Description	
1.	Name of work	
2.	Name of Contractor	
3.	Address of Contractor	
4.	Name and Address of UNIT	
5.	Name of Labour Enforcement Officer	
6.	Address of Labour Enforcement Officer	
7.	Date:	

S. No	Category	Minimum Wages fixed	Actual Wages fixed	Numbers present	Remarks

Weekly Holiday	
Wage Period	
Date of Payment of wages	
Working hours	
Rest interval	

Appendix – 'B'

FORM 13

See rule 75 REGISTER OF WORKMEN EMPLOYED BY CONTRACTOR

Sl.No.	Description	
	Name and Address of Contractor	
	Name and Address of Establishment in/ under which contract is carried on	
	Nature and location of work	
	Name & Address of Principal C-DAC	
1	Sl. No.	
2.	Name and surname of workman	
3.	Age & sex	
4.	Father's/ Husbands Name	
5.	Nature of employment / designation	
6.	Permanent home address of the workman (village and Taluka and District)	
7.	Local address	
8.	Date of commencement of employment	
9.	Signature or thumb impressions	
	of the workman	
10.	Date of termination of employment	
11.	Reasons for termination	
12.	Remarks	

Appendix – 'C'

FORM XVI
(See Rule 78(2) (193)

MUSTER ROLL

SL.No.	Description	
	Name and address of contractor	
	Name and address of establishment in/under	
	which contract is carried on	
	Nature and location of work	
	Name and Address of Principal C-DAC	
	For the month / fortnight	
1.	S. No.	
2.	Name of the workman	
3.	Sex	
4.	Father's/Husband's Name	
5.	Dates (1, 2, 3, 4, 5, ----------12, 13, 14, 15)	
6.	Remarks	

Appendix – 'D'

FORM XVII
[See Rule 78(2) (03)]

REGISTER OF WAGES

	Name and address of contractor	
	Name and address of establishment in/under which contract is carried on	
	Nature and location of work	
	Name and Address of Principal C-DAC	
	Wage period: per month/ fortnightly	
1	Sl. No.	
2	Name of Workman	
3	Serial No. in the register of workman	
4	Designation /nature of work done	
5	Nos. of days worked	
6	UNITs of work done	
7	Daily rate of wages/ piece rate	
8	Basic rate of Wages	
9	Dearness allowance	
10	Overtime	

11	Other cash payments (Nature of payments to be indicated)	
12	Total	
13	Deduction if any (indicate nature)	
14	Net amount paid	
15	Signature thumb impression of the workman	
16	Initials of contractor or his representatives	

Appendix - 'E'

FORM XIX
[SEE RULE 78 (2) (B)]

W A G E S L I P

	Name and address of contractor	
	Name and Father's/Husband's Name of workman	
	Nature and location of work	
	For the Week/Fortnight/Month ending	
1	No. of days worked	
2	No. of UNITs worked in case of piece rate works	
3	Rate of daily wages/piece rate	
4	Amount of overtime wages	
5	Gross wages payable	
6	Deductions if any	
7	Net amount of wages paid	
	Sign of the Contractor	
	Received the sum of Rs.----------	
	towards my wages for the above period.	

Sign.of workman: ----------

Appendix – 'E'

WAGE CARD

Wage Card No. &	Date of Issue
	Month/Fortnight
Name and address of Contractor	
Nature of work with location	Designation
Name of workman	

Rate of Wages

Dates	Morning	Evening	Rate	Amount	Initials
1	2	3	4	5	6

Received from the sum of Rs. on account of my wages.

Signature

The wage card is valid for one month from the date of issue.

Appendix – 'F'

FORM XIV
(See Rule 76)

EMPLOYMENT CARD

Sl.No.	Description	
	Name and address of contractor	
	Name and address of establishment under which	
	the contract is carried out	
	Nature and location of work	
	Name and address of Principal C-DAC	
1	Name of the workman	
2	Sl. No in the register of workman employed	
3	Nature of Employment/Designation	
4	Wage rate (with particulars of unit in case of piece work)	
5	Wage Period	
6	Tenure of employment	
7	Remarks	

Signature of Contractor

Appendix – 'G'

Form XV
(See Rule 77)

SERVICE CERTIFICATE

Name and address of contractor	
Nature and location of work	
Name and address of workman	
Age or date of birth	
Identification Marks	
Father's/Husband's Name	
Name and address of establishment in/under which	
contract is carried on	
Name and address of Principal C-DAC	
Total period of which employed	

S. No.	From	To	Nature of work	Rate of wages	Remarks

With particulars of unit
in case of piece work)

Signature

Appendix – 'H'

Form Xii
[See Rule 78 (2) (D)]

REGISTER OF FINES

Name and address of contractor	
Name and address of establishment in/ under which	
contract is carried on	
Nature and location of work	
Name and address of workman	
Name and address of Principal C-DAC	

SNo.	Name of	Father's /	Designation/nature	Act/Omission	Date of offence
	Workman	Husband Name	of employment		for which fine impose
1	2	3	4	5	7

8	Whether workman showed causes against fine	
9	Name of person in whose presence employees explanation was heared	
10	Wages period and wages payable	
11	Amount of fine imposed	
12	Date on which fine realized	
13	Remarks	

Appendix – 'I'

LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule of Labour Regulations, to be displayed prominently at the site of work both in English and local language.

1	Willful insubordination or disobedience, whether alone or in combination with other.
2	Theft, fraud or dishonestly in connection with contractors beside a business or property.
3	Taking or giving bribes or any illegal gratifications.
4	Habitual of Late attendance.
5	Drunkenness fighting riotous or disorderly or indifferent behaviors.
6	Habitual negligence.
7	Smoking near or around the area where combustible or other materials are locked.
8	Habitual indiscipline.
9	Causing damage to work in the progress or to property of the C-DAC or of the contractor.
10	Sleeping on duty.
11	Malingering or slowing down work.
12	Giving the false information regarding name, age, fathers name etc.
13	Habitual loss of wage cards supplied by the C-DAC.
14	Unauthorized use of C-DACs property or manufacturing or making of unauthorized articles at the work place.
15	Bad workmanship in construction and maintenance by skilled workers, which is not approved by the C-DAC for which the contractors are compelled to undertake rectifications.
16	Making false complaints and/or misleading statements.

17	Engaging on trade within the premises of the establishment.
18	Any unauthorized divulgence of business affairs of the employees.
19	Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the C-DAC.
20	Holding meeting inside the premises without previous sanction of the C-DACs.
21	Threatening or intimidating any workman or employee during the working hours. .

Appendix – 'J'

Form XX

[See Rule 78 (2) (D)] REGISTER OF DEDUCTIONS FOR DAMAGES OR LOSS

	Name and address of contractor	
	Name and address of establishment in/ under which	
	contract is carried on	
	Nature and location of work	
	Name and address of Principal C-DAC	
1	S. No.	
2	Name of workman	
3	Father's/Husband's Name	
4	Designation/nature of employment	
5	Particulars of damage or loss	
6	Date of damage/loss	
7	Date of recovery	
8	Whether workman showed cause against deductions	
9	Name of person in whose presence employees explanation was heard	
10	Amount of deduction Imposed	
11	No. of installment	
12	First Installment Last Installment	
13	Remarks	

Appendix – 'K'

Form XXII

[See Rule 78(2)] EGISTER OF ADVANCES

	Name and address of contractor	
	Name and address of establishment in/ under which	
	contract is carried on	
	Nature and location of work	
	Name and address of Principal C-DAC	
1	S. No.	
2	Name of workman	
3	Father's/Husband's Name	
4	Designation/nature of employment	
5	Wages period and wages payable	
6	Date and amount of advance given	
7	Purpose / for which advance made	
8	No. of installments by which advance is to be paid	
9	Date and amount of each installment repaid	
10	Date on which last installment was repaid	
11	Remarks	

Appendix – 'L'

Form XXIII

[See Rule 78(2) (E)]

REGISTER OF OVERTIME

	Name and address of contractor	
	Name and address of establishment in/ under which	
	contract is carried on	
	Nature and location of work	
	Name and address of Principal C-DAC	
1	S. No.	
2	Name of workman	
3	Father's/Husband's	
4	Sex	
5	Designation/nature of employment	
6	Date on which overtime worked	
7	Total overtime worked or production in case of piece rated	
8	Normal rate of wages	
9	Overtime rate of wages	
10	Overtime earning	
11	Rate on which overtime wages paid	
12	Remarks	

Appendix – 'M'

APPLICATION FOR EXTENSION OF TIME

(To be completed by the Contractor)

P A R T –I

1. Name of Contractor

2. Name of the work as given in the Agreement

3. Agreement No.

4. Estimated amount put to tender

5. Date of commencement work as per agreement

6. Period allowed for completion of work as per agreement

7. Date of completion stipulated as per agreement

8. Period for which extension of time has been given previously

Extension granted

a) First extension vide Engineer-in- charge letter No… …….. date Months Days

b) 2nd extension vide Engineer-in- charge letter No…….date Months Days

c) 3rd extension vide Engineer-in- charge letter No…… date Months Days

d) 4th extension vide engineer-in- charge letter No……date Months Days

Total extension previously given

9. Reasons for which extension have been previously given (copies of the previous application should be attached)

10. Period for which extension is applied for :

11. Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last.

a) Serial No.

b) Nature of hindrance

c) Date of Occurrence

d) Period for which it is likely to last

e) Period for which extension required for this particular hindrance.

f) Over lapping period, if any, with reference to item

g) Net extension applied for

h) Remarks, if any

Total period for which extension is now applied for on account of

hindrances mentioned above ……. Month/ days.

12. Extension of time required for extra work.

13. Details of extra work and on the amount involved:

a) Total value of extra work

b) Proportionate period of extension of time based on estimated amount put to tender on account of extra work.

14. Total extension of time required for 11 & 12

Submitted to the Engineer-in-Charges office.

SIGNATURE OF CONTRACTOR

DATE

APPLICATION FOR EXTENSION OF TIME

(PART – II)

1. Date of receipt of application from the Contractor
in the Engineer-in-charge's office.

2. Acknowledgement issued by Engineer-in-charge
Vide his letter No dated

3. Engineer-in-charge remarks regarding hindrances
mentioned by the Contractor.

i) Serial No.

ii) Nature of hindrance

iii) Date of occurrence of hindrance

iv) Period for which hindrance, is likely to last

v) Extension of time period applied for by the contractor

vi) Over lapping period, if any, giving reference to items which over lap

vii) Net period for which extension is recommended.

viii) Remarks as to why the hindrance occurred and
justification for extension recommended.

4. Engineer-in-charge recommendations.

(The present progress of the work should be stated and whether the work is likely to be completed by the date up to which extension has been applied for. If extension of time is not recommended, what compensation is proposed to be levied under the agreement?

SIGNATURE OF ENGINEER-IN-CHARGE
APPROVAL OF C-DAC

PROFORMA FOR EXTENSION OF TIME

P A R T –III

To,

NAME
ADDRESS OF THE CONTRACTOR

SUBJECT:

Dear Sir(s)

Reference your letter No _____ dated _____ , in connection with the grant of extension of time for completion of the work…..

The date of completion for the above mentioned work, is …… …… as stipulated in the agreement, dated ……

Extension of time for completion of the above-mentioned work is granted up to _____, without prejudice to the right of the C-DAC to recover compensation for delay in accordance with the provision made in the relevant Clause (s) of the said agreement dated the ___/ ___/ ___. It is also clearly understood that the C-DAC shall not consider any revision in contract price or any other compensation whatsoever due to grant of this extension.

Provided that notwithstanding the extension hereby granted, time is and shall still continue to be the essence of the said agreement.

Yours faithfully,

FOR C-DAC

GRIHA

GRIHA (Green Rating for Integrated Habitat Assessment)

The project is undergoing a process for green building certification of minimum GRIHA -Three(03) Star under the GRIHA V 2019 or latest rating system. **The green rating requires documentation and proof for submission in order to help the project to achieve the points attempted**. Also, GRIHA V 2019 has a few mandatory and partly mandatory criteria which MUST be met by the project. In case the project team fails to provide the proofs then the project is ineligible for the GRIHA rating. It is binding for the contractor to keep the site in compliance with the GRIHA norms and follow the instructions as provided in the Conditions for site management document as per GRIHA V 2019.

The contractor MUST provide the required details in the form of drawings, specification sheets, technical datasheets, logs, purchase orders/ invoices/ bills, photographs, scrap challans or proofs for scrap handling, material specification sheets, reports, tests etc.as directed by the Design Architect cum PMC / GRIHA consultant/Client. **The contractor must be careful and must appoint and consult a GRIHA consultant at their end for the project** with due intimation to PMC and Client. **The contractor must consult GRIHA consultant & PMC and take approval of Client (CDAC)** while making the selection for the following materials/ specifications/ equipment etc.:

1. Mix design for the concrete
2. Type and make of PPC to be used.
3. Materials with recycled content like steel, tiles, gypsum boards, dado, window frames etc.
4. Façade glazing
5. HVAC equipment
6. Lighting fixtures
7. DG sets
8. Transformers
9. Pumps & motors
10. High SRI finishes for roof and non-roof areas.
11. Materials for paving, roadworks etc.
12. Furniture and resins used
13. Paints, adhesives, sealants
14. Building insulation
15. Air Quality Sensors
16. Plumbing fixtures
17. Energy & water meters

The contractor is responsible for overall management with GRIHA authorities, GRIHA Consultant, Design Architect and PMC for successful minimum GRIHA Three (03) certification of project.

CDAC will only pay for the statutory fees for registrations of the project and other statutory requirements under GRIHA Certification process after production of challans. Contractor is responsible for arranging all necessary documentations with revisions, drawings with revisions, arranging and coordinating including to and fro tour, lodging /stay of GRIHA officials during site visits and site audits for successful certification of the project. CDAC will not pay any incidental expenditure in this regard.

LIST OF APPROVED MAKES

The Contractor shall provide samples of all material in the list of make. The contractor in consultation with **GRIHA Consultant and PMC** propose the makes of items to be used in the respective category of the project for the approval of client before execution to achieve required minimum GRIHA three star rating.

A. CIVIL WORKS

Sl.No.	Material	Make
1	Cement	ACC/Ultratech/BIRLA/JK/Ambuja
2	TMT Reinforced Steel	SAIL/ TATA/Jindal/Shyam Steel/Radha/SRMB
3	Mild Steel	Jindal/Mahavir / Swastik/Shyam Steel/ Radha/SRMB
4	Anti-Termite Chemical	Vam Organic/Hindustan Insecticide/Bayer/ICI
5	Water Proofing Chemicals	CICO/Dr.Fixit/Pidilite/STP
6	Wall Putty	Birla/JK/Jhonson
7	Aluminium Sections	Hindalco/Jindal/ OASIS
8	Vitrified Tiles	Marbito/Kajaria/Somany/Orient Bell/OASIS/NITCO
9	Ceramic Tiles	Marbito/Kajaria/Somany/Orient Bell/ OASIS/ NITCO
10	Enamel paint	Dulux/ICI/Asian/ Berger
11	Texture Paint	Dulux /Spectrum/Unistone/ Asian/ Berger
12	Cement Paint	Dulux /Snowcem/ICI/Asian/Berger
13	Sanitary ware	Hindware/Parryware/Cera
14	CP Fittings	Cera/Jaquar/Marc/Hindware
15	UPVC SWR pipes & Fittings	Supreme/Finolex/Prince/Kissan/AKG
16	SCI Pipes & Fittings	NECO/SRIF/RIF
17	GI & MS Pipes	Jindal Hissar/Prakash Surya/Swastik
18	CPVC Pipes	Astral/Ajay/Ashirwad/Prince/Supreme
19	GI Fittings	UNIK/DRIP-M/ZOLOTO/"R"/ Jindal
20	Ball Valves	Zoloto/DRP/Sant
21	CI Valves(>65mm dia)	Kirloskar/Leader/Sant/ Audco/Zoloto/Sant
22	50mm dia and above	Audco/Veeson/KSB/Zoloto/Sant
23	Ferrules/Ballcocks/Water level Fittings	DRP/Zoloto/Leader/Sant
24	Pressure Regulating valves	DRP/Zoloto/Kartar/CIm
25	Garden Irrigation Sprinklers	Rainbird/Harvel/Premier/Jain

26	Stoneware Pipes & Gully Traps	Perfect/Ananad
27	RCC Pipes	Pragati/JSP
28	SFRC Manholes Covers & Gratings	KK/RPMF
29	CI-LA/DI Fittings	Kartar/Neer
30	False Ceiling	USG Boral/Anutone/Armstrong/AMF
31	GYPSUM BOARD /Wall Paneling (wooden/Acoustical)	USG Boral /Anutone/ Armstrong /India Gypsum/ Lafrage BORAL/ RAMCO
32	Tensile Fabric	Royal Tensile Structure
33	Metal Roofing System	Colortop/Armstrong/USG Boral
34	Running Track/Badminton/Volleyball Court	Sports Surfacing Pro/ Quality Sports Surface
35	Manhole C.I. cover and frame	NECO.BIC/RPMF
36	CI pipes and fittings	NECO.BIC/RPMF
37	Plywood/Block Board/Vineer	Legend/Archid ply/Green ply/Kanchan ply
38	Flush Doors	Legend /Archid ply/Green ply/Kanchan ply

B. FIRE FIGHTING WORKS

1	MS Pipes	TATA/Jindal/Swastik
2	Gunmetal Ball Valves	Leader/DRP/Sant/Zoloto/TBS
3	CI Double Flanged Sluice valves & Check Valves	Kirloskar/Sant/Leader
4	Slim Seal Butterfly Valve	Audco/Veeson/C&R/KSB/Advance/Sant
5	Dual Disk type Non Return Valve	Audco/Veeson/C&R/KSB/Advance/Sant
6	Fire Hydrant Valves/Branch Pipes & Fire Main Axe.	Minimax/Firex/Newage
7	Fire Aid Fire Hose reels	Minimax/Firex/Newage
8	CP Hose Pipes	Minimax/Firex/Newage
9	Sprinkler Head	Tyco/Grinel/Viking
10	Fire Pumps	Kirloskar/Mather-Plate/Armstrong
11	Motors	Kirloskar/Seimens/Crompton
12	Electric Switch Gear	Seimens/ABB/Schneider/ L&T
13	Cables	RR Cable /Polycab/Paramount/Finolex/Havells
14	Suction Stainer	Vaishno/Jaypee/Grandpit
15	Vibration Eliminator Connector	Resistoflex/Kanwal
16	Single Phasing Preventer	Siemens/Minilec/L&T
17	Pipe Coat Material	PYPKOTE/Coaltek/STP
18	Flow switch	Potter/System Sensor/Jhonson Control

19	Diesel Engine	Ashok Leyland/Kirloskar/Cummins/Perkin
20	Main Control Panel	Tricolite/Vidyut Control
21	Fire Brigade Inlet	Minimax/Newage/Firex
22	Rubber Hose Pipe	Jyoti/Tiger/Padmini
23	Hose Coupling Branch	Minimax/Newage/Firex
24	Pressure Switch	Indfoss/Switzer
25	Pressure Gauge	H/Guru/Fiebig
26	Battery	Exide/Amaron/HBL
27	Fire Extinguisher	Minmax/Newage/Firex
28	Enamel Paint	Asian/Nerolac/Berger
29	Annunciation panel	Safeway/agni/Matter &Palet
30	Contactor	L&T/Siemens/ABB/Schneider
31	Thimbles/Ferrules	Dowel
32	Cable Gland	Commex/Power/Gripwell
33	Power capacitor	L&T/Crompton/Asian/Ducati
34	Measuring meter	L&T/Siemens/AE
35	MS Conduit	BEC/AKG/steel craft

C. ELECTRICAL WORKS

1	MCCB &MPCB	L&T/ABB/GE/SEIMENS VL/ Schneider/Legrand
2	MCB& ELMCB	M&G/HEGGAR/LEGRAND/HAVELLS/ Schneider
3	Lugs, Thimbles	Dowells
4	Capacitor	EPCOS/DUCATI/MEHER
5	APCR relay	EPCOS/DUCATI/CONZERV
6	Reactor	EPCOS/DUCATI/ELSPEC/SAIGON
7	Indication Lights	Schnieder/L&T/Seimens
8	Selector Switch	Sulzer/Kaycee
9	Push Button	Schnieder/L&T/Seimens
10	Terminal Strip	Connect well/Elmex/Phoenix
11	Digital Meter	Conzerv/Trinity
12	Analogue Meter	Rishabh/AE/IMP
13	Current transformer cast Resin	G&M/KAPPA/AE
14	Compression Glands	HMI/Comet
15	HRC Fuses	Siemens/L&T
16	Lighting Fixtures	Philips/Wipro/Crompton /Artemide
17	Power(PVC/XLPE 1.1KV grade cables)	POLYCAB/FINOLEX/KEI/RR
18	Cable Tray	Slotco/SECO/Steel Ways/Indiana
19	Ms Conduit & Accessories	BEC/AKG/Steel Craft

20	PVC insulated copper conductor	Finolex/RR Kabel/KEI/Polycab/Anchor/Havells
21	Modular Switches socket	Northwest/Legrand/Havells/anchor/schneider
22	DB	Legrand/Havells/Hager/Indo Asian
23	HT Cable	Unistar/Polycab/RPG/KEI/Rallison
24	Telephone wire & Data Cable(CAT-6/OFC)	Finolex/Polycab/RR Kabel/ D-Link /Havells/Anchor/Commescope/AMP
25	Fans & exhaust fans	Orient/Crompton/Bajaj/Havells
26	Modular Data Points	Awaya/Amp/D-Link/Commescope/Legrand
27	Pre-Fabricated MS Junction Box	Legrand/MK/Hager
28	LED Display unit	Delite /Samsung/SONY Or Equ.
29	Lightning Protection	Alltec/LPI
30	Conventional/Addressable fire alarm system	Notifier/Edwards/Siemens/Simplex
31	Transformer / Package Unit	Kirloskar/Crompton/Voltamp/ Schneider/ABB/ Siemens
32	DG set	Cummins/Caterpillar/Sterling/Perkin/Kohler
33	UPS	Eaton/Vertiv/Schneider/Delta/Numeric/Fuji
34	LT Panel& PDB's	AARVEE/Electro/IPC/Vidyut/Milestone/Asian Power Systems /Precision System Control
35	Lifts	KONE/OTIS/Shindler/Jhonson/Mistubishi
36	Air-conditioning Chiller	Carrier/Hitachi/Daikin/Bluestar/Climevaneta/York
37	BMS	Honeywell/Siemens/Schneider/Rockwell/JCI/ Mitsubishi
38	Smoke detector /Heat detector/RI/Sensors	Honeywell/Siemens/Apollo/JCI
38	RMU and BBT	Siemens/Scheneider/C & S/ABB
39	Furniture	Godrej/Bpergo/Featherlite/Geeken/Neelkamal /Durian

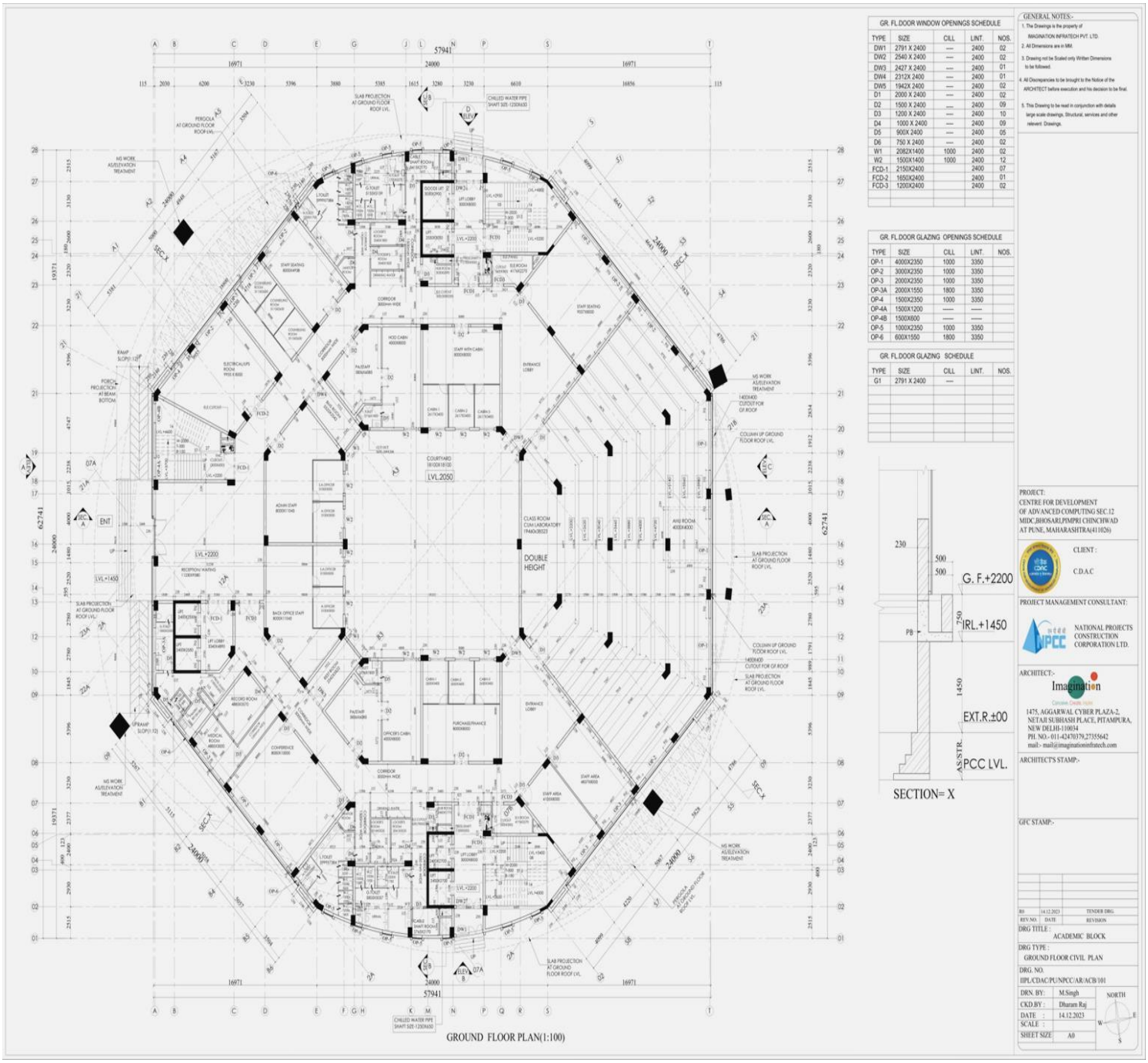
Note:-

1. **The contractor will use one of the approved makes with prior approval of the engineer in charge. For technical reason and GRIHA requirement, the engineer in charge can specify a particular make.**
2. **Order will be placed with the prior approval of engineer in charge relating to makes and quantities.**
3. **When certain makes of the items are missing in the above list/description of item, the make will be decided as per the approval of Engineer- in- charge.**

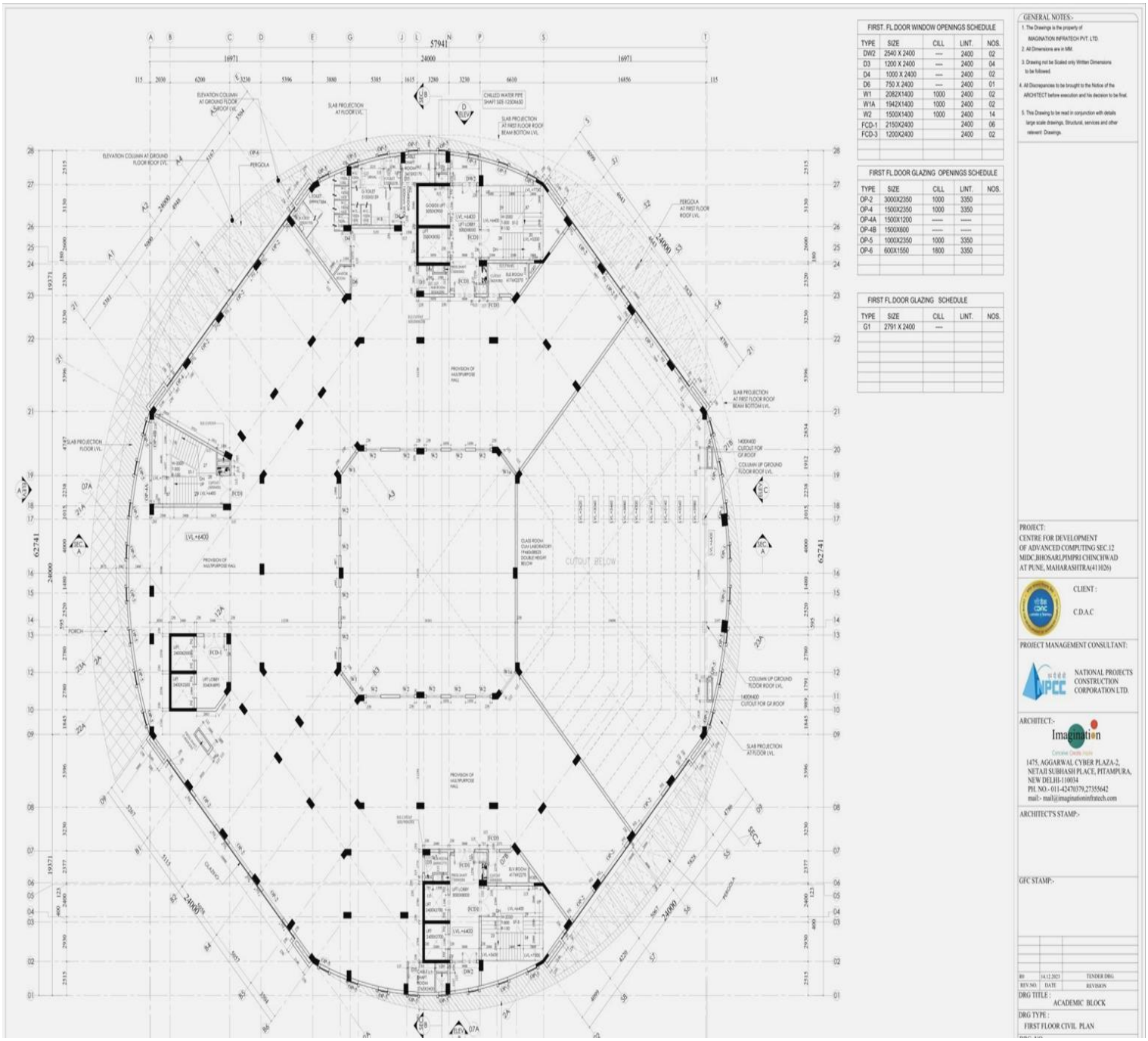
Tender Drawings

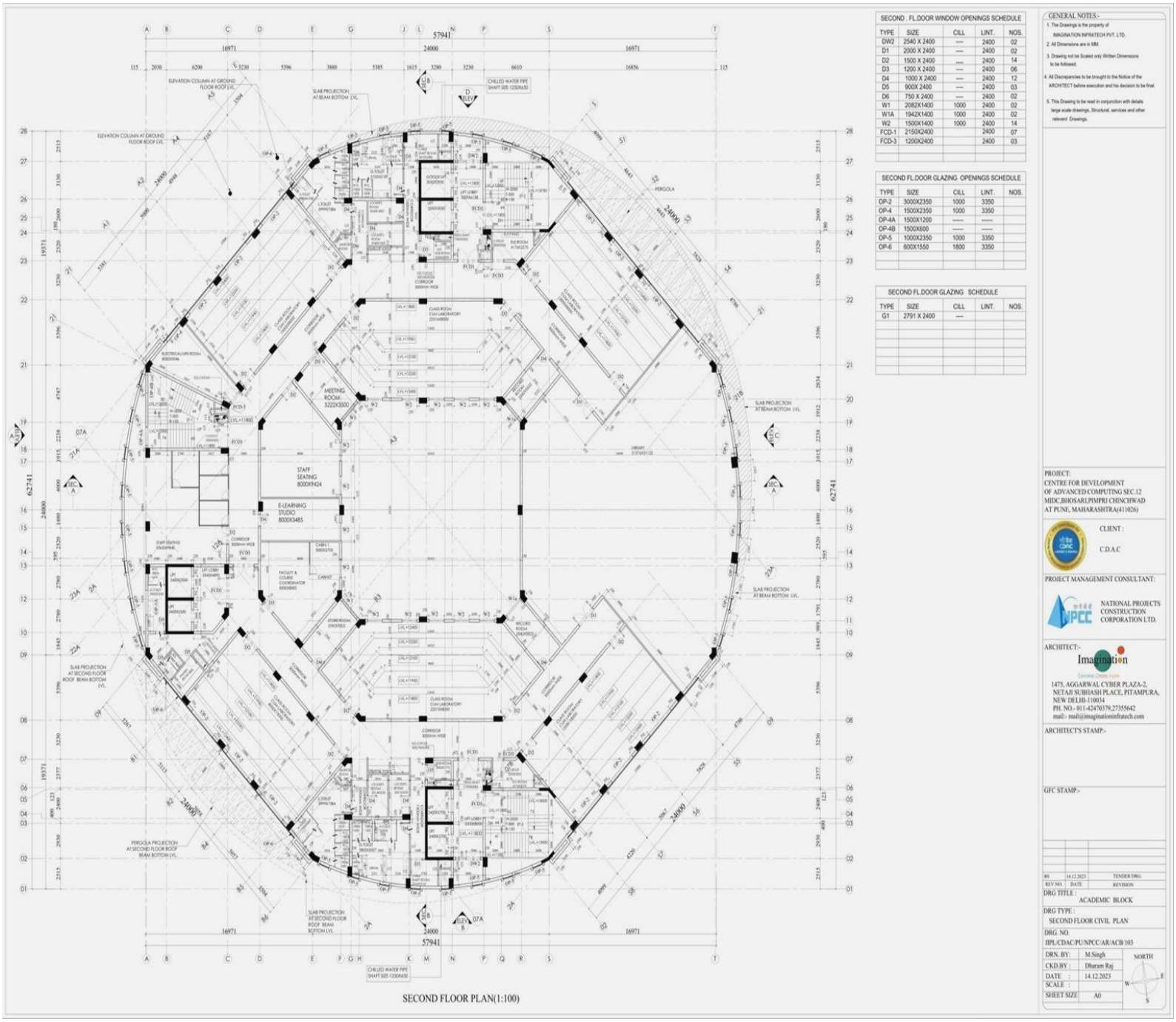

12 M WIDE ROAD
84800
LVL.±00
TO MOSHI SPINE ROAD (KRANTI CHOWK)
24.00 M WIDE ROAD
30.00 M WIDE H.C.M.T.R. ROAD
LVL.±00
U.G. PUMP TANK ROOM
OPEN AIR THEATRE
FIRE MOVEMENT
CAR PARKING (32 SMC)
CAR PARKING(22 SMC)
6.0 M WIDE ROAD
GR-3 +150 AT IRL.
GR-4 +150 AT IRL.
UTILITY AREA (OPEN SPACE)
(6000.00 SQM)
AMENITY AREA
(2000.00 SQM)
TO NIGDI -BHOSARI ROAD
101604

SITE PLAN



Sign & Seal of Tenderer **C-DAC**


FIRST. FL.DOOR WINDOW OPENINGS SCHEDULE
TYPE | SIZE | CILL | LINT. | NOS.
DW2 | 2540 X 2400 | ---- | 2400 | 02
D3 | 1200 X 2400 | ---- | 2400 | 04
D4 | 1000 X 2400 | ---- | 2400 | 02
D6 | 750 X 2400 | ---- | 2400 | 01
W1 | 2082X1400 | 1000 | 2400 | 02
W1A | 1942X1400 | 1000 | 2400 | 02
W2 | 1500X1400 | 1000 | 2400 | 14
FCD-1 | 2150X2400 | | 2400 | 06
FCD-3 | 1200X2400 | | 2400 | 02
FIRST FL.DOOR GLAZING OPENINGS SCHEDULE
TYPE | SIZE | CILL | LINT. | NOS.
OP-2 | 3000X2350 | 1000 | 3350 |
OP-4 | 1500X2350 | 1000 | 3350 |
OP-4A | 1500X1200 | ------ | ------ |
OP-4B | 1500X600 | ------ | ------ |
OP-5 | 1000X2350 | 1000 | 3350 |
OP-6 | 600X1550 | 1800 | 3350 |
FIRST FL.DOOR GLAZING SCHEDULE
TYPE | SIZE | CILL | LINT. | NOS.
G1 | 2791 X 2400 | ---- |
GENERAL NOTES:-
1. The Drawings is the property of IMAGINATION INFRATECH PVT. LTD.
2. All Dimensions are in MM.
3. Drawing not be Scaled only Written Dimensions to be followed.
4. All Discrepancies to be brought to the Notice of the ARCHITECT before execution and his decision to be final.
5. This Drawing to be read in conjunction with details large scale drawings, Structural, services and other relevant Drawings.
PROJECT:
CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING SEC.12 MIDC,BHOSARI,PIMPRI CHINCHWAD AT PUNE, MAHARASHTRA(411026)
CLIENT :
C.D.A.C
PROJECT MANAGEMENT CONSULTANT:
NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.
ARCHITECT:-
Imagination
1475, AGGARWAL CYBER PLAZA-2, NETAJI SUBHASH PLACE, PITAMPURA, NEW DELHI-110034
PH. NO.- 011-42470379,27355642
mail:- mail@imaginationinfratech.com
ARCHITECT'S STAMP:-
GFC STAMP:-
R0 | 14.12.2023 | TENDER DRG
REV.NO | DATE | REVISION
DRG TITLE :
ACADEMIC BLOCK
DRG TYPE :
FIRST FLOOR CIVIL PLAN


SECOND FLOOR PLAN(1:100)
SECOND . FL.DOOR WINDOW OPENINGS SCHEDULE
TYPE SIZE CILL LINT. NOS.
DW2 2540 X 2400 --- 2400 02
D1 2000 X 2400 --- 2400 02
D2 1500 X 2400 --- 2400 14
D3 1200 X 2400 --- 2400 06
D4 1000 X 2400 --- 2400 12
D5 900X 2400 --- 2400 03
D6 750 X 2400 --- 2400 02
W1 2082X1400 1000 2400 02
W1A 1942X1400 1000 2400 02
W2 1500X1400 1000 2400 14
FCD-1 2150X2400 2400 07
FCD-3 1200X2400 2400 03
SECOND FL.DOOR GLAZING OPENINGS SCHEDULE
TYPE SIZE CILL LINT. NOS.
OP-2 3000X2350 1000 3350
OP-4 1500X2350 1000 3350
OP-4A 1500X1200 ----- -----
OP-4B 1500X600 ----- -----
OP-5 1000X2350 1000 3350
OP-6 600X1550 1800 3350
SECOND FL.DOOR GLAZING SCHEDULE
TYPE SIZE CILL LINT. NOS.
G1 2791 X 2400 ---
GENERAL NOTES:-
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2. All Dimensions are in MM.
3. Drawing not be Scaled only Written Dimensions to be followed.
4. All Discrepancies to be brought to the Notice of the ARCHITECT before execution and his decision to be final.
5. This Drawing to be read in conjunction with details large scale drawings, Structural, services and other relevant Drawings.
PROJECT:
CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING SEC.12 MIDC,BHOSARI,PIMPRI CHINCHWAD AT PUNE, MAHARASHTRA(411026)
CLIENT :
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PROJECT MANAGEMENT CONSULTANT:
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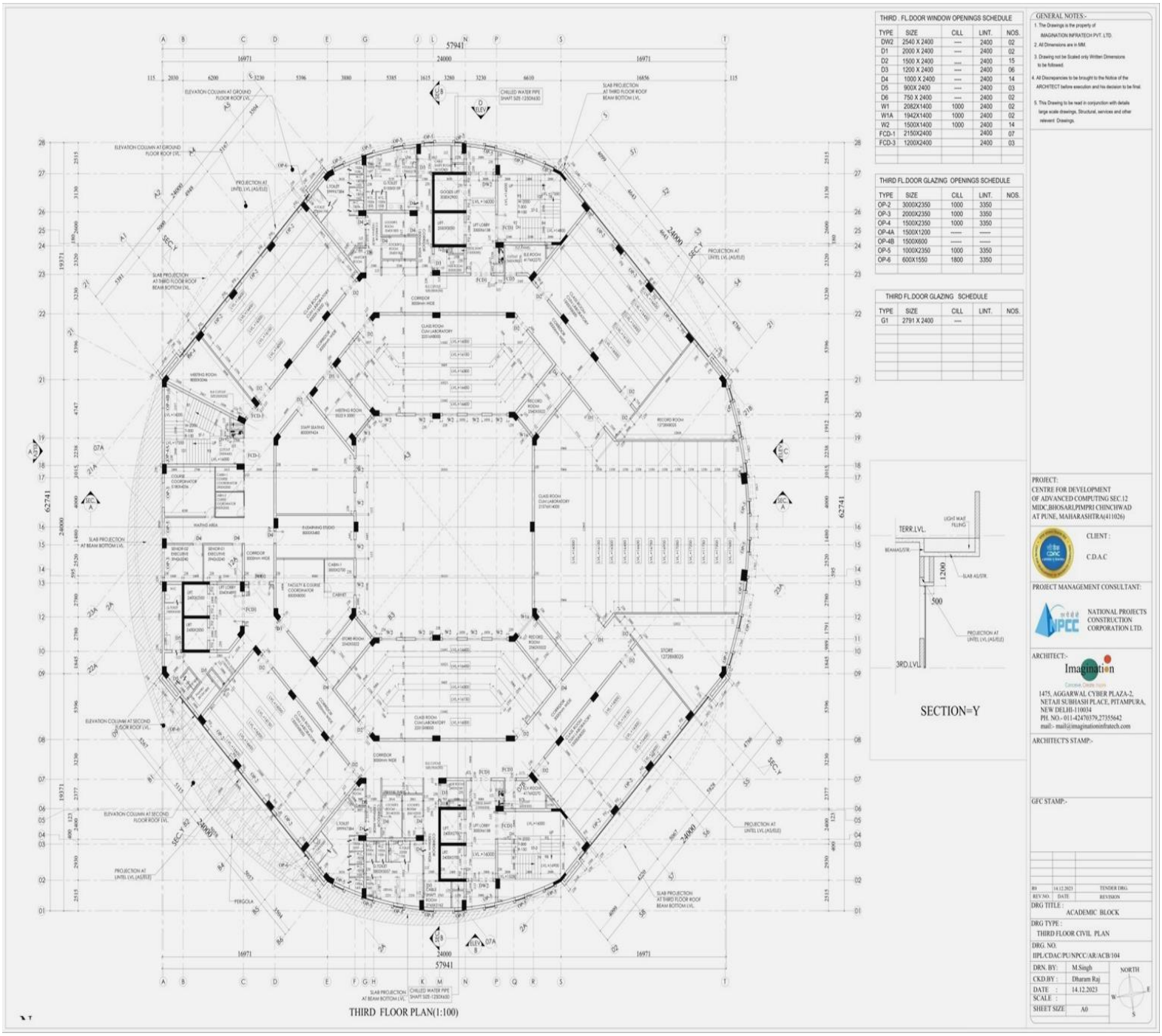
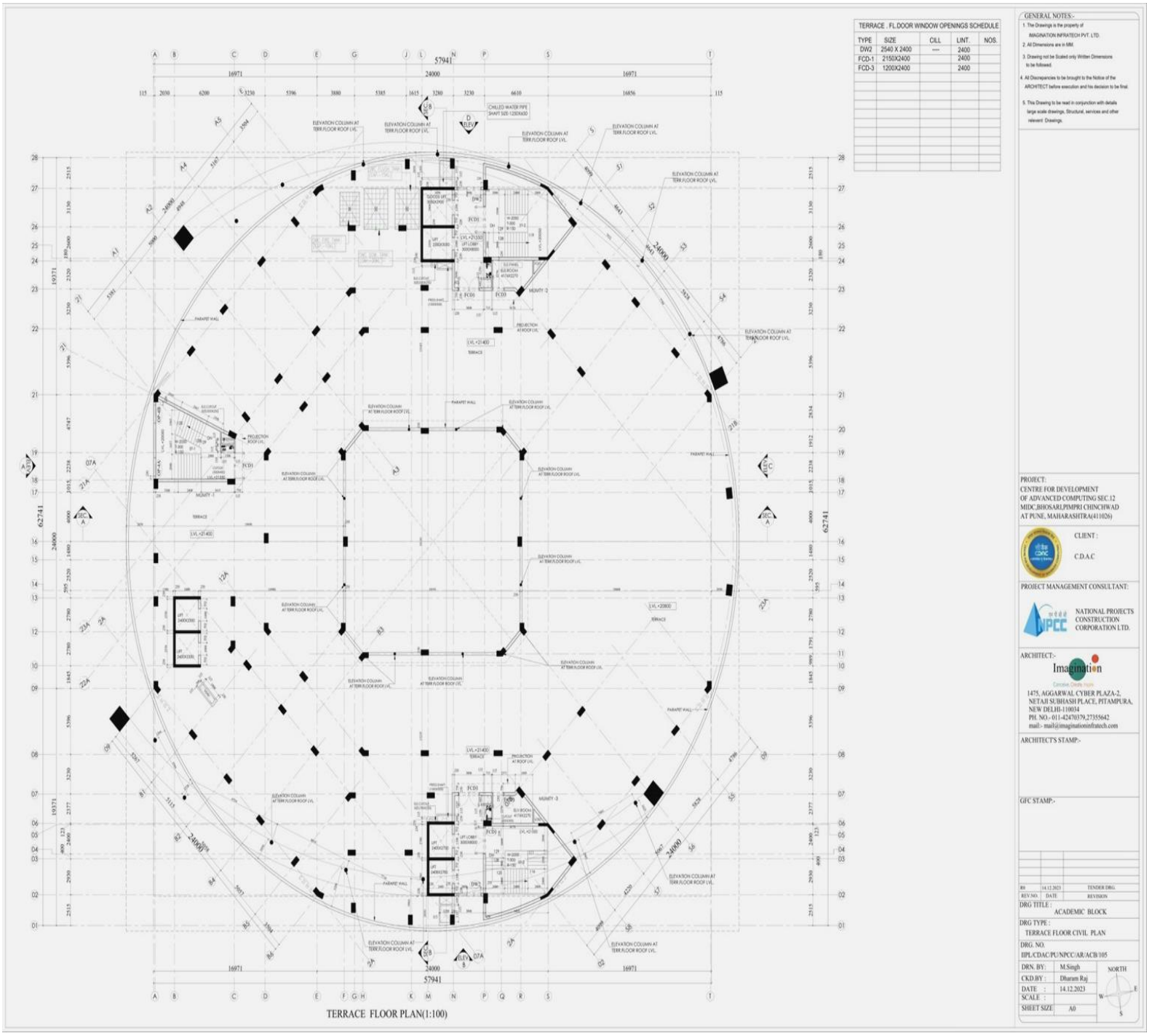
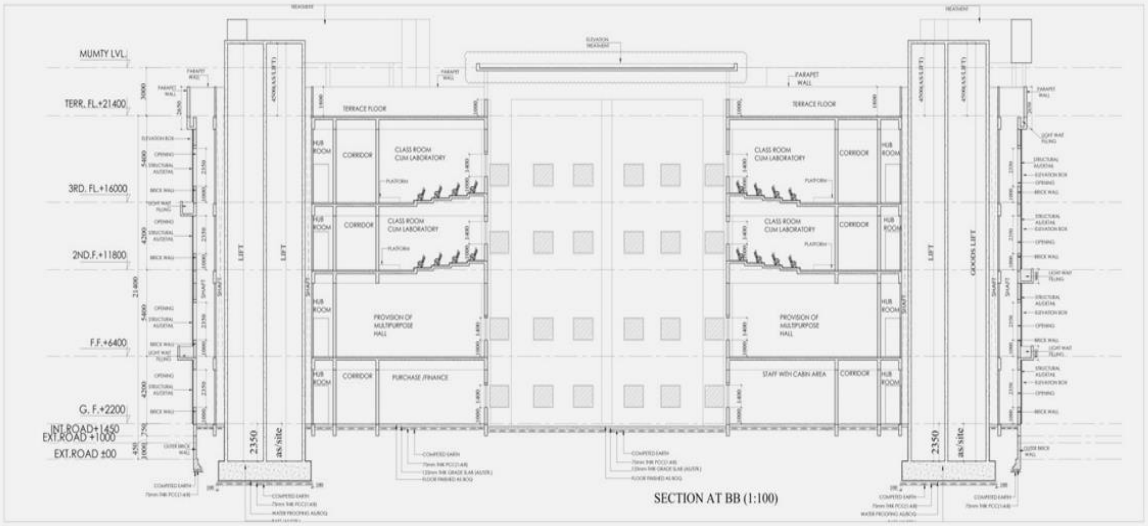
ARCHITECT:-
Imagination
1475, AGGARWAL CYBER PLAZA-2, NETAJI SUBHASH PLACE, PITAMPURA, NEW DELHI-110034
PH. NO.- 011-42470379,27355642
mail:- mail@imaginationinfratech.com
ARCHITECT'S STAMP:-
GFC STAMP:-
R0 14.12.2023 TENDER DRG.
REV.NO. DATE REVISION
DRG TITLE : ACADEMIC BLOCK
DRG TYPE : SECOND FLOOR CIVIL PLAN
DRG. NO. IIPL/CDAC/PU/NPCC/AR/ACB/103
DRN. BY: M.Singh
CKD.BY : Dharam Raj
DATE : 14.12.2023
SCALE :
SHEET SIZE A0
NORTH


THIRD FLOOR PLAN(1:100)
SECTION=Y
THIRD FL.DOOR WINDOW OPENINGS SCHEDULE
THIRD FL.DOOR GLAZING OPENINGS SCHEDULE
THIRD FL.DOOR GLAZING SCHEDULE
GENERAL NOTES:-
PROJECT:
CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING SEC.12 MIDC,BHOSARI,PIMPRI CHINCHWAD AT PUNE, MAHARASHTRA(411026)
CLIENT :
C.D.A.C
PROJECT MANAGEMENT CONSULTANT:
NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.
ARCHITECT:-
1475, AGGARWAL CYBER PLAZA-2, NETAJI SUBHASH PLACE, PITAMPURA, NEW DELHI-110034
PH. NO.:-011-42470379,27355642
ARCHITECT'S STAMP:-
GFC STAMP:-
DRG TITLE : ACADEMIC BLOCK
DRG TYPE : THIRD FLOOR CIVIL PLAN
DRG. NO. IIPL/CDAC/PUNPCC/AR/ACB/104
DRN. BY: M.Singh
CKD.BY : Dharam Raj
DATE : 14.12.2023
SCALE :
SHEET SIZE A0
NORTH



Sign & Seal of Tenderer **C-DAC**

SECTION AT AA (1:100)



SECTION AT BB (1:100)

GENERAL NOTES:-

1. The Drawings is the property of IMAGINATION INFRATECH PVT. LTD.
2. All Dimensions are in MM.
3. Drawing not be Scaled only Written Dimensions to be followed.
4. All Discrepancies to be brought to the Notice of the ARCHITECT before execution and his decision to be final.
5. This Drawing to be read in conjunction with details large scale drawings, Structural, services and other relevent Drawings.

PROJECT:
CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING SEC.12 MIDC,BHOSARI,PIMPRI CHINCHWAD AT PUNE, MAHARASHTRA(411026)

CLIENT :
C.D.A.C

PROJECT MANAGEMENT CONSULTANT:
NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.

ARCHITECT:-
Imagination
1475, AGGARWAL CYBER PLAZA-2, NETAJI SUBHASH PLACE, PITAMPURA, NEW DELHI-110034
PH. NO.- 011-42470179,27355642
mail:- mail@imaginationinfratech.com

ARCHITECT'S STAMP:-

GFC STAMP:-

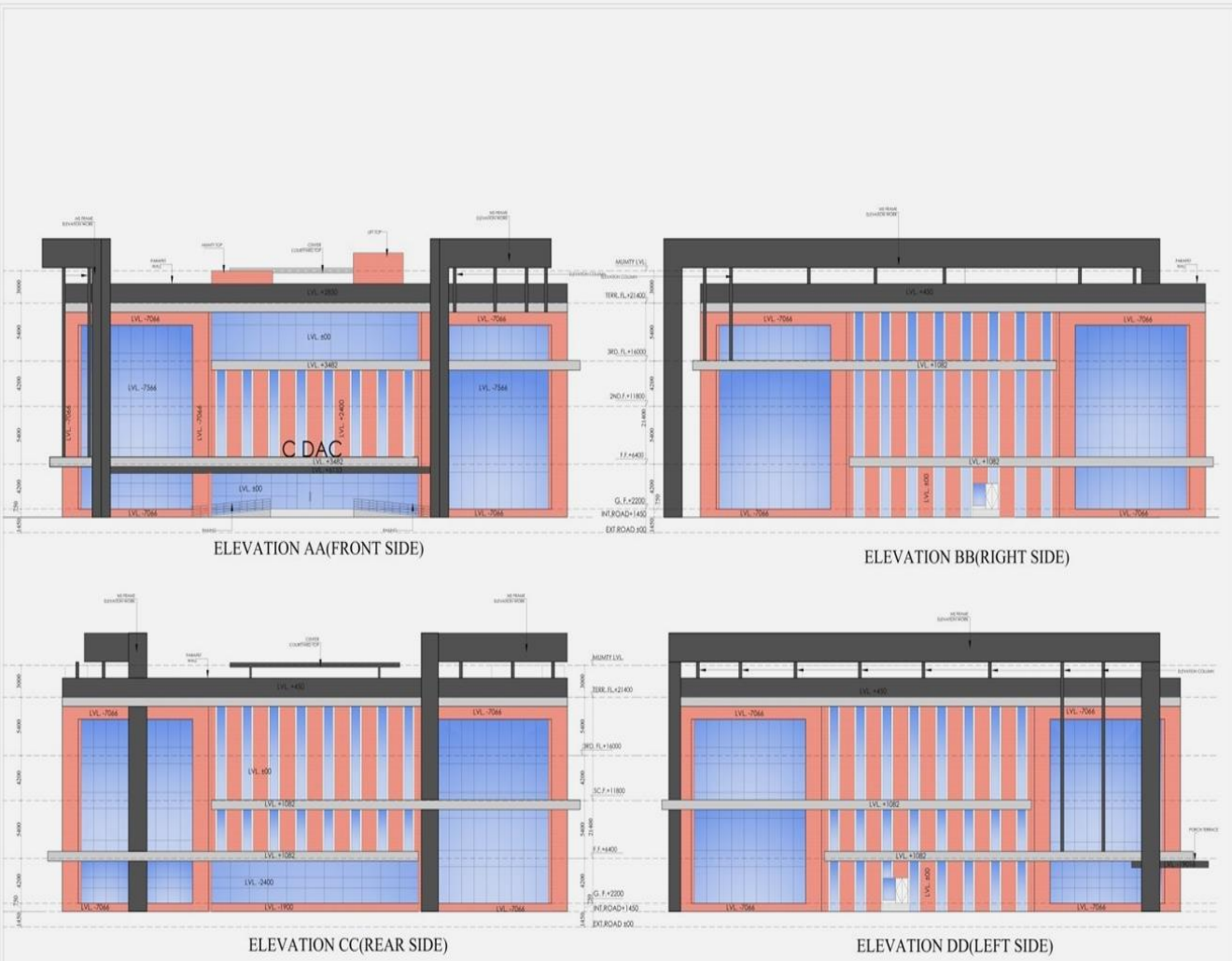
REV.NO.	DATE	REVISION
R0	14.12.2023	TENDER DRG.

DRG TITLE : ACADEMIC BLOCK

DRG TYPE : SECTION

DRG. NO. IIPL/CDAC/PU/NPCC/AR/ACB/201

DRN. BY:	M.Singh	NORTH
CKD.BY :	Dharam Raj	
DATE :	14.12.2023	
SCALE :		
SHEET SIZE	A0	



ELEVATION AA(FRONT SIDE)

ELEVATION BB(RIGHT SIDE)

ELEVATION CC(REAR SIDE)

ELEVATION DD(LEFT SIDE)

GENERAL NOTES:-

1. The Drawings is the property of IMAGINATION INFRATECH PVT. LTD.
2. All Dimensions are in MM.
3. Drawing not be Scaled only Written Dimensions to be followed.
4. All Discrepancies to be brought to the Notice of the ARCHITECT before execution and his decision to be final.
5. This Drawing to be read in conjunction with details large scale drawings, Structural, services and other relevent Drawings.

PROJECT:
CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING SEC.12 MIDC,BHOSARI,PIMPRI CHINCHWAD AT PUNE, MAHARASHTRA(411026)

CLIENT :
C.D.A.C

PROJECT MANAGEMENT CONSULTANT:
NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.

ARCHITECT:-
Conceive. Create. Inspire.
1475, AGGARWAL CYBER PLAZA-2, NETAJI SUBHASH PLACE, PITAMPURA, NEW DELHI-110034
PH. NO.- 011-42470379,27355642
mail:- mail@imaginationinfratech.com

ARCHITECT'S STAMP:-

REV.NO.	DATE	REVISION
R0	14.12.2023	TENDER

DRG TYPE :
TENDRE

DRG TITLE : ACADEMIC BLOCK
ELEVATION

DRG. NO.
IIPL/CDAC/PU/NPCC/AR/ACB/301

SCALE : A1(1:125)
DATE : 14.12.2023
DRN. BY: M.SINGH
CKD.BY : DHARAMRAJ

N

FACADE

Schedule of Quantities

Schedule of Quantities

1	**PLUMBING**	QTY	UNIT
1.1	**Providing, Fixing,testing and commissioning of Sanitary fixtures & CP fittings including all accessories (ISI-marked , sample to be approved from client). The contractor rates to include for supply all Sanitary fixtures & CP fittings including fixing/supporting accessories like WC pan connectors, nuts, bolts, screws, hangers,bottle traps, rubber buffers, CI or MS brackets, anchor fastners, sealents, washers, adhesives,Flanges, plumber's tape, white cement, masking tape (if required for protection),clamps,m.s angles for support etc which are required for the successful installation of the fixtures/fittings including the steel shuttering in a neat workman like manner to the satisfaction of Project Manager.**		
2	Rates are inclusive of Providing ,fixing ,testing and commissioning of Sanitary fixtures & CP fittings with all accessories at all the heights, depths and locations within the project premises.		
3	Rates are inclusive of Providing ,fixing ,testing and commissioning for underslung plumbing system or embeded piping, including all clamps & hooks including their painting to complete the work.Mostly, all the toilets in the residencial units have been designed for under slung piping.		
4	Rates are inclusive of provision of extension piece for final connection of CP fitting shall be supplied and installed by the contractor accordingly (as required)		
5	All pressure pipe will be tested on 1.5 times of the working pressure or as per CPWD specifications.		
6	**SUB HEAD - I - SANITARY FIXTURES & FITTINGS: Consider all plumbing fixtures with following flow-rates at 3.1 bar or 45 psi pressure.**		
6.1	**Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:**		

6.2	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	2.000	Each
7.1	**Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :**		
7.2	W.C. pan with ISI marked white solid plastic seat and lid	2.000	Each
8	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 2 litre/ 4 litre, including seat cover, and cistern fittings, nuts, bolts and gasket etc complete. Notes:- The Flow rate of fixture shall be 1.5 LPM	71.000	Each
9	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge. Notes:- The Flow rate of fixture shall be 1.5 LPM	50.000	Each
10	**Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:**		
10.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	74.000	each
11	Providing, Fixing,testing and commissioning of 15 mm dia CP brass two way bib cock with flow 4 LPM (Litre per Minute) at 3.1 bar or 45 psi test pressure with C.P. wall flange of approved quality as approved by architect and complete in all respect.	5.000	each
12	Providing & fixing S.S. health faucet for ablution with 1.2 meter long PVC tube with flow 4 LPM, hand shower, couplings, wall hook and other accessories of quality and make as approved by architect.	71.000	Nos
13	Providing and fixing Push stop cock 15 mm nominal bore. Weighing not less than 85 gms.	74.000	Nos
14	Estylo Full Brass Auto Push Pillar Cock/Auto Push Faucets/Push Button Taps (Chrome Finished) Heavy Quality(1955) with flow 4 LPM	50.000	Nos
15	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	124.000	Nos

16	**Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.**		
16.1	15 mm nominal bore	3.000	Nos
17	**Providing and fixing toilet paper holder :**		
17.1	C.P. brass	71.000	Nos
18	**Providing and fixing uplasticised PVC connection pipe with brass unions :**		
18.1	30 cm length 15 mm nominal bore	287.000	Nos
19	**Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931**		
19.1	15mm nominal bore	287.000	Nos
20	**Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.**		
20.1	Semi rigid pipe 32 mm dia	9.000	Nos
21	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	74.000	Nos
22	Providing and fixing PTMT liquid soap container 109 mm wide, 125mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.	74.000	Nos
23	**Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.**		
23.1	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	37.000	Nos
24	**Providing and fixing brass bib cock of approved quality :**		
24.1	15 mm nominal bore	10.000	each

25	**SUB HEAD - II - COLD / FLUSHING WATER SUPPLY (INTERNAL):**		
26	**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.**		
26.1	Concealed work, including cutting chases and making good the walls etc. 20 mm nominal outer dia Pipes	1060.000	Metre
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.** **Internal work - Exposed on wall**		
27.1	20 mm nominal outer dia Pipes	710.000	Metre
27.2	25 mm nominal outer dia Pipes	430.000	Metre
27.3	32 mm nominal outer dia Pipes	258.000	Metre
27.4	40 mm nominal outer dia Pipes	115.000	Metre
27.5	50 mm nominal outer dia Pipes	138.000	Metre
27.6	65 mm nominal outer dia Pipes	64.000	Metre
27.7	80 mm nominal outer dia Pipes	148.000	Metre
28	**Providing and fixing of gun metal gate valve with CI wheel of approved quality (screwed ends)**		
28.1	32 mm dia, nominal bore	25.000	Nos
28.2	40 mm dia, nominal bore	9.000	Nos
29	**Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :**		

29.1	20 mm nominal bore	2.000	Nos
29.2	25 mm nominal bore	45.000	Nos
30	**Providing and fixing gun metal non- return valve of approved quality (screwed end) :**		
30.1	50 mm nominal bore Horizontal	4.000	Nos
30.2	65 mm nominal bore Horizontal	4.000	Nos
31	**BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified**		
31.1	80 nominal bore	6.000	Nos
31.2	65 nominal bore	10.000	Nos
31.3	50 nominal bore	13.000	Nos
32	**Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.**		
32.1	25 mm dia nominal bore	288.000	Metre
32.2	32 mm dia nominal bore	121.000	Metre
32.3	40 mm dia nominal bore	86.000	Metre
32.4	50 mm dia nominal bore	156.000	Metre
32.5	65 mm dia nominal bore	559.000	Metre
32.6	80 mm dia nominal bore	375.000	Metre
33	**Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design :**		

33.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	15.000	Nos
34	**Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :**		
34.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	7.000	Nos
35	**Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :**		
35.1	25 to 40 mm nominal bore	40.000	each
35.2	50 to 80 mm nominal bore	40.000	each
36	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	1000.000	Per Litre
37	**Supplying, fixing,testing and commissioning of storage type waer heater(Geyser) etc. with outer body of ABS, 2MM Thick Mild Steel Inner Tank with glass line coating, option of 1/2/3 KW electrically operated single phase 230V, including Glass Lined Double Heating Element, Digital Display, Multifunction Safety Device, ELCB,Anode Rod System and Brackets For fixing on wall withconnecting Wire & plug etc. conforming to IS:2082 and energy efficient star rated model. Note:- geyser shall be BEE 5 star rated type.**		
37.1	6 Litre capacity	3.000	each
38	Supplying, Installation, testing and commissioning of water cooler full SS body from front externally connected with water cooler with minimum 60 LPH cooling capacity and having 120 Ltrs water storage tank capacity with multiple function of cooling. Dimension :-700x540x1160mm Weight :-57Kg	6.000	Nos
39	Supply & Installation of SOVISY - SMC Panel Tank confirming to: IS 14399 (Part 1& 2): 1996 & IS 4249 :1967 (50mm Insulated)	3.000	each

40	**SUB HEAD - III - INTERNAL DRAINAGE (SOIL, WASTE & VENT):**		
41	**Providing, jointing, testing and fixing UPVC Soil, Waste & Vent system Class Bconforming to IS : 4985-1983 and UPVC fittings (moulded as well as fabricated) like bends, tees, Y-tees, crosses, boss connections, access pieces, saddle pieces, cleanouts, adaptors for connections to other materials, plugs, reducers, cowls, offset and other specials. Jointing shall be done with pushfit EPDM ring jointing technique in general. Solvent cement joints may be provided for fittings and specials which are not manufactured with pushfit rubber joints.Fixing at wall/ceiling level supported by galvanized steel clamps & hangers etc. Making proper connection and also pipes may be laid / fixed in sunken floors, under slung from ceiling. The pipes laid in sunken floor shall be encased with not less than 75 mm thick cement concrete (1:2:4) all around.The installation shall be complete in all respects including cutting chases / holes in walls, slabs and making good the same as per specifications. (All major MS structure to hold the stack is included in this item) as approved by architect and complete in all respect.**		
41.1	110 OD Type B	975.000	Metre
42	**Providing, fixing, jointing, testing and commissioning UPVC (Class B) Rain water downtake pipe conforming to IS:13592 cut to required lengths including all necessary fittings and specials.UPVC fittings (moulded as well as fabricated) like bends, tees, Y-tees, crosses, boss connections, access pieces, saddle pieces, cleanouts, adaptors for connections to other materials, plugs, reducers, cowls, offsets and other specials. Fixing at wall/ceiling level supported by galvanized steel clamps & hangers etc. Making proper connection with cement solvent joint as per BIS / manufacturer. Cutting, chases / holes in floors / walls / slab and making good wherever required. (All major MS structure to hold the stack with fixing including anchor fasteners,sand, cement etc is included in this item).**		
42.1	160 mm dia	472.000	Metre
42.2	110 mm dia	38.000	Metre

43	**Providing, fixing, jointing and testing UPVC soil, waste, vent pipework comprising UPVC pipe conforming to IS :4985-1983 of class 3 (6kg/cm2) as specified below and fittings (moulded as well as fabricated) like elbows, bends, reducers, threaded tail pieces, caps, suitable elbow with suitable extension piece for drain point and other specials jointing with cement solvent, chasing, cutting and making good the walls & floors pipes laid in floors shall be encased with 40 mm thick concrete all around, complete in all respects including testing of complete installation.(All major MS structure to hold the stack with fixing including anchor fasteners, sand, cement etc is included in this item) as approved by architect and complete in all respect.**		
43.1	40 mm dia 6 kg/cm2 (Class III)	101.000	Metre
43.2	50 mm dia 6 kg/cm2 (Class III)	78.000	Metre
44	**Providing and fixing UPVC/SWR trap (P trap) of self cleaning design as per IS:13592 : 1992 complete including cost of cutting and making good the cutouts in walls and floors etc.including cutting and making good the walls and floors wherever required complete as approved by architect and complete in all respect. as approved by architect and complete in all respect.**		
44.1	110 mm inlet and 110 mm outlet	92.000	Nos
45	Providing and fixing floor drain made out of 110x63 mm OD uPVC. elbow connected to uPVC pipe complete as per direction of Project Manager as approved by architect and complete in all respect as approved by architect and complete in all respect.	16.000	Nos
46	Providing and fixing Inlet Fitting for Urinal trap, formed out of 110 mm PVC pipe with multiple side inlets formed with saddle pieces, suitable for 40, 50 and 63 mm dia side connections as per standard detail and support through galvanized steel support from slab or set in cement concrete mix 1:2:4 including cutting and making good the walls and floors wherever required as approved by architect and complete in all respect..	19.000	Nos
47	Providing and fixing Inlet Fitting for floor trap, formed out of 110 mm PVC pipe with multiple side inlets formed with saddle pieces, suitable for 40, 50 and 63 mm dia side connections as per standard detail and support through galvanized steel support from slab or set in cement concrete mix 1:2:4 including cutting and making good the walls and floors wherever required as approved by architect and complete in all respect..	1.000	Nos

48	**Providing and fixing Heavy Class SS grating of approved design including setting in floor with cement motor to match with floor finish as per architect requirement suitable for waster and FT, UT & FD as approved by architect and complete in all respect..**		
48.1	Size 100 mm X 100 mm	16.000	Nos
49	Providing and fixing P.V.C. WC connector (straight or bend type) with rubber lip ring. Including 110 mm dia PVC pipe / bend of required length and proper connection with M seal to C.I. pipe complete as required as approved by architect and complete in all respect..	71.000	Nos
50	**Providing and fixing cleaning eye 110mm dia on horizontal UPVC soil & waste pipes of 300 mm long UPVC pipe with one plain end lead caulked in to the collar of UPVC pipe and the other end with flange which in covered by neoprene rubber gasket and blank flange, complete with nuts, bolts etc and hot dip galvanization after fabrication to the satisfaction of Project Manager as approved by architect and complete in all respect..**		
50.1	100 mm dia	38.000	Nos
51	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	21.000	each
52	**SUB HEAD - IV - EXTERNAL SEWAGE / STORM WATER DRAINAGE :**		
53	**DWC ID SN-8 & SN-4 Pipe(HDPE Black Pipe) with Coupler & Rubber Ring as per IS:16098(PART 2)**		
53.1	150 mm Dia	202.000	Metre
53.2	200 mm Dia	98.000	Metre
53.4	250 mm Dia	173.000	Metre
54	**Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :**		
54.1	150 mm dia. R.C.C. pipe	483.000	Metre
54.2	200 mm dia. R.C.C. pipe	23.000	Metre

54.3	250 mm dia. R.C.C. pipe	403.000	Metre
54.4	300 mm dia. R.C.C. pipe	101.000	Metre
54.5	450 mm dia. R.C.C. pipe	46.000	Metre
55	**Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:**		
55.1	100x100 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	15.000	each
56	**Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design :**		
56.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10.000	each
57	**Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :**		
57.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	48.000	each
58	**Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :**		

58.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	16.000	each
59	**Extra for depth for manholes : Size 90x80 cm**		
59.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.000	Metre
60	**Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, outside plastering with cement mortar 1:3(1 cement : 3 coarse sand), foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :**		
60.1	0.91 m deep with SFRC cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering , excavation, refilling, disposal of surplus earth in all kinds of soil, footrest etc. all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be including in this item.) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10.000	each
61	**Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m**		
61.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1.000	Metre
62	**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 20 mm 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 :**		
62.1	For pipes 100 to 250 mm diameter	30.000	Each

62.2	For pipes 250 to 300 mm diameter	30.000	Each
63	Providing, laying and making kerb channel 30cm wide and 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth etc. complete as per direction of Engineer-incharge.	171.000	SQM
64	**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.**		
64.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	300.000	Kgs
65	**SUB HEAD-V-TUBEWELL AND TUBEWELL PUMPS** **Note: The quantities may varies as per site conditions.**		
66	**Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.** **All types of soil**		
66.1	300 mm dia	250.000	Metre
67	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	15.000	CUM
68	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineerin-charge.	4.000	each
69	**Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all**		

	complete, for all depths, as per direction of Engineer-in-charge. (Quantity of pipes of indicated in quanty is indicative. Exact depth will be ascertened as per water aquifer of site)		
69.1	200 mm nominal size dia having minimum wall thickness 5.40 mm	150.000	Metre
70	**Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge. (Quantity of pipes of indicated in quanty is indicative. Exact depth will be ascertened as per water aquifer of site)**		
70.1	200 mm nominal size dia	100.000	Metre
71	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge. (Quantity given is indicated in quantity is indicative. Exact time of development quality of water aquifer of site)	48.000	Hour
72	**Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:**		
72.1	200 mm clamp	8.000	each
73	**Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800**		

	(part I), including necessary bolts & nuts of required size complete.		
73.1	200 mm clamp	6.000	each
74	**Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).**		
74.1	200 mm clamp.	6.000	each
75	**SUBHEAD - VI - WATER SUPPLY, DRAINAGE, PUMPS & EQUIPMENT**		
76	Providing and fixing of package type skid mounted hydropneumatic system comprising of as approved by architect and complete in all respect.		
76.01	Horizontal / Vertical inline single/multistage centrifugal pumping set with stainless steel SS stage casing and SS impellers with stainless steel shaft, cast iron suction & discharge casing, connected to suitable capacity TEFC ventilated induction motor 2 pole, 2900rpm, suitable for 415±10% Volts, 3 phase, 50 Hz A.C. supply.		
76.2	Pressure vessel of non corrosive FRP composite construction lined with NSF and/or FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of 5 times the vessel operating pressure and cycle tested for 2,50,000 cycles.		
76.3	No. and capacity of Pressure Vessel - 01 No. x 100 Ltrs.		
76.4	Electrical Control Panel including provision for cyclic operation of pumps - Pump working sequence should change after every operation. Control panel with programmable logic controller (PLC) with inbuilt PID controller, digital display with fluorescent screen, 3 ph, 415±10%V, AC variable speed drives (Nos. of VFD's same as that of pumps including standby) of suitable capacity rating with inbuilt EN55011 class A RFI filters, having standard function of BI loop, energy saving catching a spinning load with speed search, auto hunting jog preset speeds, controlled stop on loss of supply power loss side through, DDC injection breaking fast stop. Drive should have selectable rated input frequency 50/60 Hz and output frequency range of 0.5-32 Hz, contactors, overload relays and MCBs should conform to IEC 898-1995 standards Ammeter, voltmeter. All trip indications should blink in case of trip and panels should only be accessible through an access code.		

76.5	Electronic Pressure switches having maximum pressure and differential scale should confirming BS-6134 standards and IP55 protection class.		
76.6	Complete set system to be mounted on a common MS base frame and shall follow following duty.		
76.7	The cost will include making necessary flanged suction and delivery headers in GI (C class)		
76.8	Motor to be of the same make as the pump		
76.9	(Vendor to submit performance curves and technical catalog of the proposed model for review & information)		
76.10	The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head. Pumps Shall be BEE 5 star rated type.		
77.1	Domestic Pump Capacity : 280LPM Each Pump (1 Working + 1 Standby) @ 45 M head. (location at UGT Plant room) as above	1.000	Set
77.2	Flushing Pump Capacity : 185 LPM Each Pump (1 Working + 1 Standby) @ 45 M head. (location at STP room)as above	1.000	Set
77.3	Soft Water Pump Capacity : 42 LPM Each Pump (1 Working + 1 Standby) @ 45 M head. (location at UGT Plant room)as above	1.000	Set
78	**Supply, assembly, erection, testing and commissioning of pumping system comprising the following: as approved by architect and complete in all respect.** **Vertical/Horizontal centrifugal pumps (1 Working + 1 Stand-by) with mechanical seal, SS Volute casing and SS impeller connected to suitable capacity TEFC induction motor suitable for 415 ± 10 % volts, 3 phase, 50 cycles A.C. supply with 100 mm dia. pressure gauges including MS skid and mounting of the pumps on the skid. (Motor to be of the same make as the pump)**		
78.1	Raw Water Filter Feed Pump : Capacity : 186 LPM Each Pump (1 Working + 1 Standby) @ 30 M head. (location at UGT Plant room)	1.000	Set
78.2	Soft Water Filter Feed Pump : Capacity : 183 LPM Each Pump (1 Working + 1 Standby) @ 30 M head. (location at UGT Plant room)	1.000	Set

79	**Receiving, unloading, storage, assembly, erection, testing and commissioning of SS/CI submersible pumps for domestic water pumping system comprising of: as approved by architect and complete in all respect.** **Supply, installation, testing and commissioning of free standing vertical type electrical submersible IE 3 class pump sets of following capacity capable of domestic water supply in tube well, with water cooled electric motor for effective cooling, the wearing parts such as Impeller, shaft sleeve, pump casing etc. shall be C.I & Impeller bolt shall be AISI 316 and of adequate power for operation on 415+ 1 volts, 3 phase, 50 Hz AC electric supply including fixing of delivery pipe with a flanged outlet. The cost will include providing and fixing suitable standard electrical panel from the same manufacturer as the pump, including float type level controller for level control and for cyclic operation of pumps, all electrical cables including submersible cables of required length and making all necessary electrical connections, terminations etc complete in all respects.** **The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head.** **Pump suitable for domestic water**		
79.1	For tube well water supply Capacity : 467 LPM Each Pump (1 Working) @ 118 M head (location in tube well).	1.000	No
80	**Supply, assembly, erection, testing and commissioning of SS/CI submersible grinder type pumps, suitable to handle basement drainage having the following capacities, complete with 3 phase squirrel cage submersible motor of required HP for 415 ± 10% volts, 3 phase, 50 Hz. A.C. supply cooled by surrounding liquid, submersible cable upto main panel within the plant room, dry running preventor, G.I. guide pulling chain, all the necessary piping and accessories, valves, delivery header etc. as required complete in all respects. The rate will include electrical panel with cyclic operation as supplied by the manufacturers. The rate will also include a three level sensor, controller and level indication (low, mid and high) system with a sounder for high level. The pumps will start as follows: (a) At mid level pump 1 will start. (b) At high level pump2 will start and there will be a sounder alarm as approved by architect and complete in all respect.** **The above installation shall be complete with sump pump lifting assembly, ready made electro - galvanized**		

	MS lifting chain, GI pipe header complete with discharge manifold, flanges, tee, elbow etc. complete including GI pipe upto the top of sump and including GI union. Header shall be sized for both pump working under delivery velocity of 1.5 m/sec.		
80.1	Capacity of 216 lpm against a total head of 20m (solid handling 20 mm) (Pump room drainage) (1 Working + 1 Stand by) (SS Body and SS Impeller and shaft)	1.000	Set
81	**SUBHEAD - VII - WATER TREATMENT PLANT**		
82	MULTIGRADE SAND FILTER (For Domestic/soft supply) Supply, installation, testing & commissioning of vertical self supporting Dual Media Filter (DMF) fabricated from FRP as per IS : 2825, ASMI code, complete with pressure gauges at inlet & outlet, sample cock, PVC face piping with ABS multiport valves and all accessories, with initial charge of filter media for Dual media filter with multi grade quartz sand & anthracite, lining inside with PP and FRP wounded outside, testing and commissioning complete as approved by architect and complete in all respect.. a) Capacity : 117 lpm b) Filtration rate : 13.93 $M^3/M^2/hr$ c) Max. operating pressure : 3.5 Kg/Sq.cm d) Test pressure : 5.5 Kg/Sq.cm	2.000	Set
83	ACTIVATED CARBON FILTER (For Domestic/soft supply) Supply, assembly, erection, testing & commissioning of vertical M.S. Activated Carbon filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 3mm non-toxic, non-leaching rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media activated carbon, face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm) as approved by architect and complete in all respect. Capacity : 117 lpm Filtration rate : 13.93 $M^3/M^2/hr$ Max. operating pressure : 3.5 kg/Sq.cm Test pressure : 5.5 Kg/Sq.cm	2.000	Set
84	Supplying, installing, testing and commissioning electronic chlorine solution dosing system comprising of F.R.P/ chemical grade HDPE solution tank of 200 litres capacity electronic dosing pump of capacity 0-4 LPH against 4.5 Kg/Sq.cm dosing valves, flexible teflon tube	2.000	Set

	pipes etc. complete for dosing of chlorine solution into water on line.		
85	Supplying, assembly, erection, testing and commissioning of magnetic level sensors and controllers, CPVC probe tube, PP actuating float and all other equipment required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control junction box near the UG tank to probes of required length, interconnection wiring between level controller and the concerned contactor in the starter panel as required. The level controller will perform the following functions as approved by architect and complete in all respect.. a) To switch on the pumps (including tube well pumps 2 nos., raw water pumps, Domestic Water Treatment etc.) To cut off the pump when the level in the receiving water tank is high and switch off the pumps when the level of water in the supply water tank is low. b) To indicate 3 levels of water in all tanks through a control panel with LEDs c) To start the pumps in a cyclic order. The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks. The Contractor will include all the under ground and over head tanks and all the pumps as required for level control in this item	2.000	Set
86	Providing & fixing Electric control panel to open / close the solenoid valve at low / high water level through level controller in OH water tanks including wiring, level controller probes & other accessories as required to operate the system automatically, including providing motorized butterfly valves with weather proof enclosure valves of suitable size as approved by architect and complete in all respect..	1.000	Set
87	"Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :" "Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture"	14.520	SQM
88	Supply, installation, testing and commissioning of tanker inlet connection complete with 80 mm dia GI inlet piping, hose inlet connection, MS cabinet enclosure (epoxy painted after fabrication), pad locking arrangement, inlet	1.000	No

	flexible hose complete with all necessary arrangementas approved by architect and complete in all respect..		
89	Providing & fixing C.I. 'Y' Strainer (screwed / flanged) with stainless steel fine wire mesh perforated sheet basket with necessary flanges / union nuts, bolts & washers complete as required (on pump suction)as approved by architect and complete in all respect. 80 mm dia	2.000	Nos
90	**SUBHEAD -VIII - MISCELLANEOUS ITEMS**		
91	**Providing and fixing M.S. puddle flanges (fabricated of 750 mm long pipe pieces) to R.C.C. water tanks wall / slab. The entire fitting shall be hot dipped galvanized (Flanges shall confirm to BS10 Table E) as approved by architect and complete in all respect..**		
91.1	25 mm dia (Screwed ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	5.000	Nos.
91.2	40 mm dia (Screwed ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	4.000	Nos.
91.3	50 mm dia (Flanged ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	6.000	Nos.
91.4	65 mm dia (Flanged ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	5.000	Nos.
91.5	80 mm dia (Flanged ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	5.000	Nos.
91.6	100 mm dia (Flanged ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	4.000	Nos.
91.7	150 mm dia (Flanged ends MS plate 6 mm thick; 100 mm x 100 mm plus dia of pipe).	6.0000	Nos.
92	**Providing and fixing Expansion flexible bellows between existing puddle flange in water tank retaining wall and proposed puddle flanges as mentioned under item No. 3 above. The bellow flanges shall match with exiting puddle flanges at site as approved by architect and complete in all respect.**		
92.1	50 mm dia	2.000	Nos
92.2	65 mm dia	2.000	Nos
93	**Providing and fixing in position G.I. vent with brass mosquito proof coupling and air filter including return bend, complete as required. The entire fitting shall be hot dip galvanizedas approved by architect and complete in all respect.**		

93.1	100 mm dia	4.000	Nos
94	Providing, testing & commissioning of dial type pressure gauge with pressure scale of 0 to 15 kg / cm2. Provision of isolation cock suitable for pressure of 15 kg / cum2 shall be included in cost.	4.000	Nos
95	Supply complete testing kit with all chemicals complete suitable for conducting test on water quality. The test kit shall be suitable to measure TDS, pH, Hardness, Iron content and other parameters (Make : Ion Exchange)as approved by architect and complete in all respect..	1.000	No
96	**Providing & fixing in position Vane Type mechanical water flow meter for following pipe sizeas approved by architect and complete in all respect..**		
96.1	UPTO 50 mm dia	1.000	Nos
96.2	50- 80 mm dia	2.000	Nos
97	**Providing, fixing, testing and commissioning of Air Release Valves screwed ends with ball valve of approved brand of manufacture, with accessories etc., complete.**		
97.1	25mm dia	1.000	Each
98	**CIVIL WORK**		
98.1	**EARTH WORK**		
99	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 lift upto 1.5 m, as directed by Engineer-in-charge. **All kinds of soil**	150	CUM
100	**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 lift upto 1.5 m, as directed by Engineer-incharge.**		
100.1	Ordinary rock	100.000	CUM
100.2	Hard rock (blasting prohibited)	4742.000	CUM

100.3	**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.**	2711.000	CUM
101	**Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.**		
101.1	All kinds of soil (From 1.50 to 3.00 mtr)	318.000	CUM
101.2	From 3.00 to 4.50 mtr	1.000	CUM
101.3	From 4.50 to 6.00 mtr	1.000	CUM
102	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	255.000	CUM
103	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	12138.000	sqm
104	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the area cleared.	100.000	sqm
105	**Supplying chemical emulsion in sealed containers including delivery as specified.**		
105.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	297.000	Litre
106	**Diluting and injecting chemical emulsion for POSTCONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :** **Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete:**		
106.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	201.000	Metre
107	**Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor :**		
107.1	With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	2548.000	sqm

108	**Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :** **All Kinds of soil**		
108.1	Pipes, cables etc, not exceeding 80 mm dia.	25.000	Metre
108.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	25.000	Metre
109	Excavating, supplying and filling of local earth (including royalty) by mechanical transport upto a lead of 5km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete.	11315.000	CUM
110	Stripping of 6-8 inches of top soil , maintaing and filling it back during final landscaping	2428.000	CUM
111	**CONCRETE WORK**		
112	**Providing and laying in position cement concrete of specified grade excluding the cost of centering and shttering - All work up to plinth level**		
112.1	1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	637.000	CUM
112.2	1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	210.000	CUM
113	**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 :**		
113.1	1:1½:3 (1 cement : 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	5.000	CUM
114	Providing and laying damp-proof course 50 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	50.000	SQM
115	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	16.000	per 50kg cement

116	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	50.000	sqm
117	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	201.000	sqm
118	**REINFORCED CEMENT CONCRETE**		
119	Centering & shuttering including strutting, propping etc. and removal of form work for		
119.1	Foundations, footings, bases of columns, etc. for mass concrete	656.000	sqm
119.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	2270.000	sqm
119.3	Suspended floors, roofs, landings, balconies and access platform.	10000.000	sqm
119.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	2886.000	sqm
119.5	Columns, Pillars, Piers, Abutments, Posts and Struts	7143.000	sqm
119.6	Stairs, (excluding landings) except spiral-staircases	786.000	sqm
119.7	Edges of slabs and breaks in floors and walls **Under 20 cm wide**	865.000	Metre
120	Steel reinforcement for R.C.C. work ncluding straightening, cutting, bending, placing in position and binding all complete upto plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more.	188203.000	kg
121	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more.	709085.000	kg
122	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	20.000	Metre

123	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured). Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	15467.000	sqm
124	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube challis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/ or pointing and/ or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc, wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. Note:- (1) The elevational area of the scaffolding shall be measured for payment purpose.(2) The payment will be made once only for execution of all items for such works.	20.000	sqm
125	**Design Mix** Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.(minimum 40% opc cement) **All works upto plinth level**		
125.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	1644.000	CUM

125.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	50.000	CUM
125.3	**All works above plinth level upto floor V level** Concrete of M25 grade with minimum cement content of 330 kg /cum	2767.000	CUM
125.4	Concrete of M30 grade with minimum cement content of 350 kg /cum	50.000	CUM
125.5	Concrete of M40 grade with minimum cement content of 390 kg /cum	608.000	CUM
126	Add for using extra cement in the items of design mix over and above the specified cement content therein.	291.000	Quintal
127	Providing, hoisting and fixing above plinth level up to floor five level precast reinforced cement concrete in lintels, beams and bressumers, including setting in cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering and shuttering but , excluding the cost of einforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size) .(minimum 40% opc cement)	5.000	CUM
128	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 6mm nominal size), reinforced with 1.6 mm dia mild steel wire, including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete, excluding plastering of the jambs, sills and soffits		
128.1	40 mm thick	50.000	sqm
129	Providing and fixing Rebar couplers of different thickness to join TMT bars of dia more than 25 mm confirming to all IS code and BIS standards.		
129.1	25 mm dia	530.000	Nos
129.2	32 mm dia	850.000	Nos
129.3	40 mm dia	560.000	Nos
130	**BRICK WORK**		
131	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)	194.000	CUM

132	Brick work with common burnt clay machine moulded perforated bricks of class designation 12.5 conforming to IS: 2222 in superstructure above plinth level up to floor five level in cement mortar 1:6 (1 cement : 6 coarse sand) With F.P.S.(non modular) bricks	489.000	CUM
133	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level. Cement mortar 1:4 (1 cement :4 coarse sand)	670.000	sqm
134	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	135.000	CUM
135	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	2098.000	CUM
136	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	201.000	Metre
137	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry	670.000	SQM
138	**CLADDING WORK**		
139	**Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately).**		
139.1	Red sand stone - 30mm thick gang saw cut stone	20.000	SQM
139.2	White sand stone - 30mm thick gang saw cut stone	20.000	SQM
140	**Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of.**		

140.1	Height 10 to 13 mtr	20.000	SQM
140.2	Height 13 to 16 mtr	20.000	SQM
140.3	Height 16 to 19 mtr	20.000	SQM
140.4	Height 19 to 22 mtr	1.000	sqm
141	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S. brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineerin- charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid).	80.000	Kgs
142	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately). Stainless steel cramps	26.000	Kgs
143	Stone work, plain in copings, cornices, string courses and plinth courses, upto 75 mm thick in Cement mortar 1:6 (1 cement : 6 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade. Red Sand Stone	10.000	CUM

144	Providing and fixing stone jali 40 mm thick throughout in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade, jali slab without any chamfers etc. Red sand stone	20.000	sqm
145	Providing wet cleaning of stone cladding with High Pressure Jet with minimum 120 bar pressure to wipe out foreign particles on the surface and then allow the surface to dry for at-least 24 Hours .As a second step, providing and applying " Anti- Fungal Water Repellent Coating " consisting of silane siloxane of BRAND KONEX WRA 2318 on the stone cladding by spraying complete in all respect and heights over dry stone cladding.	40.000	sqm
146	**MARBLE & GRANITE WORK**		
147	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade Area of slab over 0.50 sqm	1398.000	sqm
148	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	472.000	Metre
149	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc.complete.	69.000	Each
150	**Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.**		
150.1	Marble work	120.000	Metre
150.2	Granite work	435.000	Metre

151	Providing and making V groove in granite steps for staircase , treads etc. complete as per design approved by Engineer-in-Charge.	780.000	Metre
152	**WOOD WORK**		
153	**Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).**		
153.1	Saal wood	12.000	CUM
153.2	Kiln seasoned and chemically treated hollock wood	1.000	CUM
154	**Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.** **35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws**	348.000	sqm
155	**Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:** **35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws**	98.000	sqm
156	Extra for Providing and fixing flush doors with decorative veneering instead of non decorative ISI marked flush door shutters conforming to IS: 2202 (Part I) **One Side only**	98.000	sqm
157	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of doorshutter to be measured).	446.000	sqm
158	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).	446.000	sqm

159	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete : 2nd class teak wood **50 x 20 mm**	1160.000	Metre
160	Providing and fixing teak wood lipping of size 25x3 mm in pelmet.	1160.000	Metre
161	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed onthe body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete.	106.000	Each
162	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2 mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady] the frame.	1.000	Metre
163	**Providing and fixing to existing door frames.** 30 mm thick Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5 mm thick FRP laminate for panels conforming to IS: 14856, including fixing to frames.	1.000	sqm
164	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	10.000	Each

165	**uPVC** **Providing and fixing factory made uPVC white colour casement/ casement cum fixed glazed windows comprising of uPVC multichambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately)** **Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable**		
165.1	Casement window single panel with S.S. friction hinges (300 x 19 x 1.9 mm), made of (small series) frame 47 x 50 mm & sash 47 x 68 mm both having wall thickness of 1.9 ± 0.2 mm and single glass pane glazing bead of appropriate dimension. (Area of window upto 0.75 sqm.)	14.000	sqm
165.2	Casement window double panels with S.S. friction hinges (300 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window above 0.75 sqm upto 1.50 sqm).	6.000	sqm
165.3	Casement window double panels with top fixed with S.S. friction hinges (350 x 19 x 1.9 mm) made of (small series) frame 47 x 50 mm, sash 47 x 68 mm & mullion 47 x 68 mm all having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window upto 2.50 sqm).	253.000	sqm
166	Providing and fixing in wall lining medium density fibre board IS: 14587:1998 marked, Pre-laminated with one side decorative lamination and other side balancing lamination, with necessary fixing arrangement and screws etc. all complete. **12 mm thick**	55.000	sqm

167	Providing and fixing wooden moulded corner beading of triangular shape to the junction of panelling etc. with iron screws, plugs and priming coat on unexposed surface etc. complete 2nd class teak wood. **50x50 mm (base and height)**	55.000	Metre
168	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/m^2) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m^3 . The frame will have a provision of G.I. Anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter. The frame shall be finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- charge . (Cost of SS ball bearing hinges is excluded).	1.000	Metre
169	Providing and fixing 60 mm thick glazed fire resistant door shutters of 120 min Fire Rating confirming to IS:3614 (Part II) or EN1634- 1:1999, tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60 mm made out of 1.6mm thick G.I. sheet (zinc coating not less than 120gm/m^2) duly filled mineral wool insulation having density min 96 kg/m^3 and fixing with necessary stainless steel ball bearing hinges of size 100x89x3mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-charge (panelling to be paid for seperately).	1.000	Metre
170	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m^2) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per direction of Engineer-in-charge. The glass shall be clear, toughened, interlayered, non-wired fire resistant having 11 mm thickness of approved brand with 120 minutes of fire resistance both integrity & radiation control (EW120) and minimum 15 min of insulation (EI15) and having a sound reduction of 37dB and LT of 86%. Glass shall be compliant to class 2(B)2 category of Impact Resistance as per EN 12600. The glass	1.000	Metre

	should be manufactured in UL & TUV audited Facility and including UL-EU Certification.The maximum glazing size cannot be more than 1100 mm x 2200 mm (w x h) or 2.42 sq mts in total area. The test report for the complete system (Glazed Door or Partition) will be considered valid only if it contains the stamp and signature of the authorized signatory from the glass manufacturer. (Actual glass size is to be measured at site for payments)		
171	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	19.000	SQM
171.1	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured). **Decorative type door**	125.000	SQM
172	**FIRE RESISTANT GLAZED DOOR SYSTEM WITH UNIFORM SLEEK 50x50 Profiles**		
172.1	**Supply and installation of tested fully glazed fire rated unlatched double leaf door sleek uniform profiles system with 120 minutes of integrity and radiation control (EW 120) with symmetrical (Bi-Directional) fire protection. The frames shall be cold rolled profiles as per EN standard EN 10327. The door frames are cold rolled from 1.5 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The door shutter would have the uniform top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The overall door opening shall be as per tested evidence and tested as per EN 1634-1/ IS16947/ ISO 834-1 / ISO 3009 in an accredited laboratory.**		
172.2	**The glass must be minimum 14mm (MADE IN INDIA) clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass with a light transmission of 86% and a sound reduction of 38 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification(certification copy to be submitted) and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation**		

	as per EN 12543-4..The glass shall provide bi-directional (Symmetrical) fire protection .The base glass for the interlayer Fire glass must bemade in India and with ISI mark as per IS 2553		
172.3	The shutters should be fixed to the frame using Weld-on hinges of dimensions 179mm X 20mm . The profiles shall have groves to incorporate Fire Resistant gaskets. The glass should be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. Beading shall be clipped on using Stainless Steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm Calcium Silicate setting blocks. The door should be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf should be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a TUV audited facility and shall be of Saint Gobain or as per in approved make list complying to the above specification . The maximum glazing size shall be as per the test certification. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c. The door shall also be subjected to durability tests as per EN 12400 for minimum C5 classification (200,000 cycles) tested.		
172.4	Fire Rated Door Makes- Saint Gobain, Acodor , Matrix, Godrej Fire Rated Glass - Saint Gobain, Trosch , Pilklinton , TGP The test report will be considered valid only if it contains the stamp and signature of the authorized signatory from the supplier. DOOR SYSTEM SIZE: W X H In mm		
172.5	2000X2400 AS ABOVE	28.000	Nos
172.6	1500X2400 AS ABOVE	3.000	Nos

172.7	1200X2400 AS ABOVE	8.000	Nos
173	**ELECTRICAL SHAFT DOOR** Providing and fixing of approved or equivalent make HMPS doors. Doors should be finished in Powder Coating with film thickness of 60 microns approx. in desired RAL Shades. The manufacturer company must be ISO 9001-2015 certified. Door frame is Single rebate profile of minimum size 100mm X 57 mm made out of 1.5 mm minimum thick galvanized steel sheet. Aco100 profile of 100x57 Frames wshall be Mitred jointed and field assembled with mitred joint. The frames is finished with Powder Coating in desired RAL Shade. Frame having provisions and necessary reinforcement for receiving appropriate hardware like lock and hinges. Frames will be provided with back plate bracket to receive anchor fasteners for installation on a finished plastered wall opening. Door leaf shall be manufactured from 0.8 mm thick galvanised steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall be honey Comb craft paper. All Acodor steel doors shall be factory prepped for receiving appropriate hardware and provided with necessary reinforcement . Vision lite wherever applicable should be provided as per manufacturers recommendation and desired to be fixed with 'Z' clipping on system or double glazed glass	23.000	sqm
174	**Providing & Fixing of Fabric Blinds for all windows at all heights with translucent fabric & 100% Polyster woven with .40 mm thickness & conditionally cleanable as approved by architect and complete in all respect.**		
174.1	Providing & fixing of Roller Blinds (Blackout) on the windows at all heights, as approved by architect and complete in all respect. Note:- The blind is 100% Polyster with thickness of 0.45 mm	224.000	sqm
174.2	Providing & fixing of wooden Blinds for all windows with 35 mm to 50 mm wide with mechanism in which lifting & tilting is done by same cordian as approved by architect and complete in all respect.	20.000	sqm
174.3	providing & Fixing of Roman Blind for all windows with 0.40 mm thickness and one touch down system with one cord and suitable for Moist environment as approved by architect and complete in all respect.	10.000	sqm
174.4	Providing & Fixing ofRooler Blind Perforated Screen Fabric on the windows at all heights as approved by architect and complete in all respect.	10.000	sqm

175	**GLASS WORK**		
176	Supply and installation of SGIPL Clipper Sleek Series for minimal frame, room dividing solutions. Single glazed demountable glass partition using clear toughened glass in proprietary natural anodized/black aluminum sections Clip- on / U-Section of size 30mm x 21mm with suitable gaskets for insertion with glass. It also consists of clipper two way profiles, 90 Degree L Junction and T Junction profiles suitably to be used as per room configuration designs. Glass thickness - 10mm(LSG). All Profiles are min 2.5mm thickness excluding 20 microns of Anodizing, Standards applicable • Aluminium profile made by Al Alloy 6063-T6 grade (Make : Saint Gobain, Jeb, Alloy and Dorma)	34.000	sqm
177	Door - 1200mm -Single Door- W1200mmx H2400mm Clipper Sleek Series System for 70x45mm Stile door. (Make : Saint Gobain, Jeb, Alloy and Dorma)	6.000	Nos
178	Door - 1000mm - Single Door- W1000mmx H2400mm Clipper Sleek Series System for 70x45mm Stile door. (Make : Saint Gobain, Jeb, Alloy and Dorma)	5.000	Nos
179	Providing & Fixing Stainless Steel Indicating Bolt & Dead Bolt, SS Plate Black Body with SS Finish Lock as approved by architect and complete in all respect.	10.000	Each
180	Providing & Fixing Mortise handle in SS304 Pipe with 22mm dia & latch with SS Front & Strike Plate as approved by architect and complete in all respect.	38.000	Each
181	Providing & Fixing Mortise handle in SS304 Pipe with 22mm dia & latch with SS Front & Strike Plate as approved by architect and complete in all respect.	4.000	Each
182	Providing & Fixing Mortise handle in SS304 Pipe with 22mm dia & latch with SS Front & Strike Plate as approved by architect and complete in all respect.	8.000	Each
183	Providing & Fixin Pull & Mortise handle in SS304 Pipe with25mm & 22mm dia respectively + lockbody with SS Front & Strike Plate, Heavy Duty Springs, Anti Corrosive Plating, Double Throw Deadbolt, Brass follower for mortise rod + 5 Pin Euro Profile Cylinders, 3 Brass Keys, EN Standard, 2 Lakh Cycle Tested as approved by architect and complete in all respect.. 10"x25mm Pull / 100 ss 50x85mm / 09 ss 60mm)	16.000	Each
184	Providing & Fixin Pull & Mortise handle in SS304 Pipe with25mm & 22mm dia respectively + lockbody with SS Front & Strike Plate, Heavy Duty Springs, Anti Corrosive Plating, Double Throw Deadbolt, Brass follower for mortise rod + 5 Pin Euro Profile Cylinders, 3 Brass Keys, EN Standard, 2 Lakh Cycle Tested as approved by architect	2.000	Each

	and complete in all respect. (100 ss 50x85mm / 09 ss 60mm)		
185	Providing & Fixing Plasma pull handle in SS304, 10" length & 22mm dia as approved by architect and complete in all respect.	10.000	Each
186	Providing & Fixing Redfire pull handle in SS304, 12" length & 22mm dia as approved by architect and complete in all respect.	3.000	Each
187	Providing n& Fixing Heavy Deluxe Tower Bolt (10") in SS304 with Front Fixing Screws as approved by architect and complete in all respect.	106.000	Each
188	Providing n& Fixing Heavy Deluxe Tower Bolt (6") in SS304 with Front Fixing Screws as approved by architect and complete in all respect.	106.000	Each
189	Providing & Fixing Sign Plates 170 mm stainless steel as approved by architect and complete in all respect.	2640.000	Sq Inch
190	Providing & fixing Double door Lock with cylinder 10 to 12 mm Glass Left,right complete as approved by architect and complete in all respect.	2.000	Each
191	**STEEL WORK**		
192	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position andmapplying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. **Electric resistance or induction butt welded tubes**	110.000	Kgs
193	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. **In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works**	1080.000	Kgs
194	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable	5600.000	Kgs

	arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).		
195	**FLOORING**		
196	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. **Polished Granite stone slab of all colour and texture except Black, Cherry/Ruby Red**	3399.000	SQM
197	Extra for pre finished nosing in treads of steps of Kota stone/ local stone slab. (Details As above Refer SR. No.196)	581.000	Metre
198	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre(Details As above Refer SR No.196)	50.000	SQM
199	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	1706.000	SQM
200	**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 @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.**		
200.1	Size of Tile 800x800 mm	110.000	SQM

200.2	Size of Tile 1000 x 1000 mm	230.000	SQM
201.1	**Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.**		
201.2	**Glazed vitrified floor tiles polished finish of size**		
201.3	Size of Tile 800 x 1200 mm (Details As above Refer SR. No.201.1)	150.000	SQM
201.4	Size of Tile 1200 x 1200 mm (Details As above Refer SR. No.201.1)	4284.000	SQM
201.5	**Glazed Vitrified tiles Matt/Antiskid finish of size**		
201.6	Size of Tile 1200 x 1200 mm AS ABOVE (Details As above Refer SR. No.201.1)	513.000	SQM
202	**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.**		
202.1	Size of Tile 600x600 mm	35.000	SQM
202.2	Size of Tile 800x800 mm	50.000	SQM
202.3	Size of Tile 1000x1000 mm	110.000	SQM
203	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : **25 mm thick**	50.000	SQM

204	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	15.000	SQM
205	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. **18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.**	15.000	SQM
206	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	177.000	SQM
207	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement. **18 mm thick**	3.600	SQM
208	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 50mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	2548.000	SQM
209	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand) with joints finished flush. **Red sand stone**	20.000	SQM

210	Floor Carpet Providing and laying machine made woolen carpet (1200gm/sqmt.) of approved sample, shade and of approved manufacturer. The woolen carpet shall be fixed on 12mm thick rubberized coir under layer fixed on floor with rubberized adhesive, ends of the carpet shall be secured in position with floor by providing necessary wooden nailed beading fixed to floor with necessary adhesives, PVC fasteners and steel screws etc. as per locations shown in architectural drawing for carpet flooring and direction by architect and complete in all respect.	214.000	SQM
211	Supply & Fixing Sports Flooring in Play Area includes Shock absorption,Sliding Coeffiecient, impact Resistance Properties or as approved by architect and complete in all respect.	20.000	SQM
212	Providing & fixing 12 mm thickness Laminated wooden Flooring with high five resistence, water resistance, scratch resistance and coated with layers of aluminium oxide particles for better strength and durability as approved by architect and complete in all respect.	20.000	SQM
213	**ROOFING**		
214	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : **In 75x75 mm deep chase**	263.000	Metre
215	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	12.000	Each
216	Providing and fixing on wall face unplasticised Rigid PVC rainwater pipes confirming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion.(I)single socketed pipes. **110 mm diameter**	148.000	Metre
217	Providing and fixing on wall face unplasticised PVC moulded fitting acessories for unplasticised Rigid PVC rain water pipes confirming to IS-13592 type A including jointing with seal ring confirming to IS 5382 leaving 10mm gap for thermal expansion. **Coupler** **110 mm**	74.000	Each

218	Bend 87.5* **110 mm bend (Details As above Refer SR. No.217)**	12.000	Each
219	Shoes (plain) **110 mm shoe (Details As above Refer SR. No.217)**	12.000	Each
220	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete. **110 mm**	49.000	Each
220.1	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	12.000	Each
221	**Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and erimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound, jointing tapes , finishing with jointing compound in 3 layers covering**		

	upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :		
221.1	Fully Perforated Gypsum Plaster Board of size 1200 x 2400x12.5 mm having approx. 15 % perforated area with perforation size and pattern as approved by the Engineerin- charge and as per manufacturer's specification, with all 4 side tapered and backed by acoustical tissue with NRC value not less than 0.60	1598.000	Sqm
222	Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately): **Flat Surfaces**	250.000	Sqm
223	**Providing and fixing Gl Clip in Metal Ceiling System of 600x600 mm module which includes providing and fixing 'C' wall angle of size 20x30x20 mm made of 0.5 mm thick pre painted steel along the perimeter of the room with help of nylon sleeves and wooden screws at 300 mm center to centre, suspending the main C carrier of size 10x38x10 mm made of G.I steel 0.7 mm thick from the soffit with help of soffit cleat 37x27x25x1.6 mm, rawl plugs of size 38x12 mm and C carrier suspension clip and main carrier bracket at 1000 mm c/c. Inverted triangle shaped Spring Tee having height of 24 mm and width of 34 mm made of Gl steel 0.45 mm thick is then fixed to the main C carrier and in direction perpendicular to it at 600 mm centers with**		

	help of suspension brackets. Wherever the main C carrier and spring T have to join, C carrier and spring T connectors have to be used. All sections to be galvanized @ 120 gms/sqm (both side inclusive), fixing with clip in tiles into spring T with :		
223.1	GI Metal Ceiling Clip in plain Beveled edge global white color tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 gms/ sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation.	330.000	Sqm
224	**Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised @80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod upto 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be prepainted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.**		
224.1	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.6)	3773.500	SQM

225	Providing & Fixing of Wooden finished Suspended Ceiling System with Woodworks Vector edge tiles with Armstrong 15mm Prelude 43 exposed grid as approved by architect and complete in all respect.	50.000	SQM
226	Providing & Fixing of Custom Printed Mineral Fibre Acoustical Suspended Ceiling System with Ultima (Bevelled Tegular) Edge Tiles With Armstrong 15mm Exposed Grid as approved by architect and complete in all respect.	10.000	SQM
227	Providing and Fixing Channeled Woodworks perforated panels of width 192mm, thickness of 15mm and length 2400 mm or as required by the Architect/ approving engineer, made of a high density fibre board with minimum 725 Kg/M3 density substrate with a laminated facing as per the approved shade & finish and a melamine balancing layer on the reverse side. The boards shall have a special perforation pattern where the visible surface has a "Helmholtz" fluted perforation of 3mm width and 5mm/13mm/21mm of visible panel each. The edges of the panels shall be "tongue-and-grooved" to receive special clips for installation. The back of the perforated panel shall have sound absorbing non-woven acoustical fleece having NRC of 0.52-0.63. The panels shall be mounted on special aluminium splines using clips provided by Armstrong and as approved by architect and complete in all respect..	10.000	SQM
228	Providing and fixing china mosaic tile of 6 - 8 mm for terrace to reduce the heat effect in a pattern as approved by architect and complete in all respect.	2548.000	SQM
229	Providing fixing thermal insulation of ceiling (under deck insulation)with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 80 mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	2250.000	SQM
230	**FINISHING**		
231	12 mm cement plaster on the rough side of single or half brick wall of mix : **1:4 (1 cement : 4 fine sand)**	2500.000	SQM
232	15 mm cement plaster on the rough side of single or half brick wall of mix : **1:4 (1 cement : 4 fine sand)**	2500.000	SQM
233	Neat cement punning	20.000	SQM

234	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.	19341.000	SQM
235	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	404.000	Per bag of 50kg cement used in the mix
236	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	50.000	SQM
237	Extra for plastering on circular work not exceeding 6 m in radius: **In two coat**	57.000	SQM
238	Extra for plastering done on moulding, cornices or architraves including neat finish to line and level: **In two coats**	57.000	SQM
239	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. **Two coats**	18108.000	SQM
240	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	9671.000	SQM
241	6 mm plaster on cement concrete or reinforced cement concrete work with white cement based polymer modified self curing mortar of approved make as per the direction of Engineer-In-Charge.	1924.000	SQM
242	Finishing walls with 100% Premium Acrylic emulsion paint having VOC less than 50gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (company Depot Tinted) with silicon additives. **New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)**	18108.000	SQM

243	French spirit polishing : **Two or more coats on new works including a coat of wood filler**	816.000	SQM
244	Providing & fixing hexagonal chicken mesh having opening 20mmx20mm of 26 gauge at juncitons of concrete & brick work or between different material etc. as approved by architect and complete in all respect.	194.000	SQM
245	Forming groove of uniform size from 12x12mm and upto 25x15mm in plastered surface as per approved pattern using wooden battens, nailed to the under layer including removal of wooden battens, repairs to the edges of plaster panel and finishing the groove complete as per specifications and as approved by architect and complete in all respect.	201.000	SQM
246	Controlled Dismantling of 150 MM thik. RCC Slab with Diamond floor Sawing and core	5.000	Metre
247	Controlled Dismantling of 450X650 MM thik. RCC Beam with Diamond floor Sawing and core Machine	5.000	SQM
248	Stair Case Slab Demolished by Electric Breaker	5.000	SQM
249	**WATER PROOFING**		
250	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 : Ist 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 recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer. **Using rough kota stone.**	60.000	SQM

251	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 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 : **Using rough kota stone.**	96.000	SQM
252	**Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, erraces etc consisting of following operations:** **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.**		
252.1	**Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Eng ineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.**		
252.2	**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 Engineerin- charge.** **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 Engineerin- 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.**		

252.3	(Described above)The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge : **With average thickness of 120 mm and minimum thickness at khurra as 65 mm.**	2548.000	Sqm
253	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	351.000	Sqm
254	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete : Serrated with central bulb (225 mm wide, 8-11 mm thick)	100.000	Metre
255	Providing and laying terrace garden with water proofing treatment including preparation of surface as required for treatment of roofs, plants and growing medium etc consisting of following operations: (a) Laying Drain cell (500x500x30 mm) over the water proofing compound. (b) Laying a layer of geotextile sheet (150 gsm) having non woven property over drain cell. (c) Spreading Cocopeat upto height of 450 mm over the roof & parapet. (d) Spreading & dressing of wormicompost over the roof. (e) Laying a layer of Carpet S-1 (grass including levelling, dressing & handling) over the roof. (f) Supply & Installation of Plants approved by Architect.	25.000	Sqm
256	Cleaning and Surface Preparation: The cleaning and preparation of the substrate to which waterproofing is applied must be carried out thoroughly to leave a sound base for the application. Any oil, grease, rust, etc. present on the surface must be removed mechanically which otherwise may impair	25.000	Sqm

	adhesion.Making coving with MasterSeal S 348 as required complete.		
257	Waterproofing Coat : Prior to application of the waterproofing membrane, an epoxy primer MasterSeal P2525 shall be applied over the spray foam insulation at a coverage rate of 0.4 kg/m2. This shall be followed by sprinkling of MasterTop SRA no. 3 @ 1 Kg/sqm over the primed surface to provide for a mechanical key for the subsequent layer. **The waterproofing membrane shall beMasterSeal M800, which is a solvent free, two component waterproofing membrane. It is highly reactive and can only be applied by special, two-component spray equipment. The mixed product should have the following features and benefits :** **(i) Elongation at break as per DIN 53504 shall be 400 %.** **(ii) Tensile Strength as per DIN 53504 shall be 8 - 10 N/mm2.** **(iii) Tear propagation resistance as per DIN 53515 shall be 16 N/mm2.** **(iv) Consumption shall be in the range of 2.1 - 2.2 Kg/m2 to achieve average thickness of 2 mm.**	25.000	Sqm
258	**STRUCTURAL GLAZING ALUMINIUM COMPOSITE PANEL**		
259.1	**Providing, assembling and supplying vision glass panels (DGUs) comprising of hermetically-sealed 6-12- 6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer heat strengthened float glass 6mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner Heat strengthened clear float glass 6mm thick, spacer tube 12mm wide, dessicants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor."(Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.25.2)"For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, sha0ll be measured in sqm."**		

259.2	Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, + 12mm Airgap + 6mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	2791.000	Sqm
260	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approvedmshop drawings , the aluminium quality as per grade 6063 T5 or T6mas per BS 1474,including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account).	27914.000	Kgs
261	**Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including:** **Structural analysis & design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminum sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)- cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation & drainage and protection against fire hazard including:**		
261.1	Fabricating and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimentional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon seperator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers.		

261.2	Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment , including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass. Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it water tight.		
261.3	Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, abour for fabricating and installation of aluminium grid, installation ofglazed units, T&P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified.The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, dully approved by Engineer-in-charge		
261.4	The item also includes 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 structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, 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.		
261.5	Note:- 1. The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub- head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in sqm. up to two decimal places.		

261.6	Note:- 2. The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 Sqm from the certified laboratories accreditated by NABL(National Accreditation Board for Testing and Calibration Laboratories), Department of Science & Technologies, India. Cost of testing is payable separately. The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work. Performance Testing of Structural glazing system Tests to be conducted in the NBL Certified laboratories		
261.7	(1) Performance Laboratory Test for Air Leakage Test (-50pa to - 300pa) & (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr. (2)Static Water Penetration Test. (50pa to 1500pa) as per ASTME- 331-09 testing method for a range up to 2000 ml. (3)Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml (4) Structural Performance Deflection and deformation by static air pressure test (1.5 times desing wind pressure without any failure) as per ASTME-330-10 testing method for a range upto 50 mm (5)Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test. Tests to be conducted on site. (6)Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000 ml		
261.8	**Work defined as above**	2791.000	Sqm
262	Extra for openable side / top hung vision glass panels (IGUs) including providing and supplying at site all accessories and hardwares for the openable panels as specified and of the approved make such as heavy duty stainless steel friction hinges, min 4 -point cremone locking sets with stainless steel plates, handles, buffers etc. including necessary stainless steel screws/ fasteners, nuts, bolts, washers etc. all complete as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer- in-Charge.	419.000	Sqm
263	Extra For Toughning Float Glass 6 mm thick as per directed by the Engineer-in-charge.	2791.000	Sqm

264	Providing and fixing 'UniStone' Wall Cladding Clay Tiles in Size 230mm x 75mm x 15mm thick in approved natural clay shade or 'Terracotta' made from natural clay. The appearance and shade of tiles should be natural terracotta having subtle variation in shade. The tiles would be made from special clay and firing temperature would be more than 1100° Celsius & shall have 1.75mm deep groove at the back side of the tile. The allowed variance in these tiles should not be more than ±2.5mm & top surface should be coated with silicone and surface water absorption should not exceed 2%. The breaking strength of the tile shall be ≥ 20 N/mm² asper DIN – 18166.The product should be applied on cured rough plastered surface. The substrate plaster should be in ratio of 1:3 (Cement: Coarse Sand) & tiles should be applied by an exterior polymer modifiedcementitious tile adhesive having tensile adhesion strength ≥ 2.5 N/mm2 as per EN 1348. The product should be applied with plus shaped spacers in desired groove width i.e. 6-8mm and all grooves horizontal and vertical should be pointed with a mix of fine sand and cement in ratio of (3 parts fine sand and 1 part of cement). All work should be carried out as per manufacturer's laying instructions. jointing with grey cement slurry @ 3.3kg/sqm including grouting the. joint with white cement & matching pigments & all hieght etc. complete.	811.000	Sqm
265	Wet cleaning of stone e levation with High Pressure Jet with minimum 120 bar pressure to wipe out foreign particles on the surface and then allow the surface to dry for at least 24 Hours .As a second step, providing and applying " Efflorescence prohibitor , anti fungal water pepellent Coating " consisting of BRAND KONEX WRA 2318 meant for herita ge building and having accreditation of Central Building Research Institute Roorkee on the st one elevation wall by spraying complete in all respect and heights ov er stone elevation .The work would be carried out all complete as per direction of the Engin eer in charge.	811.000	Sqm
266	**MISCELLANEOUS WORK**		
267	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-incharge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	26.000	Cum

268	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. **Made of G.I. wire of dia 4 mm**	119.000	Sqm
269	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant(Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	253.000	Sqm
270	**CARRIAGE OF MATERIALS**		
271	**Carriage of material by mechanical transport including. Loading , unloading and stacking.**		
272	0 km. upto 1 km. (Hard work)	3356.000	Cum
273	0 km. upto 0.5 km. (Hard rock)	1119.000	Cum
274	**BARRICADING WORK**		
275	Providing and erecting 6.00 metre high temporary barricading at site; each panel of size 3.0m x12.0m made of MS Pipe of 80mm dia and 25mm dia posts/horizontal members/bracings covered with 0.3mm thick GI sheet. The sheet shall be fixed with suitable welding/riveting. The panels shall be made so that gap of 50cm above the ground is available making overall height as 12.5 m. Suitable arramgement shall be made to fix the barricading to avoid from overturning by providing 250mm long expansion fastners at both ends. The work shall be executed as per drawing/ direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in- Charge. The barricading provided shall be retained in position at site continuously i/c shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer in-Charge. (Note :- One time payment shall be made for providing barricading from start of work till completion of work	454.000	RMT

	i/c shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).		
276	**P. T. Beam**		
276.1	Designing of PT Beams for Gravity Loads and taking approval of the same from Structural Consultants. (BONDED & UNBONDED PT SYSTEM) Providing, supplying and executing Post Tensioning works with 12.9mm/15.2mm dia. H. T. Strand (Make: Tata, Usha Martin, Kataria , JSW, D. P. Wires or equivalent with prior approval of the Engineer In Charge) conforming to IS:14268 with temporary corrosion protection including supply of all approved fittings and fixtures viz. anchorages, block-outs, wedges, ducts, adhesive tapes, pipes for grouting, HDPE Sheathing,Monobond Encapsulated Anchorages, Barrels, all consumables, etc., including cutting & profiling of H. T. Strands, Ducts, anchorages, tensioning of HT strands, grouting of tendons, all required equipment's, skilled manpower and technicians required to execute the job etc are included in the rates as directed by Engineer In charge.This rate is based on drawing provided without Pour Strip. In case of addition of Pour Strip as per site requirement, rate shall be revised subsequently.	35.000	TON
277	**ELECTRICAL WORK**		
278	**RMU**		

278.1	**RMU BREAKER WITH (2 INCOMER LOAD BREAK SWITCH + 2 SF6 BREAKER OUTGOINGS) AS PER PUNE MSEDCL/ GOVERNMENT APPROVED** **22 KV HT SWITCHGEAR** Supply, Receiving, Unloading, Shifting, Storing, Installation Testing & Commissioning of 22kV 630Amps 21KA/1 sec. Ring Main Unit Compact switchgear consisting of 2 NOS. INCOMING LOAD BREAK SWITCH & 2 NOS. SF6 OUTGOING BREAKER in insulated stainless steel enclosure with series trip, self powered microprocessor based numerical over current and earth fault relay protection. HT RMU shall preferably have site replaceable bushings to have very less downtime in the event of bushing breakage and restoration can be done immediately without sending the RMU to OEM Works. RMU Shall be provided as per Local MSEDCL/Govt standard.		
278.2	Microprocessor based IDMT Relay for Circuit Breakers - Self Powered along with series trip coil. Capacitive voltage indication fixed type system with LED SF6 Gas pressure indicator. Padlocking facility. Fault passage indicator for incoming Load break switch only Protection CT shall be minimum 150/1A ,5VA ,5P10. - 3 nos. All modules of the RMU shall be suitable for cable termination of 3C x 300 sq.mm Al XLPE Cable, incoming cable termination is included within the scope of work. - 1 Set	1	Set
279	**22 KV HT VCB PANEL** **22/33KV H.T. VCB SEVEN BREAKER PANEL BOARD (2 INCOMMING + 3 OUTGOING+1 SPARE + 1Nos. Bus Coupler)** **Supply, Receiving, Unloading, Shifting, Storing, Installation Testing & Commissioning of 22KV Five Vacuum Circuit Breaker Panel Board as 2 Incomming, 3 Outgoing+1 Spare & 1 Bus coupler and shall be metal clad floor mounting complete as per BOQ, specification and tender drawing as described.**		
279.1	1250A Vacuum circuit breaker of 31.5KA ruputuring capacity at 22KV rated, totally enclosed, air insulated metal clad housing, floor mounting, horizontal isolation, vermin proof, fully interlocked horizontal drawout type having isolation features and control devices complete with the following: Manually and motor operated, spring charged (release closing mechanism) trip free type,triple pole truck/trolley		

	mounted draw out, vacuum circuit breaker, incorporating mechanical as well as electrical ON/OFF indication. Spring charge/discharge mechanical indication"OFF" push buttons for emergency trip (shrouded) test/service position limit switches with 6 NO/6 NC breaker auxilliary contacts in service position, 24 Volts DC shunt trip coil and strip heater to prevent moisture absorption. HT Panel shall have both & rear door interlock. HT panel shall be Internal arc tested for 31.5KA/1 sec with AFLR classification as per IEC standard & manufacturer shall submit test report certificate.		
279.2	INCOMING PANEL - 2 NO.(Each feeder shall have following) 1250 A Vacuum circuit breaker of 31.1KA for 3 sec ruputuring capacity, totally enclosed,air insulated metal clad housing, floor mounting, horizontal isolation,vermin proof,fully interlocked horizontal drawout type having isolation features and control devices complete with the following: Single Phase double core current transformer 150/75/5 Amp epoxy cast insulated class of insulation E. Core 1-15VA burden class 1.0 for metering. Core 2- 15VA burden class 5P10 for protection. P.T's of 22KV/1.732, 110V/1.732, 100VA with suitable rating H.T. & L.T. fuse conforming to relevant IS Standards and complete as required.		
279.3	One no. numerical microprocessor based three phase over current (IDMT element) (2 O/C+1E/F) with earth fault relay with instantaneous elements. 1 No. Anti Pumping device. 1 No. Circuit breaker control switch for electrical (T/N/C). 1 No. limit switch for test & service position. 1 No. Voltmeter (0-22KV) with selector switch. (96mm square) 1 No. Ammeter (0-150Amp) with selector switch. (96mm square). 1 No. electronic type digital energy analyser having 30 days memory and parameters of KW, KWH, Power factor, frequency etc. Suitable for BMS compatible with all accessories. 1 Set of following indicating lamps. Red, Yellow & Blue for phase indication. Amber for Trip indication. Red `ON' Green `OFF'		
279.4	Spring charge indication. Auto trip indication. 1 No. hooter with hooter acceptance and reset push button.		

	1 no. master trip relay similar to PQ8 (ABB) or equivalent. Trip circuit supervision relay similar to TCS or equivalent. 1250A color coded heat shrinkable HT sleeved TP Copper busbar of 31.5KA for 3 sec fault rating. 1 Set of fuses, ferrules, wiring etc. as required. 1 Set. Three Phase Electronic static type under / over voltage Protection relays with alarm & indication. (Does not trip the VCB at Zero Voltage) (Model - Minilec - D2 VCT1). Or it can be part of main numerical relay. 1Set Surge protection-3 Nos. surge arrestor of suitable rating for surge protection from main supply - 22KV, 10KA discharge current, Class-2. Window Annunciation - 1 Set 8 Window solid state Audio/ Visual Annunciator with Test/ Accept/ Reset Push buttons and Electronic Hooter. (for O/C, E/F, Master trip opt, PT MCB Failure status, Under / Over voltage)		
279.5	**Note: All spare contacts of breaker or any other equipment inside the breaker shall be wired upto the outgoing terminal strip with appropriate ferrules/ coding. The terminal strip rating shall be suitable for connecting two wires of 2.5sqmm subjected to providing minimum size strip suitable for 4/6sqmm.** **1 Set of Power Pack 24V DC Supply Power Pack with 7 Ah Maintenance free Battery back up. Power Pack should be with Protections of over voltage/ under voltage / over charging.**		
279.6	**OUTGOING PANEL - 3 NOS. +1 NOS. SPARE (Each outgoing feeder shall have following)** 1250 A Vacuum circuit breaker of 31.1KA for 3 sec ruputuring capacity, totally enclosed,air insulated metal clad housing, floor mounting, horizontal isolation,vermin proof,fully interlocked horizontal drawout type having isolation features and control devices complete with the following: Single Phase double core current transformer 50/25/5 Amp epoxy cast insulated class of insulation E. Core 1-7.5VA burden class 1.0 for metering. Core 2-7.5VA burden class 5P10 for protection. One no. numerical microprocessor based three phase over current (IDMT element) (2 O/C+1E/F) with earth fault relay with instantaneous elements. 1 No. Anti Pumping device. 1 No. Circuit breaker control switch for electrical (T/N/C). 1 No. limit switch for test & service position. 1 No. Voltmeter (0-22KV) with selector switch. (96mm square) 1 No. Ammeter (0-50Amp) with selector switch. (96mm square).		

279.7	1 No. electronic type digital energy analyser having 30 days memory and parameters of KW, KWH, Power factor, frequency etc. Suitable for BMS compatible with all accessories. 1 Set of following indicating lamps. Red, Yellow & Blue for phase indication. Amber for Trip indication. Red `ON' Green `OFF' Spring charge indication. Auto trip indication. 1 No. hooter with hooter acceptance and reset push button. 1 no. master trip relay similar to PQ8 (ABB) or equivalent. Trip circuit supervision relay similar to TCS or equivalent. 1 Set of fuses, ferrules, wiring etc. as required. Auxiliary relay for transformer fault, alarm and trip as per below. 12 Annunciator window for all electrical and transformer fault. (for O/C, E/F, Master trip opt, WTI-(A & T), OTI-(A&T), Bucholz- (A &T), MOG-(A), PRV-(T), Oil Surge-(T)) Note: All spare contacts of breaker or any other equipment inside the breaker shall be wired upto the outgoing terminal strip with appropriate ferrules/ coding. The terminal strip rating shall be suitable for connecting two wires of 2.5sqmm subjected to providing minimum size strip suitable for 4/6sqmm. 1 Set of Power Pack 24V DC Supply Power Pack with 7 Ah Maintenance free Battery back up. Power Pack should be with Protections of over voltage/ under voltage / over charging. H.T. Panel (Panel, VCB, interrupter, relay & Meter must be of same make for better life cycle optimization) describe as above "Make : Siemens/Schneider Infrastructure /ABB. Note :VCB Panel shall be from OEMs only . Licensed System Integrators are not allowed to supply" Earth Bus - 75 x 6 mm Alu. earth bus with proper bonding to the panel Bus Coupler (1 Nos.) One (1) Nos. 1250A, 3-pole, 22 KV VCB Earth Bus - 75 x 6 mm Alu. earth bus with proper bonding to the panel TOTAL OF 33/22 KV HT PANELS C/O TO SUMMARY		
279.8	**H.T. VCB Panel describe as above**	1.000	Set
280	**Manhole:** **Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size),**		

	foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :		
280.1	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	14.000	Nos
281	**SUBSTATION WORKS**		
282	**DIESEL GENERATING SET:** **1500KVA, 415V DG SET WITH CANOPY** **Supply of 1500 KVA DG Set as per specification coupled with engine of , 16 cylinder four stroke, Radiator cooled developing rated output of min. 1735 BHP at 1500 RPM under NTP condition of ISO 3046. The DG set shall be with sound proof enclosure.The engine shall be complete with starting system with 24 volt DC supply having sealed maintenance free batteries of min. 160 AH / as per manufacturer standard, charger, inbuilt regulator, flywheel, coupling with guard, instrument panel.** **the engine shall be with exhaust mainfold, residential / hospital type silencer as per genset manufacturer standard, electronic governor and safety system such as low lube pressure, high water temperature, over speed, low coolant level alarm etc. AVM pads, special tools operation manual, including first fill of lube oil with accoustic enclosure as per particular specifications.** **The alternator shall be for 1500KVA at 0.8 power factor 415 volt, designed at 40 C/S, having class H insulation and temp rise limit to class H, self excited, self regulated, self ventilated in brush less design with automatic voltage regulator having voltage regulation +/- 1% at all load between no load to full loadand having min. of 95% efficiency at 100% load at 0.8 PF as per IEC60034-1 . It shall confirm to IS 4722 / BS 5000 / IEC 60034 & as per specification and equipment schedule.** **DG Set shall be Provided with PCC-3.3 / Eqv. Controller.**	1.000	Set

282.01	**ANCILLARY WORK**		
282.02	**FUEL PIPING** **Supply, fixing, testing and commissioning of MS heavy class piping (Class -C) conformting to IS: 1239 with necessary clamps, supports, anti vibration mountings, hangers and fittings such as bends, tees, reducers etc. painted as per specification.**		
282.03	50 NB Class "C" MS ERW pipe AS ABOVE	5.000	RM
282.04	40 NB Class "C" MS ERW pipe AS ABOVE	20.000	RM
282.5	25 NB Class "C" MS ERW pipe AS ABOVE	50.000	RM
282.6	Supply, & fixing of 990 liter (3.0 mm thick) fuel oil service tank with oil lavel indicator, inlet / outlet connection valve, air vent, pedestal for mounting etc.	2.000	Set
282.7	**Fuel Transfer Pump** Supply and installation of 0.5HP (Suitable capacity) fuel transfer pump with flame proof motor starter for transfering fuel from barrel to oil service tank.	2.000	Set
282.8	Supplying and fixing 6 Amps TPN MPCB's duly Sets housed in Flame proof Enclosure (weather proof) etc. as required	2.000	Set
282.9	Supply, fixing, testing and commissioning of 25mm dia 5mtr long flexible hose for connecting barral to fuel pump	2.000	Set
282.10	**VALVES & STRAINERS** **Supply, Receiving shifting to site, fixing and testing of following valves, stariners, for 990 Ltr tank fuel Handling system piping complete with companion flanges,nut bolts gaskets supports and painted etc. as per specification**		
282.11	**Ball Valves** 50 mm Gunmetal Valve	1.000	Nos
282.12	Ball Valves 40 mm Gunmetal Valve	2.000	Nos
282.13	Ball Valves 25 mm Gunmetal Valve	2.000	Nos

282.14	**Non return valves** 50 mm dia	1.000	Nos
282.15	Non return valves 40 mm dia	2.000	Nos
282.16	Non return valves 25 mm dia	2.000	Nos
282.17	**Y- Strainers** 50 mm dia	1.000	Nos
282.18	Y- Strainers 40 mm dia	1.000	Nos
282.19	Y- Strainers 25 mm dia	1.000	Nos
282.20	**Pot- strainers** 50 mm dia	1.000	Nos
282.21	Pot- strainers 40 mm dia	1.000	Nos
282.22	Pot- strainers 25 mm dia	1.000	Nos
282.23	**Foot valves** 50 mm dia	1.000	Nos
282.24	Foot valves 40 mm dia	4.000	Nos
282.25	Foot valves 25 mm dia	4.000	Nos
282.26	**EXHAUST SYSTEM** **Supply & fixing of exhaust piping with bends (including 90° and 45° bends), flanges packing and hardwares from flexible pipe outlet to outside including canopy at each outlet of following sizes**		
282.27	400 MM MS ERW pipe (5.2 MM THK) Details as above sr.no 282.26	40.000	RM
282.28	350 MM MS ERW pipe (5.2 MM THK) Details as above sr.no 282.26	5.000	RM
282.29	250 MM MS ERW pipe (4.85 MM THK) Details as above sr.no 282.26	5.000	RM

282.30	200 MM MS ERW pipe (4.65 MM THK) Details as above sr.no 282.26	10.000	RM
282.31	**Supplying and fixing of 75 MM thick, mineral wool insulation (of 96 Kg. Per cubic metre density) over the exhaust pipes of following diameter including cladding covered with wire mesh, aluminium sheet of 26 SWG and covering from outside complete, as required.**		
282.32	400 MM MS ERW pipe (5.2 MM THK) Details as above sr.no 282.31	40.000	RM
282.33	350 MM MS ERW pipe (5.2 MM THK) Details as above sr.no 282.31	5.000	RM
282.34	250 MM MS ERW pipe (4.85 MM THK) Details as above sr.no 282.31	5.000	RM
282.35	200 MM MS ERW pipe (4.65 MM THK) Details as above sr.no 282.31	10.000	RM
282.36	Insulation of Aluminium clading on residential silencers (1No. 1500KVA DG sets)	2.000	Nos
282.37	**Supply & Fixing of SS expansion Bellow for exhaust pipes .**		
282.38	400 MM exhaust SS Bellows	2.000	Nos
282.39	350 MM exhaust SS Bellows	1.000	Nos
282.40	250 MM exhaust SS Bellows	1.000	Nos
282.41	200 MM exhaust SS Bellows	2.000	Nos
282.42	**MS STRUCTURE WORK** Supply, fabrication, transportation, hoisting, erection & painting of common MS stack structure / MS support for 1500KVA DG Sets Exhaust pipes i.e channel angles, plates, flat, beam sheet etc. as per design including anchor bolts / dash fasterners/ boltsnuts/hardwares etc. as required complete with painting with one coat of primer and two coats of synthetic enamel paint as per approved shade for exhaust stack. (RCC Foundation is out of scope. (Structural Fabrication dwgs will get approval from structural consultant). **stack Height Approximate 30-35Meter as per CPCB - IV Norms.**	6.000	Ton
282.43	Supply & execution of canopy type MS structure made out of 40mm medium class MS pipe (class-B), 25 x 25 x 3mm angle iron form work and 14 SWG GI sheet structure shall be grouted in 1:2:4 CC foundation for hanging 3 Nos. 9 lit. each fire fighting buckets including providing buckets with	1.000	Set

	two coats of anticorrosive paints etc. complete as required.		
282.44	D.G SET SHALL BE EQUIPED WITH SYNC. CONTROLLER OF DAIF / WOODWARD / EQV. MAKE The engine & alternator of mentioned makes shall be mounted on common base frame as per specification & equipment schedule. **Note: DG sets to be run in synchronizing mode when complete capacity being installed at site.** **D.G Sets foundation shall be in the contractor scope**		
283	**1600 KVA DRY TYPE UNITIZED SUB-STATION WITH OFF LOAD TAP CHANGER (OUTDOOR TYPE)**		
283.1	Supply, installation, testing & commissioning of package type/unitised 22kV / 415 V Outdoor sub-station ,1600kVA made from G. I. enclosure complete as required conforming to IEC 62271-202 only and relevant IS specifications including K-20 Class as applicable for the rating, Internal Arc of 21 KA/1 Sec. IAC AB on 1:2:4 (1 cement :2 cores and : 4 Graded stone aggrregate of 40 mm nominal size) PCC foundation of suitable size extending 500 mm all around the outdoor enclosure and 1000 mm height (above ground level) complete with suitable sizes of GI Pipes for incoming/outgoing cables/earthing strips etc. and consisting of following complete as required. Angle iron frame of size 40x40x5mm NS all along the corner of the foundation. Note : CSS shall be from OEMs only . Licensed System Integrators are not allowed to supply.		
283.2	Package substation will have the following equipment :- HT SWITCHGEAR 22kV 630Amps 21KA/1 sec. Non-Extensible Ring Main Unit Compact switchgear consisting of 1 no. fixed manual Vacuum Circuit Breaker Module in SF6 insulated stainless steel enclosure with series trip, self powered microprocessor based numerical over current and earth fault relay protection. HT RMU shall preferably have site replaceable bushings to have very less downtime in the event of bushing breakage and restoration can be done immediately without sending the RMU to OEM Works. Interconnection between HT Switchgear and primary of transformer shall be done through 1C x 3R x 95 sq.mm Aluminium XLPE cable. - 1 No. Vacuum Interrupter, RMU and CSS shall be of same make to ensure life cycle optimization.		

283.3	Microprocessor based IDMT Relay for Circuit Breakers - Self Powered along with series trip coil. Capacitive voltage indication fixed type system with LED SF6 Gas pressure indicator. Padlocking facility. Fault passage indicator for incoming Load break switch only Protection CT shall be minimum 50/1A ,5VA ,5P10. - 3 nos. All modules of the RMU shall be suitable for cable termination of 3C x 300 sq.mm Al XLPE Cable, incoming cable termination is included within the scope of work.- 1 Set		
283.4	TRANSFORMER "1600KVA 22kV/0.415kV Dyn11 Copper Wound, Cast Resin Step Down ,Dry Type Transformer with OFF load tap Changer of +5% to -15% @ 2.5% with WTI scanner. Class of Insulation: H, Temperature rise limits 115 deg.C over an ambient of 50 degrees. Losses (Subject to IS tolerances) - No load losses - as per ECBC 2017 norms, Full load losses - as per ECBC 2017 norms, Vector group - Dyn11 and Impedance of as per IS(Subject to IS Tol.) with WTI scanner Transformer" OUTDOOR ENCLOSURE Outdoor type encloser of 1.6 mm (For non load bearing members) & 2.0 mm (For load bearing members) thickness having modular construction of Galvanised Sheet Steel in suitable design for better heat dissipation and providing robust construction. The Enclosure shall have IP54 degree of protection for HT & LT switchgear compartment & IP 23 degree of protection for transformer compartment. The enclosure exterior shall be painted with epoxy based powder paint (colour RAL 7032). Each compartment will be provided with the door and pad locking arrangement. The design of the enclosure should be type tested for suitablly handling any arcing inside the compartment for providing better safety to the operator. The compartment illumination lamp with door operated switch shall be provided for each compartment.		
283.5	**1600 KVA Cu wound dry type (-15 to +15 OFFLTC @ 2.5%) 22kv/415V T/F with 22KV RMU as described above**	1.000	Nos
284	**HT CABLES (INCLUDING INCOMING CABLES FROM MSEDCL) :** **22 KV Cable**		

285	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 22KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required. **Above 120 sq. mm and upto 400 sq. mm**	416.000	Metre
286	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 22 KV grade of following size in the existing RCC/HUME/ METAL pipe as required. **Above 120 sq. mm and upto 400 sq. mm**	104.000	Metre
287	**Supply of HT Cable** Supplying of 3 core 22 KV, HT XLPE Earthed cable as per IS:7098 (part-II), on IS angle, supports/ existing hume pipe, including clamps, saddles, screws etc, for fixing cables in indoor trenches, cable route marker mentioned the depth & voltage level at every 20Mtr. etc as required. **3 C x 300 Sq.mm, XLPE HT cable (Earthed)**	520.000	Metre
288	**HT Cable Termination** supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 22 KV grade as required : **300 sq. mm**	12.000	Each
289	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 22 KV grade as required : **300 sq. mm**	8.000	Each
290	**Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching** **(75 cm deep) and refilling etc as required as approved by architect and complete in all respect.**		
290.1	150 mm dia (FOR L.T.CABLE & COMMUNICATION CABLE)	450.000	RM
290.2	250 mm dia at 1000 mm depth(H.T..CABLE)	660.000	RM
290.3	300 mm dia at 900 mm depth(L.T.CABLE)	650.000	RM
291	**MAIN PANEL**		

291.01	**Design, manufacture, supply, Loading/ Un-Loading, installation, testing and commissioning of Main LT Panel Cum Synchronizing Panel fabricated out of 2mm thick for structural members (Load bearing members) and 1.6mm thick for door and covers (Non load bearing members) CRCA sheet in cubicle compartmentalize free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel 'T' irons and/ or flats wherever necessary, 16 gauge CRCA sheet steel shall be used for final distribution panels. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be (form-3b Construction) treated with all anticorrosive process before painting as per specifications with 2 coats of zinc chromate primer and final approved shade of enamelled paint. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3-phase, 4-wire, 50Hz supply system and with 15% spare space, lifting hooks shall also be provided in case of large panels.**		
291.2	Approval shall be taken for each panel before fabrication. Galvanized hardwares with zinc passivation shall be used in fabrication of panels. ACB: LSIG (Microprocessor Based) releases with Display & Comm. Port shall be used for incoming feeders such as Transformers and DG Sets & LSI releases for outgoing breakers. MCCB: MCCBs of above 250A Microprocessor Based and upto 250A thermal Magnetic releases.		

291.3	Breaking capacity mentioned is Ics value. This BOQ to be read in conjunction with technical specifications and Single Line Diagram (attached for reference). If any discrepancy occurs that should be brought to the notice of Client/Consultant before quoting the price otherwise stringent condition will be deemed to have been considered. All MCCBs shall be provided with rotary operating handle and ON/OFF lamps backed by 2Amp control MCB. All meters shall be digital type (unless otherwise specified) Multi-function meter with Rs-485 port to be provided as required to cover all the parameters as mentioned. All current/voltage transformer shall be cast resin type. All indicating lamps shall be LED type. Current density for bus bar shall not be more than 0.8A/Sqmm. Rating of Bus bar is after considering all derating factors. (Bus bar sizing calculation to be submitted for approval.) All internal control wiring shall be heat resistant type. All incoming breakers in Main LT panel shall be electrically interlocked. Bus bar chamber shall be provided at top only. Incoming and outgoing cable entry shall be from top/bottom as required. All feeders shall be provided with door interlocked with door defeat, pad lock facility. Live parts shall not be accessible after opening the door, Transparent acrylic sheet to be provided to cover the same. Spare contacts of ACBs/ MCCBs/ Relay/ Contactor shall be wired upto terminal block. 20% spare control terminal to be provided. All MCCBs shall be provided with variable O/L & S/C releases. Incoming MCCB shall be provided with E/F releases also All incoming/outgoing cables shall be terminated on links/terminals.		

291.4	INCOMING : 1600 KVA T/F-1/2/3 : (3 Nos.) (2Nos. Transformer connect in Future) Three (3) Nos. 2500 A 4P, EDO type ACB, 50 KA (Micro-Controller based with all releases). (PSS Incomer) 1500 KVA DG-1/2/3 Incoming: (3 Nos.) Three (3) Nos. 2500 A 4P, EDO type ACB, 50 KA (Micro-Controller based with all releases). (D.G Set Incomer) Metering: Six (6) Nos. (0-500V) Digital voltmeter with selector switch & control MCB's Six. (6) Nos. (0-2500A) Digital ammeter with Selector Switch and suitable ratio, CL-1, 15VA CT's for TRX. Phase indication lamps each backed up with 2 Amps MCB and ON/OFF switch. 6 Nos. Multi Function Maximum Demand Indicator with RS485 (EM6400NG/ Eqv.) with control MCB Sets of RYB phase indicating lamps with control MCBs.		
291.5	Protection: Undervoltage Relay (Inside Breaker). Overvoltage Relay (Inside Breaker). Under Frequency (Inside Breaker). Over Frequency (Inside Breaker). Maximum Demand (Inside Breaker). Leading & Lagging Power Factor (Inside Breaker). Earth Fault Relay REF Restricted earth relay Relay (6 Nos). Phase Sequence Relay (3Nos.) Reverse Power Relay (3Nos.) 3 Sets of 8 window Annunciator with Hooter,Auxillary Relays & all required Accessories for Relay Fault. 3Sets of metering C.T. of suitable ratio for 1Nos. APFC Relay in Capacitor control Panel at Transformer incomer. 3 Set of Surge Suppressor type B+C wiith 160A 4P FUSE backup protection.		
291.6	MAIN BUS BAR Three sets of 5000 A, TPN, 36kA, TPN AL. Bus Bar with PVC Sleeve in sealed Bus Chamber. Bus Coupler (2 Nos.) Two (2) Nos. 2500A, 4-pole, EDO type ACB (microprocessor based with all releases) (50kA) with ON/OFF indication. INTERLOCKING Electrical interlocking between 3Nos. Transformer incoming ACB's, 3 Nos. D.G. supply incoming ACB's & 2 No. Bus coupler 2500A ACB's so that any of the incoming ACB "ON" one bus & Bus coupler ACB's or only any of the incoming ACB on both with Bus coupler "OFF" can be closed at a time as per interlocking sequrence required. When main supply trips then DG should start automatically		

	& Vice versa to restore power supply, with auto change over at the incomers. System should include Micro PLC etc as required as approved by architect and complete in all respect.		
291.7	OUTGOINGS : Three (3) Nos. 2500A, TP+N MDO ACB.(50K) Three (3) Nos. 800A, TP+N MDO ACB.(36K) Six (6) Nos.3-phase Digital Energy Meters with RS -485 Port (Dual Source) with necessary CTs. AUTO START / AUTO STOP & AUTO / MANUAL LOAD SHARING, AUTO LOAD MANAGEMENT THROUGH PLC (SHALL BE CONSIDERED WOODWARD / DIEF EQV. RELAY CONTROLLER FOR AUTO SYNCHRONISATION DUE TO UN-AVAILABILITY OF PCC-3.3 CONTROLLER POWER COMMAND)		

291.8	i) 1 Set Micro PLC with IP / OP for control of (3Nos. DG Sets 1500 KVA with PCC 3.3 POWER COMMAND / Equal for Auto synchronisation. Micro PLC will also provide auto load management system, inter- locking & auto change over. MANUAL SYNCHRONISING ONLY WITH PCC3.3 ii) 1 set Power Supply 10A, 24V DC with built in EMI filter iii) 1 set Aux. / Control relays with 4 C/O , 24V DC iv) 3 Nos Engine Start / Stop Relays 24V DC v) 3 Nos Emergency Stop push buttons (Mushroom type) vi) 3 set Start / Stop push buttons vii) 3 set of Engine Cranking Relay viii) Lot - Indicating lights(LED TYPE) ix) 1 No. ON LINE UPS with SMF Battery 2KVA With 20 minute power back up. (20 Min. Backup at Full load capacity). x) 1 set Control relays 240 V AC xi) Lot - Control MCB 2A SP xii) Lot- Power MCB 16A /6A xiii) Lot-Control terminals xiv) 3 Nos. Power Sockets 6/16A / 6 pin (1No. Socket Supply directly from transformer incomer & 2nd Socket Supply from common Bus bar) & Provided in UPS / Near to PLC chamber xv) 3 nos. selector switch 6A, Auto / Manual & DG selection (for 2 nos. D.G. Sets) xvi) 1 No. DC supply healthy indicating light xviii) 1 No.DC Failure indicating light with alarm		
291.9	BATTERY CHARGER:- (For DG Sets) 3 Sets 24V 30A DC Battery charger having proterction of over Voltage / Under voltage / Over charging. Battery charger shall be comptele with DC ammeter , DC Voltmeter & LED indicating lamps as required. * Upto 500KVA DG Sets Capacity 20A & Above 500KVA DG Sets 30A DC Charger shall be provided. - Suitable size of Exhaust fans with Air filter as per requirment. - Mimic Panel shall be Provided sufficient size (370mmX270mm) as per suggested in Previuos projects, Indicative LED lamp type. - Panel space heaters with control MCB & Thermostat, covered LED lamp controlled by door switch for each panel.		
291.10	1 No. 75 x 6 mm. Aluminium earth bus across the width of panel Any additional component/ device (Including UPS, SMPS, Power supply, power pack) required for proper operation of control/ synchronization/ interlocking scheme shall be		

	considered by Panel manufacturer without any additional cost. FIRE SUPPRESSION SYSTEM IN ABOVE MAIN LT PANEL Supply, Installation, testing & commissioning of fire suppression sytem in Above Main LT Panel with Novec gas (FK 5 112 / Eqv) including heat detection polymide tube alongwith master control unit & all fixing accessories to complete the job. (Make: Honeywell / Ceasefire / minimax)		
291.11	**Main LT Panel described above.**	1.000	Set
292	**MAIN BUILDING DISTRIBUTION PANEL (MBDP)** Design, manufacture, supply, Loading/ Un-Loading, installation, testing and commissioning of Main LT Panel Cum Synchronizing Panel fabricated out of 2mm thick for structural members (Load bearing members) and 1.6mm thick for door and covers (Non load bearing members) CRCA sheet in cubicle compartmentalize free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel 'T' irons and/ or flats wherever necessary, 16 gauge CRCA sheet steel shall be used for final distribution panels. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be (form-3b Construction) treated with all anticorrosive process before painting as per specifications with 2 coats of zinc chromate primer and final approved shade of enamelled paint. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3-phase, 4-wire, 50Hz supply system and with 15% spare space, lifting hooks shall also be provided in case of large panels.		
292.1	Approval shall be taken for each panel before fabrication. Galvanized hardwares with zinc passivation shall be used in fabrication of panels. ACB: LSIG (Microprocessor Based) releases with Display & Comm. Port shall be used for incoming feeders such as Transformers and DG Sets & LSI releases for outgoing breakers. MCCB: MCCBs of above 250A Microprocessor Based and upto 250A thermal Magnetic releases.		
292.2	Breaking capacity mentioned is Ics value. This BOQ to be read in conjunction with technical specifications and Single Line Diagram (attached for reference). If any discrepancy occurs that should be brought to the notice of Client/Consultant before quoting		

	the price otherwise stringent condition will be deemed to have been considered. All MCCBs shall be provided with rotary operating handle and ON/OFF lamps backed by 2Amp control MCB. All meters shall be digital type (unless otherwise specified) Multi-function meter (EM6436 or equivelent) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA.to be provided as required to cover all the parameters as mentioned. All current/voltage transformer shall be cast resin type. All indicating lamps shall be LED type. Current density for bus bar shall not be more than 0.8A/Sqmm. Rating of Bus bar is after considering all derating factors. (Bus bar sizing calculation to be submitted for approval.)		
292.3	All internal control wiring shall be heat resistant type. All incoming breakers in Main LT panel shall be electrically interlocked. Bus bar chamber shall be provided at top only. Incoming and outgoing cable entry shall be from top/bottom as required. All feeders shall be provided with door interlocked with door defeat, pad lock facility. Live parts shall not be accessible after opening the door, Transparent acrylic sheet to be provided to cover the same. Spare contacts of ACBs/ MCCBs/ Relay/ Contactor shall be wired upto terminal block. 20% spare control terminal to be provided. All MCCBs shall be provided with variable O/L & S/C releases. Incoming MCCB shall be provided with E/F releases also All incoming/outgoing cables shall be terminated on links/terminals.		

292.4	INCOMING : MAAIN LT PANEL : (2 Nos) Two (2) Nos. 2500 A 4P, EDO type ACB, 50 KA (Micro-Controller based with all releases). (PSS Incomer) SOLAR SYSTEM One (1) Nos. 400 A 4P,MCCB 35KA (Micro-Controller based with all releases). (Slar System Incomer) with 400A 4P Contactor Metering: Two (2) Nos. (0-500V) Digital voltmeter with selector switch & control MCB's One (1) Nos. (0-2500A) Digital ammeter with Selector Switch and suitable ratio, CL-1, 15VA CT's for TRX. One (1) Nos. (0-400A) Digital ammeter with Selector Switch and suitable ratio, CL-1, 15VA CT's for TRX. Phase indication lamps each backed up with 2 Amps MCB and ON/OFF/Trip switch. 1 Nos.Multifunction Digital meter (consisting of Voltage, Amps, kWh, kW, P.F. parameter) with RS 485 Port. 2 Nos. Multi Function Maximum Demand Controller with RS485 (EM7230/ Eqv.) with control MCB Sets of RYB phase indicating lamps with control MCBs.		
292.5	Protection: Undervoltage Relay (Inside Breaker). Overvoltage Relay (Inside Breaker). Under Frequency (Inside Breaker). Over Frequency (Inside Breaker). Maximum Demand (Inside Breaker). Leading & Lagging Power Factor (Inside Breaker). Earth Fault Relay 1No. RPR (Reverse Power Relay) at Solar incomer		
292.6	MAIN BUS BAR Two sets of 2500 A, TPN, 50kA, TPN AL. Bus Bar with PVC Sleeve in sealed Bus Chamber. Bus Coupler (1 Nos.) One (1) Nos. 2500A, 4-pole, EDO type ACB (microprocessor based with all releases) (50kA) with ON/OFF indication. INTERLOCKING Electrical interlocking between 2Nos. Transformer incoming ACB's, 1No. Solar supply incoming ACB's & 1 No. Bus coupler 2500A ACB's & so that any of the incoming ACB "ON" one bus & Bus coupler ACB's or only any of the incoming ACB on both with Bus coupler "OFF" can be closed at a time as per interlocking sequrence required.		

	When main supply trips then DG should start automatically & Vice versa to restore power supply, with auto change over at the incomers. System should include Micro PLC etc as required as approved by architect and complete in all respect.		
292.7	OUTGOINGS : Tow (2) Nos. 1000A, TP+N MDO ACB.(50K) (HVAC Panel Feeder) Two (2) Nos. 630A, TP+N MCCB.(36K) (Cap. Panel) Two (2) Nos. 250A, TP+N MCCB.(36K) (Future Floor- 1&2) Three (3) Nos. 200A, TP+N MCCB.(36K) (G.F,S.F,T.F L,SP& CSU/AHU Panel) One (1) Nos. 200A, TP+N MCCB.(36K) (Future Floor) Two (2) Nos. 200A, TP+N MCCB.(36K) (Lift Panel (W+S)) Two (2) Nos. 200A, TP+N MCCB.(36K) (UPS Panel-1 & Panel-2) One (1) Nos. 200A, TP+N MCCB.(36K) (Fire Fighting Panel) One (1) Nos. 160A, TP+N MCCB.(36K) (Ventilation Panel G.F) One (1) Nos. 160A, TP+N MCCB.(36K) (EV Vehical Charging Panel) Provision One (1) Nos. 125A, TP+N MCCB.(36K) (Plumbing Panel)		

292.8	One (1) Nos. 100A, TP+N MCCB.(36K) (Ventilation For Lift Pressurization) Two (2) Nos. 100A, TP+N MCCB.(36K) (External Feeder-1 & 2) One (1) Nos. 100A, TP+N MCCB.(36K) (For Dedicated Server panel) One (1) Nos. 100A, TP+N MCCB.(36K) (For STP Panel Incomer) One (1) Nos. 1000A, TP+N MDO ACB.(50K) (Spare) One (1) Nos. 630A, TP+N MCCB.(36K) (Spare) One (1) Nos. 400A, TP+N MCCB.(36K) (Spare) One (1) Nos. 250A, TP+N MCCB.(36K) (Spare) One (1) Nos. 125A, TP+N MCCB.(36K) (Spare) One (1) Nos. 100A, TP+N MCCB.(36K) (Spare) 2 Nos. B+C Type (SDP) with 160A 4P Fuse 28 Nos.3-phase Digital Energy Meters with RS -485 Port (EM6436 or equivelent) with necessary CTs. Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA. FIRE SUPPRESSION SYSTEM IN ABOVE MAIN BUILDING DISTRIBUTION PANEL (MBDP) Supply, Installation, testing & commissioning of fire suppression sytem in Above MAIN BUILDING DISTRIBUTION PANEL (MBDP) with Novec gas (FK 5 112 / Eqv) including heat detection polymide tube alongwith master control unit & all fixing accessories to complete the job. (Make: Honeywell / Ceasefire / minimax)		
292.9	**Main Building Distribution Panel described above.**	1.000	Set
293	**2 NOS. CAPACITOR PANEL (CCP) 250 KVAR :-** Note: Provision for APFCR Panel to be made in such a way that if any transformer will go in shutdown for maintenance than its relevant capacitor panel will do compensation of power factor for other transformer which isnow taking load of shutdown transformer.		

293.1	INCOMING : 1No . 630A, TP+N MCCB (35kA) with inbuilt Micro processor based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 630 A TPN Alu. Bus Bar, 35kA with PVC Sleeve in sealed Powder Coated Bus Chamber. METERING, INDICATION AND RELAY : 1 No. Multi Function meter with RS 485 (VAF & PF) with CT 1 set Automatic Power Factor Correction Relay (11 Steps) with digital Power Factor Meter 1 set of R/Y/B phase indication Lamp with control MCBs. 1 Sets of "ON/OFF/TRIP " LED Indicating lamp 1 No. Auto / Manual Selector Switch 1 set of Aux. Contactors 1 No. timer for manual mode switching 1 set Control MCB		
293.2	OUTGOING : Capacitor Banks shall be Heavy Duty type equal to MPP-HD and 7% detuned reactor shall be copper wound only design at 525V. 2 Set of 50KVAR Capacitor bank with 7% Harmonic Block Reactor, 125A TP contactor and 125 A TP MCCB (25kA) Capacitor rating to be designed for required output KVAR at 415V. 4 Sets of 25 KVAR Capacitor bank with 7% Harmonic Block Reactor, 63A TP contactor and 63 A TP MCCB (25kA) Capacitor rating to be designed for required output KVAR at 415V. 2 Sets of 15 KVAR Capacitor bank with 7% Harmonic Block Reactor, 40A TP contactor and 40 A TP MCCB (25kA) Capacitor rating to be designed for required output KVAR at 415V. 1 Set of 10 KVAR Capacitor bank with 7% Harmonic Block Reactor, 32A TP contactor and 32 A TP MCCB (25kA) Capacitor rating to be designed for required output KVAR at 415V. 2 Set of 5 KVAR Capacitor bank with 7% Harmonic Block Reactor, 16A TP contactor and 16 A TP MCCB (25kA) Capacitor rating to be designed for required output KVAR at 415V. 1 Nos. B+C Type (SDP) with 125A 4P Fuse Capacitor shall be rated @ 525 Volt for required capacitor value at 415V after 7% derating.		

293.3	OUTGOING METERING & INDICATION : 11 Sets "ON/ OFF" LED Indicating lamps. 11 Sets "ON/ OFF" Push Buttons. 11 Sets Control MCBs & Neutral links. 11 Sets of Digital Ammeter with built-in selector switch & 3CT's. Panel space heaters with control MCB & Thermostat, covered LED lamp controlled by door switch for each panel. Sufficient Nos. of 200mm Exhaust fans with Air filter for each Panel of Capacitor & Reactor compartment. 50X6 mm AL. earth bus across the width of panel FIRE SUPPRESSION SYSTEM IN ABOVE CAPACITOR PANEL (CCP) Supply, Installation, testing & commissioning of fire suppression sytem in Above CAPACITOR PANEL (CCP) with Novec gas (FK 5 112 / Eqv) including heat detection polymide tube alongwith master control unit & all fixing accessories to complete the job. (Make: Honeywell / Ceasefire / minimax)		
293.4	**CAPACITOR PANEL described above.**	2.000	Set
294	**GROUND FLOOR L, SP & AHU/CSU PANEL** INCOMING : 1 No. 200A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 250A TPN Alu. Bus Bar 25 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
294.1	OUTGOING : 8 nos. 63A FP MCB (10KA) C-Curve 6 nos. 40A FP MCB (10KA) C-Curve 4 nos. 32A FP MCB (10KA) C-Curve 8 nos. 20A FP MCB (10KA) C-Curve 4 nos. 16A FP MCB (10KA) C-Curve 1 Nos. B+C Type (SDP) with 125A 4P Fuse		

294.2	**G.F Light small power, CSU/AHU Panel described above.**	1.000	Set
295	**SECOND FLOOR LIGHT, SMALL POWER & AHU/CSU PANEL** INCOMING : 1 No. 200A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 250A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
295.1	OUTGOING : 7 nos. 63A FP MCB (10KA) C-Curve 5 nos. 40A FP MCB (10KA) C-Curve 1 nos. 32A FP MCB (10KA) C-Curve 7 nos. 25A FP MCB (10KA) C-Curve 6 nos. 20A FP MCB (10KA) C-Curve 2 nos. 16A FP MCB (10KA) C-Curve 1 Nos. B+C Type (SDP) with 125A 4P Fuse		
295.2	**S.F Light small power, CSU/AHU Panel described above.**	1.000	Set
296	**THIRD FLOOR LIGHT, SMALL POWER & AHU/CSU PANEL** INCOMING : 1 No. 200A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 250A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		

296.1	OUTGOING : 9 nos. 63A FP MCB (10KA) C-Curve 5 nos. 40A FP MCB (10KA) C-Curve 3 nos. 32A FP MCB (10KA) C-Curve 3 nos. 25A FP MCB (10KA) C-Curve 12 nos. 20A FP MCB (10KA) C-Curve		
296.2	**T.F Light small power, CSU/AHU Panel described above.**	1.000	Set
297	**VENTILATION PANEL (GROUND FLOOR)** INCOMING : 1 No. 160A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 200A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
297.1	OUTGOING : 2 nos. 63A TP+N MCCB (25KA) 1 nos. 63A FP MCB (10KA) D-Curve 2 nos. 40A FP MCB (10KA) D-Curve 5 nos. 25A FP MCB (10KA) D-Curve 1 Nos. B+C Type (SDP) with 125A 4P Fuse		
297.2	**Ventilation Panel (Ground Floor) described above.**	1.000	Set

298	**SUB VENTITION PANEL (SECOND FLOOR)** INCOMING : 1 No. 63A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 100A TPN Alu. Bus Bar 25 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
298.1	OUTGOING : 3 nos. 32A FP MCB (10KA) D-Curve 5 nos. 20A FP MCB (10KA) D-Curve		
298.2	**Sub-Ventilation Panel (Second Floor) described above.**	1.000	Set
299	**SUB VENTITION PANEL (THIRD FLOOR)** INCOMING : 1 No. 63A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set 100A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv). 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps . OUTGOING : 2 nos. 32A FP MCB (10KA) D-Curve 5 nos. 25A FP MCB (10KA) D-Curve 1 nos. 20A FP MCB (10KA) D-Curve		
299.1	**Sub-Ventilation Panel (Third Floor) described above.**	1.000	Set

300	**VENTILATION PANEL (LIFT PRESS.)** INCOMING : 1 No. 100A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 150A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps . OUTGOING : 11 nos. 25A FP MCB (10KA) D-Curve 1 Nos. B+C Type (SDP) with 125A 4P Fuse		
300.1	**Ventilation Panel (Lift Press.) described above.**	1.000	Set
301	**MAIN UPS PANEL** INCOMING : 2 No. 200A, TP+2N MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 400A TP+2N Cu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 2Nos. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 2 sets of R/Y/B phase indication Lamp & MCB. 2 Sets of ON/OFF/TRIP Indicating lamps .		

301.2	OUTGOING : 5 nos. 100A TPN MCCB (25KA) (G.F,S.F,T.F UPS Main DB) 1 nos. 100A TPN MCCB (25KA) (Spare)) 1 no. 63A TPN MCCB (25KA) 1 nos. 63A FP MCB (10KA) C-Curve (Spare) 1 nos. 32A FP MCB (10KA) C-Curve (Spare) 1 Nos. B+C Type (SDP) with 125A 4P Fuse MCCB IN INSULATED ENCLOSURE FOR UPS 2 Nos. 200A 4P MCCB 2 Nos. 200A TP +2N MCCB 1 Nos. 63A 4P MCCB 1 Nos. 63A TP+2N MCCB		
301.3	**Main UPS Panel described above.**	1.000	Set
302	**G.F MAIN UPS DB** INCOMING : 1 No. 100A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 150A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
302.1	OUTGOING : 4 nos. 40A FP MCB (10KA) C-Curve UPS DB (Small Power) 2 nos. 40A FP MCB (10KA) C-Curve Emergency Light DB-1,2 1 nos. 40A DP MCB (10KA) C-Curve BMS 1 nos. 25A DP MCB (10KA) C-Curve (Fire Alarm) 1 nos. 100A FP MCCB (16KA) (Spare)) 2 nos. 63A FP MCCB (16KA) 2 nos. 40A FP MCB (10KA) C-Curve (Spare)		
302.2	**Main UPS DB GF described above.**	1.000	Set

303	**S.F MAIN UPS DB** INCOMING : 1 No. 100A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 150A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
303.1	OUTGOING : 4 nos. 40A FP MCB (10KA) C-Curve For UPSDB-1/2/3/4 2 nos. 40A FP MCB (10KA) C-Curve Emergency Light DB-1,2 2 nos. 40A FP MCB (10KA) C-Curve (Spare)		
303.2	**Main UPS DS S.F described above.**	1.000	Set
304	**T.F MAIN UPS DB** INCOMING : 1 No. 100A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection. BUS BAR : One set of 150A TPN Alu. Bus Bar 35 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATIONS 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCBs. (EM 6436/Eqv) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc 1 set of R/Y/B phase indication Lamp & MCB. 1 Set of ON/OFF/TRIP Indicating lamps .		
304.1	OUTGOING : 4 nos. 40A FP MCB (10KA) C-Curve For UPSDB-1/2/3/4 2 nos. 40A FP MCB (10KA) C-Curve Emergency Light DB-1,2 2 nos. 40A FP MCB (10KA) C-Curve (Spare)		
304.2	**Main UPS DS T.F described above.**	1.000	Set

305	**MAIN ELEVATOR PANEL-1** INCOMING : 2 No. 200A, TP+N MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection as approved by architect and complete in all respect. 2 No. 200A, 4P Power Contactor Electrical Interlocking between Two Incomers BUS BAR : One set of 250A TPN Alu. Bus Bar 25 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATION : 2 Nos. digital Multi Function Meter (A,V, KWH) and CT's & control MCB's (Eqv. To EM6436) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc Two set of R/Y/B phase indication Lamp with control MCBs. 2 Sets of ON/OFF/TRIP Indicating lamps .		
305.1	OUTGOING : 2 Nos. 100A TPN MCCB (25KA) (Sub Lift Panel) 2 Nos. 63A TPN MCCB (25KA) (Lift-1/2) 1 Nos. 100A TPN MCCB (25KA) (Spare) 1 Nos. 63A 4P RCBO (100mA) 3 Nos. 40A FP MCB (10KA) C-Curve 1 Nos. B+C Type (SDP) with 125A 4P Fuse		
305.2	**MAIN ELEVATOR PANEL described above.**	1.000	Set
306	**ELEVATOR PANEL-2 & PANEL-3** INCOMING : 1 No. 100A, TP+N MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection as approved by architect and complete in all respect. BUS BAR : One set of 150A TPN Alu. Bus Bar 25 kA with PVC Sleeve in sealed bus chamber. METERING AND INDICATION : 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCB's (Eqv. To EM6436) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc One set of R/Y/B phase indication Lamp with control MCBs. 1 Sets of ON/OFF/TRIP Indicating lamps .		

306.1	OUTGOING : 2 Nos. 63A TPN MCCB (25KA) (Lift-1/2) 1 No. 63A 4P RCBO (100mA) (10KA) 3 Nos. 40A FP MCB (10KA) C-Curve		
306.2	**ELEVATOR PANEL-2 & PANEL-3 described above.**	2.000	Set
307	**PLUMBING PANEL** INCOMING : 1 No. 125A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection as approved by architect and complete in all respect. BUS BAR : One set of 200 A TPN Alu. Bus Bar, 36kA with PVC Sleeve in sealed Powder Coated Bus Chamberas approved by architect and complete in all respect. METERING AND INDICATION : 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCB's (Eqv. To EM6436) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc One set of R/Y/B phase indication Lamp with control MCBs. 1 Sets of ON/OFF/TRIP Indicating lamps .		
307.1	OUTGOING : 2 Nos. 50A TP MPCB (50KA) with Star delta Starter (1W+1S) & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required. for 30HP/22.4 K.W 2 Nos. 14A TP MPCB (50KA) with DOL Starter (1W+1S) & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required. for 5HP/3.7K.W 4 Nos. 10A TP MPCB (50KA) with DOL Starter (1W+1S) & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required. for 3HP/2.2 K.W		

307.2	2 Nos.7A TP MPCB (50KA) with DOL Starter (1W+1S) & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required. for 1HP/ 0.7K.W 2 Nos. 6A TP MPCB (50KA) with DOL Starter (2W+2S) & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required. for 2HP/1.5 K.W 1 Nos. 50A TP MPCB (50KA) 1 Nos. 14A TP MPCB (50KA) 1 Nos. 10A TP MPCB (50KA) 1 Nos. B+C Type (SDP) with 125A 4P Fuse		
307.3	**PLUMBING PANEL described above.**	1.000	Set
308	**FIRE FIGHTING PANEL** INCOMING : 1 No. 200A, 4P MCCB (25KA) with inbuilt Thermal Magnatic based release for Over load, Short circuit & Earth Fault protection as approved by architect and complete in all respect. BUS BAR : One set of 250 A TPN Alu. Bus Bar, 25kA with PVC Sleeve in sealed Powder Coated Bus Chamberas approved by architect and complete in all respect. METERING AND INDICATION : 1 No. digital Multi Function Meter (A,V, KWH) and CT's & control MCB's (Eqv. To EM6436) and Meter can be capable to show olts, Amps, F & PF Simultaneously, W/VA etc One set of R/Y/B phase indication Lamp with control MCBs. 1 Sets of ON/OFF/TRIP Indicating lamps .		

308.1	OUTGOING : 2 Nos. 150A TP MCCB (25KA) with Soft Stator & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required for Hydrant pump 75HP/56. KW 2 Nos. 16A TP MPCB (10KA) with DOL Starter & O/L Relay according to type -2 co-ordination, current sensing single phasing preventor, Ammeter with 1 C.T., Start/Stop Push Button, ON/OFF/TRIP indication Lamps, control MCB 6A and associate wiring as required for Fire Terrace pump 7.50HP/(5.6KW) 1 Nos. 160A TP MCCB (25KA) 1 Nos. 14A TP MPCB (50KA)		
308.2	**FIRE FIGHTING PANEL described above.**	1.000	Set
309	**FEEDER PILLAR (WEATHER PROOF EXTERNAL LIGHTING PANEL)** Supplying, receiving, storing, handling erecting, testing and commissioning of Outdoor feeder pillar type factory fabricated Double door distribution board 14 guage rust inhibited and backed enamel painted sheet steel and comprising of incoming MCB, outgoing MCBs', bus bar (copper),neutral bus bar , top & bottom detachable conduit entry plates, earthing terminals with bolts, grounting etc. complete as per specifications (Class of Protection IP- 55) as approved by architect and complete in all respect. 63A 4P MCCB (25KA) with 63A 4P Contactor Electronic Timer (Astronomical Type) (for 24 hours) Auto/ Manual selector switch Push buttons (ON / OFF) 6Nos 20 A 4P MCB)10kA) 2Nos 20 A DP MCB)10kA)		

309.1	MCB BEFORE CONTACTOR / WITHOUT TIMER 4Nos 40A 4P MCB (10kA) for LPDB For HT/Meter, Guard Room-1 ,2 &3,4 2Nos 40A 4P MCB (10kA) for Sliding Gate-1 & 2 3 Nos 40A 4P MCB (10kA) for Spare 1 Nos 25A 4P MCB (10kA) for Spare 2 Nos 20A 4P MCB (10kA) for Spare 2 Nos 6A 4P MCB (10kA) for Spare B+C Type (SDP) with 63A 4P Fuse Internal wiring		
309.2	**Feeder Pillar Panel described as above**	2.000	Set
310	**POINT WIRING & ACCESSORIES**		
311	**WIRING IN MS CONDUIT**		
311.1	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. Group C	1202.000	Point
312	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. Group C	1803.000	Point
313	Wiring for light/ power plug with 2X4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit alongwith 1 No 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	6158.000	Metre

314	**Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.** **FOR LIGHTING CIRCUIT/ SUB MAIN WIRING**		
314.1	2x1.5 sq mm + 1x1.5 sq mm earth wire	4700.000	Metre
314.2	2x2.5 sq mm + 1x2.5 sq mm earth wire	18850.000	Metre
314.3	2x6 sq mm + 1x6 sq mm earth wire	540.000	Metre
314.4	2x10 sq mm + 1x10 sq mm earth wire	140.000	Metre
314.5	4x6 Sq. mm + 2x6 Sq. mm Cu earth wire.	190.000	Metre
314.6	4 X 10sq.mm + 2 X 6 sq.mm earth wire	150.000	Metre
314.7	4 X 16sq.mm + 2 X 6 sq.mm earth wire.	100.000	Metre
315	**Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.**		
315.1	20mm dia	290.000	Metre
315.2	25mm dia	1020.000	Metre
315.3	32mm dia	350.000	Metre
316	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non residential buildings).	3726.000	Each
317	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 etc. as required.	312.000	Each
318	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing of 3 nos.20A 3PIN SP MOULDED SOCKET FOR WATER COOLER modular socket outlet and 20A amps modular switch, connection etc. as required.	7.000	Each

319	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	110.000	Each
320	**Supply and fixing following size/modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.**		
320.1	1 or 2 module (75mmX75mm)	50.000	Each
320.2	3 Module (100mmX75mm)	100.000	Each
320.3	6 Module (200mmX75mm)	100.000	Each
320.4	8 Module (125mmX125mm)	5.000	Each
321	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.	27.000	Each
322	**RACE WAYS AND JUNCTION BOXES AND COVERS** **Supply & fixing of following size (GI RACEWAY-Fabricated from 1.5 mm thick GI Sheet) race ways for electrical & LV wiring including Fixing Bracket, Coupler, neoprene gasket in joints, bends, sockets cutting the floor & jaming the race way/ hanging in ceiling, supporting arrangement as approved by consultant/ architect with all necessary hard ware (including civil work) as per site requirement. The thickness of raceway & cover shall be as per technical specification.**		
322.1	100 mm wide x 38 mm deep. (1 Compartment)	1342.000	Metre
322.2	150 mm wide x 38 mm deep. (2 Compartment)	257.000	Metre
322.3	150 mm wide x 38 mm deep. (1 Compartment)	370.000	Metre
322.4	225 mm wide x 38 mm deep. (3 Compartments)	340.000	Metre
322.5	300 mm wide x 38 mm deep. (3 Compartments)	220.000	Metre
323	**Supply & fixing of following size of Raceway Junction Box made out of 2.0 mm thick GI Sheet & top cover of 3mm thick GI Sheet for electrical & LV wiring including, cutting the floor & jaming the junction box/ hanging in ceiling, supporting arrangement as approved by consultant/ architect with all necessary hard ware (including civil work). (Junction box to be provided as per drawing/ as per site requirement & as per specification). Height of the junction box should be adjustable from 65-90mm. Junction box should be**		

	supplied with the metal cover for protecting the junction box during constructions at site.		
323.1	150 mm wide x 38 mm deep. (1 Compartment)	74.000	Each
323.2	225 mm wide x 38 mm deep. (3 Compartments)	68.000	Each
323.4	300 mm wide x 38 mm deep. (3 Compartments)	44.000	Each
324	**MV DISTRIBUTION BOARDS**		
325	**MCB DISTRIBUTION BOARDS** **Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, 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)**		
325.1	6 way, Double door	1.000	Each
325.2	8 way, Double door	6.000	Each
325.3	12 way, Double door	7.000	Each
326	**Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, 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)**		
326.1	6 way (4 + 18), Double door	3.000	Each
326.2	8 way (4 + 24), Double door	6.000	Each
326.3	12 way (4 + 36), Double door	26.000	Each

327	Supplying and finishing 5 amps to 32 amps rating, 240 volts 'C' series, miniature circuit breaker suitable for inductive and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Single pole	1606.000	Each
328	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	80.000	Each
329	**Supplying and fixing following rating, double pole, (single phase and neutral), 240 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.**		
329.1	40 A	63.000	Each
329.2	63 A	111.000	Each
330	**Supplying and fixing following rating, 'C' series, four pole, 415 volts, MCB in the existing MCB DB complete with connections, testing and commissioning etc. as required.**		
330.1	40 amps	33.000	Each
330.2	63 amps	49.000	Each
331	**Supplying and fixing following rating, 'C' series, Double pole, 240 volts, MCB in the existing MCB DB complete with connections, testing and commissioning etc. as required.**		
331.1	40 amps	15.000	Each
331.2	63 amps	18.000	Each
332	**MV CABLES, FIRE SURVIVAL CABLE & CABLE TRAY**		
333	**With Sand & Protective Covering**		
334	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation and refilling the trench etc as required, but excluding sand cushioning and protective covering. **Above 185 sq. mm and upto 400 sq. mm**	794.000	Metre

335	**Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.**		
335.1	Upto 35 sq. mm	500.000	Metre
335.2	Above 35 sq. mm and upto 95 sq. mm	710.640	Metre
335.3	Above 95 sq. mm and upto 185 sq. mm	575.000	Metre
335.4	Above 185 sq. mm and upto 400 sq. mm	1741.440	Metre
336	**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)	1658.000	Metre
336.1	Above 35 sq. mm and up to 95 sq.mm (clamped with 25x3 mm MS Flat clamp)	230.000	Metre
336.2	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	476.000	Metre
336.3	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	1047.000	Metre
337	**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.**		
337.01	4 X 35 sq. mm (32mm)	10.000	Each
337.02	3½ X 50 sq. mm (35 mm)	2.000	Each
337.3	3½ X 70 sq. mm (38mm)	10.000	Each
337.4	3½ X 95 sq. mm (45 mm)	6.000	Each
337.5	3½ X 120 sq. mm (45 mm)	16.000	Each
337.6	3½ X 150 sq. mm (50 mm)	2.000	Each
337.7	3½ X 185 sq. mm (57mm)	8.000	Each
337.8	3½ X 240 sq. mm (62mm)	1.000	Each
337.9	3½ X 300 sq. mm (70 mm)	46.000	Each

337.10	3½ X 400 sq. mm (90 mm)	28.000	Each
337.11	4 X 10 sq. mm (25 mm)	18.000	Each
337.12	4 X 16 sq. mm (28mm)	38.000	Each
337.13	4 X 25 sq. mm (28mm)	8.000	Each
337.14	4C X 6 Sq.mm	88.000	Each
337.15	4C X 4 Sq.mm	26.000	Each
337.16	4C X 2.5 Sq.mm	120.000	Each
337.17	3C x 16 Sqmm	1.000	Each
337.18	3C x 10 Sqmm	1.000	Each
337.19	3C x 6 Sqmm	26.000	Each
337.20	3C x 4 Sqmm	12.000	Each
337.21	3C x 2.5 Sqmm	12.000	Each
338	**Supply, loading, transportation unloading at site, storages at site, shifting from storage place to site of following sizes of XLPE insulated PVC sheathed, FRLS, Aluminium/Copper conductor armoured power cable of 1.1 KV grade conforming to IS amended upto date and as per specifications.** **Aluminium conductor**		
338.01	3.5C x 400 Sq.mm	2916.000	Metre
338.02	3.5C x 300 Sq.mm	1323.000	Metre
338.3	3.5C x 240 Sq.mm	1.000	Metre
338.4	3.5C x 185 Sq.mm	115.000	Metre
338.5	3.5 C x 150 Sq.mm	58.000	Metre
338.6	3.5 C x 120 Sq.mm	518.000	Metre

338.7	3.5 C x 95 Sq.mm	219.000	Metre
338.8	3.5 C x 70 Sq.mm	292.000	Metre
338.9	3.5 C x 50 Sq.mm	81.000	Metre
338.10	4 C x 35 Sq.mm	435.000	Metre
338.11	4C X 25 Sq.mm	449.000	Metre
338.12	4C X 16 Sq.mm	242.000	Metre
338.13	**Copper conductor:-**		
338.14	4C X 16 Sq.mm	986.000	Metre
338.15	4C X 10 Sq.mm	259.000	Metre
338.16	4C X 6 Sq.mm	2354.000	Metre
338.17	4C X 4 Sq.mm	638.000	Metre
338.18	4C X 2.5 Sq.mm	2616.000	Metre
338.19	3C x 16 Sqmm	60.000	Metre
338.20	3C x 10 Sqmm	55.000	Metre
338.21	3C x 6 Sqmm	436.000	Metre
338.22	3C x 4 Sqmm	120.000	Metre
338.23	3C x 2.5 Sqmm	99.000	Metre
339	**Supplying and laying of following 1100 volts grade PVC insulated sheathed copper conductor armoured control cables in existing trenches cables trays, clamped on wall with suitable saddles, fixing bolts, including testing and commissioning.**		
339.1	2 core 2.5 Sq.mm PVC insulated copper conductor armoured control cables	100.000	Metre
339.2	4 core 2.5 Sq.mm PVC insulated copper conductor armoured control cables	415.000	Metre

339.3	4 core 1.5 Sq.mm PVC insulated copper conductor armoured control cables	87.000	Metre
339.4	10 core 2.5 Sq.mm PVC insulated copper conductor armoured control cables	85.000	Metre
339.5	12 core 2.5 Sq.mm PVC insulated copper conductor armoured control cables	150.000	Metre
340	**Control Cables termination: Supplying of all materials and making terminations of control cable terminations for control cables above item complete with single brass compression glands, copper lugs etc. as required.**		
340.1	2 Core x 2.5 Sq.mm Cable	4.000	Each
340.2	4 Core x 2.5 Sq.mm Cable	8.000	Each
340.3	4 Core x 1.5 Sq.mm Cable	4.000	Each
340.4	10 Core x 2.5 Sq.mm Cable	4.000	Each
340.5	12 Core x 2.5 Sq.mm Cable	8.000	Each
341	**COPPER FLEXIBLE CABLES FOR UPS & EARTH**		
341.1	1CX70 sq mm PVC cu flexible cable	182.000	RM
341.2	1CX50 sq mm PVC cu flexible cable	94.000	RM
341.3	1CX10 sq mm PVC cu flexible cable	298.000	RM
341.4	1CX6 sq mm PVC cu flexible cable	3535.000	RM
341.5	1CX4 sq mm PVC cu flexible cable	747.000	RM
341.6	1CX2.5 sq mm PVC cu flexible cable	2134.000	RM
341.7	1CX1.5 sq mm PVC cu flexible cable	187.000	RM
342	**CABLE TRAY** **Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.**		

342.1	100 mm width x 50 mm depth x 1.6 mm thickness	650.000	Metre
342.2	150 mm width x 50 mm depth x 1.6 mm thickness	110.000	Metre
342.3	300 mm width X 50 mm depth X 1.6 mm thickness	980.000	Metre
342.4	450 mm width X 62.50 mm depth X 2.0 mm thickness	65.000	Metre
342.5	600 mm width X 62.50 mm depth X 2.0 mm thickness	80.000	Metre
342.6	750 mm width X 62.50 mm depth X 2.0 mm thickness	40.000	Metre
342.7	900 mm width X 75 mm depth X 2.0 mm thickness	35.000	Metre
343	**Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "bends" (galvanisation 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.**		
343.1	100 mm width x 50 mm depth x 1.6 mm thickness	135.000	Each
343.2	150 mm width x 50 mm depth x 1.6 mm thickness	8.000	Each
343.3	300 mm width X 50 mm depth X 1.6 mm thickness	87.000	Each
343.4	450 mm width X 62.50 mm depth X 2.0 mm thickness	8.000	Each
343.5	600 mm width X 62.50 mm depth X 2.0 mm thickness	7.000	Each
343.6	750 mm width X 62.50 mm depth X 2.0 mm thickness	8.000	Each
343.7	900 mm width X 75 mm depth X 2.0 mm thickness	50.000	Each
344	**Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Tee" (galvanisation 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.**		
344.1	100 mm width x 50 mm depth x 1.6 mm thickness	135.000	Each
344.2	150 mm width x 50 mm depth x 1.6 mm thickness	8.000	Each

344.3	300 mm width X 50 mm depth X 1.6 mm thickness	98.000	Each
344.4	450 mm width X 62.50 mm depth X 2.0 mm thickness	10.000	Each
344.5	600 mm width X 62.50 mm depth X 2.0 mm thickness	7.000	Each
344.6	750 mm width X 62.50 mm depth X 2.0 mm thickness	8.000	Each
344.7	900 mm width X 75 mm depth X 2.0 mm thickness	10.000	Each
345	**Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Cross member"(galvanisation 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.**		
345.1	100 mm width x 50 mm depth x 1.6 mm thickness	75.000	Each
345.2	150 mm width x 50 mm depth x 1.6 mm thickness	11.000	Each
345.3	300 mm width X 50 mm depth X 1.6 mm thickness	98.000	Each
345.4	450 mm width X 50 mm depth X 2.0 mm thickness	7.000	Each
345.5	600 mm width X 50 mm depth X 2.0 mm thickness	8.000	Each
345.6	750 mm width X 50 mm depth X 2.0 mm thickness	4.000	Each
345.7	900 mm width X 75 mm depth X 2.0 mm thickness	2.000	Each
346	**Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray "Reducer" (galvanisation 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.**		
346.1	100 mm width x 50 mm depth x 1.6 mm thickness	165.000	Each
346.2	150 mm width x 50 mm depth x 1.6 mm thickness	11.000	Each
346.3	300 mm width X 50 mm depth X 1.6 mm thickness	98.000	Each

346.4	450 mm width X 50 mm depth X 2.0 mm thickness	7.000	Each
346.5	600 mm width X 50 mm depth X 2.0 mm thickness	8.000	Each
346.6	750 mm width X 50 mm depth X 2.0 mm thickness	4.000	Each
346.7	900 mm width X 75 mm depth X 2.0 mm thickness	2.000	Each
347	**DANGER BOARD/SHOCK RESTRORATION CHART ETC.**		
347.1	Supplying and fix of standard shock restoration chart in heavy wooden frame with 3 mm thick plane glass.	1.000	No
347.2	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both side, and with inscription in single red colour on front side as required.	8.000	Each
347.3	Providing and fixing M.V. danger notice plate of 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both side, and with inscription in single red colour on front side as required.	8.000	Each
347.4	Supply & laying of insulating mats suitable for 1.1 KV Class A (2mm thick) as per IS15652-2006 (1.0 m wide) for LT Panel as approved by architect and complete in all respect.	26.000	RM
347.5	Supply & laying of insulating mats suitable for 22 KV Class A (2.5mm thick) as per IS15652-2006 (1.0 m wide) for HT Panel as approved by architect and complete in all respect as approved by architect and complete in all respect.	54.000	RM
347.6	Supply of First Aid Box including items like Gauze pads (at least 4 by 4 inches), Two large gauze pads (at least 8 by 10 inches), A box of adhesive bandages , One gauze roller bandage , Two triangular bandages , Wound cleaning agent , Scissors , At least one blanket , Tweezers , Adhesive tape , Latex gloves , Resuscitation equipment (such as resuscitation bag, or airway or pocket mask), Two elastic wraps , A splint , Direction for requesting emergency assistance .	2.000	Set
347.7	Supply of Rubber Hand gloves suitable for 22KV supply System as approved by architect and complete in all respect.	1.000	Pair
348	**Supply & fixing of following fire extinguishers complete with high pressure control value, rubber braided discharge hose. Body of fire extinguishers should be CCE approved with IS: 2878 marking. The valve shall confirm to IS: 3224 as approved by architect and complete in all respect.**		
348.1	9 KG CO2 Fire Extinguishers.	8.000	Nos

348.2	10 KG DCP Fire Extinguishers.	12.000	Nos
348.3	50 liters foam type Fire Extinguishers with Troly.	4.000	Nos
349	**EARTHING SYSTEM** **MAINTENANCE FREE EARTHING**		
350	Copper bonded rod with Low carbon steel, high tensile strength copper bonded rod with min 254 microns of copper plating, UL listed with company name marked on rod. Diameter- 17.2 mm, Length- 3 meters, Material- Copper Bonded, Coating thickness- 250 microns, min, Approvals- Tested acc. IEC / EN 62561-2, UL 467., 20 kg backfilled compound, - Material Carbon based backfill/earthing compound, Fulgurite formation test at direct lightning (10/350 µm), lightning long duration test at- 100C No fulgurites/Pass, Environmentally Friendly ROHS certified, Resistivity- < 0.12 ΩM, Complying Standard- IEC 62561-7 , Testing Approvals Certified from- NABL accredited Laboratories. StSt 316 grade clamp to terminate the load on earth electrode. Dimension- 160x35x3 mm., Poly plastic pit cover of material- Polymer Body & Cover, Product Code- HEP, Dimensions- 308 mm (L) x 308 mm (W) X 214 mm (H), Weight 2.5 kg (5.50 LBS).,	70.000	Nos
351	**Supplying, receiving, laying, fixing, jointing, and terminating of the following Strips / wires in masonry treches / on walls / on cable tray / along the cable with suitable G.I. / Copper Clamps, screws etc. The wire shall be terminated with proper sockets, washers, bolts & nuts. All joints shall be rigid using double rivites as approved by architect and complete in all respect.**		
351.1	50 x 6 mm CU Strip with PVC sleeve	490.000	Metre
351.2	50 x 6 mm GI Strip	1530.000	Metre
351.3	40 x 6 mm GI Strip	510.000	Metre
351.4	40 x 6 mm CU Strip	160.000	Metre
351.5	25 x 3 mm GI Strip	564.000	Metre
352	Providing & fixing 25mm x 5mm Copper strip on surface or in recess for connection etc as required.	270.000	Metre
353	Providing & fixing 25mm x 5mm G.I strip on surface or in recess for connection etc as required.	2974.000	Metre

354	Providing and fixing 8 SWG dia G.I. wire on surface or in recess for loop earthing as required.	1050.000	Metre
355	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	240.000	Metre
356	**LIGHT FIXTURE AND FAN**		
357	Deep Recessed downlight luminaire with HPE (High-Performance Efficiency) LED (Light Emitting Diode) maximum system power: 15 W, minimum Luminous flux of luminaire 1650 lm, 110 Lm/w, Colour temperature of 4000 K, Neutral white, CRI > 80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, 230 V constant current driver, 70% of luminous flux after 50,000 operating hours; Energy efficient LEDs, Direct light emission, Luminaire housing in aluminium, Polyester powder white coloured coat applied over a 5- stage pre-treatment, deep recessed Prismatic diffuser for homogenous light distribution, UGR<19, ZHLS (ZERO HALOGEN LOW SMOKE) wiring, Electronic control gear, Protection class II, IP 20 Ø = 175 mm, DA(Ø) = 160 mm, H = 59 mm.	865.000	Nos
358	LED recessed luminaire (2X2Panel Light) SM with LED(Light Emitting Diode) maximum system power: 25W, Luminous flux of luminaire 3500 lm, 140 Lm/w, colour temperature of 4000K, neutral white, 230V constant current driver, 70% of luminous flux after 50,000 operating hours, energy efficient LEDs, CRI>80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, electronic control gear, direct light emission, sheet metal CRCA housing, polyester white powder coat applied over a 5-stage pre-treatment, Prismatic diffuser for glare-free uniform light distribution, UGR<19, Protection class I, IP40, surge protection of 2.5kV, L = 595mm, B = 595mm, H = 70mm	586.000	Nos
359	Pendant luminaire Alcove Up Dn with LED (Light Emitting Diode), maximum system power 28 W (14 W Up, 14 W Dn), minimum luminous flux of luminaire 3360 lm, 120 Lm/w, CRI>80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, colour temperature of 4000 K, Neutral white, 230V constant current driver, 70% of luminous flux after 50,000 operating hours, energy-efficient LEDs, luminaire profile in aluminium, Plastic moulded end caps, Polyester powder Aluminium white coloured coat applied over a 5- stage pre-treatment, Deep recessed high-efficiency glare-free snap-fit micro-prismatic diffuser for homogeneous light distribution, UGR<19, ZHLS (Zero Halogen Low Smoke) internal wiring, integral electronic control gear, adjustable suspender, Protection class I, IP20, L = 1199 mm, B = 75 mm, H = 90 mm, PL max = 1500 mm.	44.000	Nos

360	COB based LED recessed adjustable directional downlight , with maximum system power: 35 W, minimum Luminous flux of luminaire 3500 lm, 100 Lm/W, Colour temperature of 4000 K, Neutral white, CRI > 80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, 230V constant current driver, 70% of luminous flux after 50,000 operating hours; energy-efficient LEDs, direct light emission, housing in die-cast aluminium, Polyester powder white coloured coat applied over a 5-stage pre-treatment ceiling trim, deep recessed clear glass cover with aluminium reflector and a beam angle of 25°, UGR<16, ZHLS (ZERO HALOGEN LOW SMOKE) wiring, electronic control gear, Protection class II, IP 40, Ø = 162 mm, DA(Ø) = 150 mm, H = 162 mm.	1.000	Nos
361	Pendant luminaire Slash S with HE-High Efficiency LED (Light Emitting Diode), maximum system power: 25W, minimum luminous flux of luminaire 2750 lm, 110 Lm/W, colour temperature of 4000K, CRI>80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, 230V constant current driver, 70% of luminous flux after 50,000 operating hours, energy efficient LEDs, direct light emission, luminaire profile powder coated white, Prismatic diffuser for homogenous light distribution, Driver replacement from the top without opening the optical part, UGR<19, ZHLS(ZERO HALOGEN LOW SMOKE) internal wiring, integral electronic control gear, Protection class I, IP40, L = 1175 mm, B = 52 mm, H = 64 mm, PH=1500mm.	388.000	Nos
362	Recessed with Trim luminaire Slash S with HPE (High Performance Efficiency) LED (Light Emitting Diode) maximum system power: 25W, minimum luminous flux of luminaire 2750 lm, 120 Lm/W, Colour temperature of 4000 K, Neutral white, CRI > 80, R9>0, THD<5%, P.F>0.95, Driver Efficiency>88%, SDCM<3, 230 V constant current driver, 70 % of luminous flux after 50,000 operating hours, Energy efficient LEDs, Direct light emission, Luminaire profile in aluminium, Polyester powder white coloured coat applied over a 5- stage pre-treatment, Prismatic snap fit diffuser for homogenous light distribution, Driver replacement from the bottom without removing the fixture from ceiling, UGR<19, ZHLS (ZERO HALOGEN LOW SMOKE) internal wiring, Electronic control gear, Protection class I, IP 40, L = 1187 mm, B = 64 mm, H = 64 mm, L (ET) = 1175 mm, B (ET) = 52mm	53.000	Nos
363	LED strip (flexible) with 60 LEDs per meter, 10W per Meter, 4000K, 2835 SMD package with thermal tape of high thermal convection factor, beam angle of 120°, MacAdum 5, constant voltage driving circuit, L = 1000mm, H = 10mm, B = 1.4mm.	1067.000	Metre

364	Pendant luminaire Ring with HPE (High Performance Efficiency) LED (Light Emitting Diode) maximum system power: 60 W, minimum Luminous flux of luminaire 6000 lm, Colour temperature of 4000 K, Neutral white, CRI > 80, SDCM<3 , R9>0 230 V constant current driver, 70% of luminous flux after 50,000 operating hours; Energy efficient LEDs, Direct light emission, Luminaire profile in aluminium, Polyester powder black coloured coat applied over a 5- stage pre-treatment, Prismatic diffuser for a homogenous light distribution, ZHLS (ZERO HALOGEN LOW SMOKE) internal wiring, Electronic control gear, Protection class I, IP20, Ø = 980 mm, W = 100 mm, H =67 mm, PL = 1500 mm.	3.000	Nos
365	COB based wall mounted luminaire Frost, maximum system power: 2x12 W, minimum luminous flux of luminaire 2400 lm, colour temperature of 4000 K, Neutral white, CRI > 80, 70% of luminous flux after 50,000 operating hours, 230V constant current driver, direct-indirect light emission, aluminium housing polyester powder coated white applied over a 5-stage pre-treatment, clear glass cover with reflectors and a beam angle of 24°, integral electronic control gear, Protection class II, IP 20 Ø = 75 mm, H = 300 mm, B = 90 mm.	13.000	Nos
366	Surface Mounted luminaire Tube with HPE (High-Performance Efficiency) LED (Light Emitting Diode) maximum systempower: 9 W,minimum Luminous flux of luminaire 900 lm, Colour temperature of 4000 K, Neutral white, CRI > 80, R9>0 230 Vconstant current driver, 70 % of luminous flux after 50,000 operating hours, Energy-efficient LEDs, Direct light emission,Luminaire profile in aluminium, Polyester powder whitecoloured coat applied over a 5- stage pre-treatment, snap-fitsatin diffuser for homogenous light distribution, ZHLS (ZEROHALOGEN LOW SMOKE) internal wiring, Electronic controlgear,Protection class I, IP 40, MacAdam 3, T.H.D ≤ 10%, driverefficiency ≥ 88%, surge protection of 2.5 kV, PF = 0.95	66.000	Nos
367	Wall Mounted luminaire Bulkhead with HPE (High-Performance Efficiency) LED (Light Emitting Diode) system power: 10W, Luminous flux of luminaire 800 lm, Colour temperature of 4000 K, Neutral white, CRI > 80, 230 V constant current driver, 70% of luminous flux after 50,000 operating hours; Energy efficient LEDs, Direct light emission, Luminaire housing in aluminium, Polyester powder grey coloured coat applied over a 5- stage pre-treatment, Opal diffuser for homogenous light distribution, ZHLS (ZERO HALOGEN LOW SMOKE) internal wiring, Electronic control gear, Protection class II, IP 65, L = 215 mm, B = 132 mm, H = 55 mm.	72.000	Nos

368	LED Recessed directional spotlight JUPITER with LED(Light Emitting Diode) maximum system power: 15W, minimum luminous flux of luminaire 1500lm, 230V constant current driver, 70% of luminous flux after 50,000 operating hours; energy efficient LEDs, colour temperature of 4000K, neutral white, direct light emission, beam angle of 20°, luminaire part adjustable, polyester powder coat applied over a 5-stage pre-treatment, electronic control gear, Protection class II, IP20, MacAdam 3, T.H.D≤ 10%, driver efficiency ≥ 88%, surge protection of 2.5kV, L = 90mm, B = 90mm, DA(ø) = 80mm, ET = 65mm	12.000	Nos
369	Ceiling mounting downlight Zing with LED (Light Emitting Diode), maximum system power of 15W, minimum luminous flux of luminaire 1650 lm, 110 Lm/W, colour temperature of 4000K, neutral white, CRI > 80, R9>0, P.F>0.95, Driver Efficiency>88%, SDCM<3, 70% of luminous flux after 50,000 operating hours, 230V constant current driver, direct light emission, housing in die-cast aluminium, polyester powder coated white applied over a 5 stage pre-treatment, opal protuded for uniform illumination, LG7 Complaince, integral electronic control gear, Protection class II , IP 20, Ø = 170 mm, H = 43 mm	79.000	Nos
370	Pendant luminaire with LED(Light Emitting Diode) maximum system power: 26W, minimum luminous flux of luminaire 2730lm, a colour temperature of 4000K, neutral white, CRI>80, 230V constant current driver, 70% of luminous flux after 50,000 operating hours; energy efficient LEDs, direct light emission, aluminium housing powder coated black, integral electronic control gear, SDCM <3, T.H.D≤ 10%, driver efficiency ≥ 88%, surge protection of 2.5kV, Protection class I, IP20, Ø =427mm, H = 227mm,	11.000	Nos
371	Supply of 60W LED Street Light delivering minimum system lumen of 7200 lm & the luminaire shall be with system efficacy ≥ 120 lm/W. Aluminium die cast powder coated & High purity PC lenses. The operating CCT shall be 5700K with CRI of ≥70. The luminaire shall be BIS Registered with electronic driver with input voltage range of 150-300V, IP 66, IK 10, 50000 Hrs LED life with L70 Criteria. The LED driver shall be easily available in India for repair and service. The LED shall be SMD type. The luminaire shall be with following certifications: LM79 & LM80 issued by LED manufacturer along with Photo Biological Safety Standard. 4KV internal surge protection in both Common Mode and Differential Mode.	19.000	Nos

372	Supply of 45W LED Post Top Light delivering minimum system lumen of 4500 lm & the luminaire shall be with system efficacy ≥ 100 lm/W. Aluminium die cast powder coated & High purity PC lenses. The operating CCT shall be 5700K with CRI of ≥70. The luminaire shall be BIS Registered with electronic driver with input voltage range of 150-300V,IP 66,IK 07, 50000 Hrs LED life with L70 Criteria. The LED driver shall be easily available in India for repair and service. The LED shall be SMD type. The luminaire shall be with following certifiactions: LM79 & LM80 issued by LED manufacturer along with Photo Biological Safety Standard.	33.000	Nos
373	Supply of 45W LED Gate Light delivering minimum system lumen of 4275 lm & the luminaire shall be with system efficacy ≥ 90 lm/W. Aluminium die cast powder coated housing with Acrylic diffuser. The operating CCT shall be 5700K with CRI of ≥70. The luminaire shall be BIS Registered with electronic driver with input voltage range of 150-270V,IP 65,IK 05, 50000 Hrs LED life with L70 Criteria. The LED driver shall be easily available in India for repair and service. The LED shall be SMD type. The luminaire shall be with following certifiactions: LM79 & LM80 issued by LED manufacturer along with Photo Biological Safety Standard.	7.000	Nos
374	Supply of LED surface mounted tube light.	25.000	Nos
375	15 Watt Klite Rado Bollard Light.	18.000	Nos
376	300MM Dia Plastic Body Exhaust Fan. Minimum fan power required : 0.37 KW	4.000	Nos
377	450MM Dia MS body heavy duty Exhaust Fan . Minimum fan power required : 0.37 KW	5.000	Nos
378	Supply, Installation, Testing and Commissioning of 1200 mm sweep, BEE 5 star rated, ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, Power Factor not less than 0.9, Service Value (CM/M/W) minimum 6.00, Air delivery minimum 210 Cum/Min , 350 RPM (tolerance as per IS : 374-2019), THD less than 10%, remote or electronic regulator unit for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 degree C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC Supply, earthing etc. complete as required.	5.000	Nos
379	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.	5.000	Each

380	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 1.5 mm 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 drawing.	5.000	Each
381	Supplying and fixing extra conduit down rod of 20 cm length G.I. pipe 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored).	5.000	Nos
382	**LAN SYSTEM**		
383	Supply, Installation, Testing & Commissioning of Core Switch 1RU cchassis with 24 SFP+ users, 2 SFP+ uplinks or VFL and 2 QSFP28 ports. QSFP28 ports operate as 40/100G-4x10/25G. Back to front cooling. Includes dual AC power supplies.with 05 year support & warranty	2.000	Nos.
384	Supply, Installation, Testing & Commissioning of Supply of Gigabit Ethernet 1RU chassis with 24 10/100/1000 BaseT ports and 2 1G* RJ45/SFP+ combo, 2 1G/10G SFP+ uplink/VFL ports. I with a power cord, .with 05 year support & warranty Stacking Cables etc as required	26.000	Nos.
385	Supply, Installation, Testing & Commissioning of Supply of Gigabit Ethernet 1RU chassis with 24 PoE 10/100/1000 BaseT ports and 2 1G* RJ45/SFP+ combo, 2 1G/10G SFP+ uplink/VFL ports. Includes an internal AC power supply 380W power budget) with a power cord, .with 05 year support & warranty Stacking Cables etc as required (for IP Phones)	26.000	Nos
386	Supply, Installation, Testing & Commissioning of Supply of 10 Gigabit optical transceiver SFP+). Supports monomode fiber over 1310nm wavelength nominal) with an LC connector. Typical reach of 10Km.with 05 year support & warranty	24.000	Nos.
387	Supply of 10 Gigabit direct attached cable (DAC, uplink/stacking) 1m, SFP+ with 05 year support & warranty	40.000	Nos.
388	Supply, Installation, testing and commissioning of UTP 4 pair 23 AWG CAT 6A LSZH Cable in the existing surface/ recessed steel/ PVC conduit as required conforming to the following standards like ANSI TIA/TIA 568.2-D, ISO/IEC 11801. Cable Dia 7.6 mm with bending radius - 4 X Cable Diameter, pulling force is 11.5Kg. Operates at frequency of 500 Mhz	41900.000	meter

389	Supply, Installation, testing and commissioning of 24 port Cat 6A 19" Modular Toolless Patch Panel (loaded) enable all possible combinations of the various types of cable (UTP, FTP, SFTP) mounted on the same panel by using various toolless connector blocks/modules. Have a metal structure enabling them to be durably fixed to the uprights of the 19" chassis and assuring automatic grounding between toolless RJ-45 connectors, the panel, and the 19" uprights of the enclosure. Include rear cable support with plastic cable guides to hold cable without need for cable ties. Include quick mounting system to mount the panel into the 19" rails without use of cage-nuts. These may be used to secure the connections of wifi access points, IP cameras, servers, or other critical devices. Front Removal IO's option for maintenance and trouble shooting with 6 Different Colours Labels for Labelling & Identification of Individual Ports. Tested and guaranteed under dual circuit IEEE PoE++ more than 90W for up to 2500 on-load connections / disconnections.	24.000	Nos.
390	SITC of CAT6A UTP 26 AWG Patch Cord - 1 mtr with cross separator , Manufactured from stranded wires for longer flex-life , Minimum length of 1m, and maximum length of 5m Conforming to the following standards like Smoke density: Series IEC 61034 / IEC 61034-2, EN 61034-2, IEC 60754/IEC 60754-2, EN 60754-2, IEC 60332-1/60332-1-2, UL VW-1 with tensile strength >50N, Number of Insertion upto 2500 Duty Cycle	1676.000	Nos.
391	SITC of CAT6A UTP 26 AWG Patch Cord - 2 mtr with cross separator , Manufactured from stranded wires for longer flex-life , Minimum length of 1m, and maximum length of 5m Conforming to the following standards like Smoke density: Series IEC 61034 / IEC 61034-2, EN 61034-2, IEC 60754/IEC 60754-2, EN 60754-2, IEC 60332-1/60332-1-2, UL VW-1 with tensile strength >50N, Number of Insertion upto 2500 Duty Cycle	1676.000	Nos.
392	Supply of Wall Mount, assembled, UL Certified rack (RAL 7035 in Pastal fine texture OR RAL 9005 in Black fine texture) with Sheet steel riveted metal frame, Top and bottom cover with brush cable entries, confirming to following standards - IEC 60529 EN 60529 (IP20), IEC 62262 EN 62262 (IK08), DIN 41494, EIA 310, IEC 60297, Rack including accessories like Horizontal PDU, Metal Cable manager, Hardware packet and Cantilever Shelf should be from same OEM 15U (600*500mmD) with Std Acc(	20.000	Nos.
393	SITC of RJ-45 Connectors / Modular Plugs Pack of 100	304.000	Nos.

394	Supply, Installation, testing and commissioning of Cat6A Tool less Information outlet for Data & Voice. Cat6 U/UTP RJ45 socket with built in crimping mechanism with capability of retermination without refreshing the wires. Toolless RJ45 Information outlet with insertion cycle (in & out) upto 2500 times (I/O) along with front side Label holder and transparent shutter. The Information Outlet connector shall be of gold/nickel, thickness of gold > 0.8 µm. The connectors shall be compatible as per IEEE 802.3bt standard for POE++ application	1676.000	Nos
395	Supply of Floor Stand UL certified rack with Multi hollow extrusion Aluminium profile frame, Top and bottom cover with provision of either brush cable entry or cable entry holes with rubber grommets, Front single door with Glass/ Mesh and rear double door with mesh, Static load bearing capacity of Upto 1200KG., confirming to following standards - IEC EN 60529, IEC EN 62262, ISO 9001:2008, ISO 14001: 2015, ISO 45001: 2018, Salt spray test according to ISO 9227 (NSS test) for 250 Hours, Colour - Black of RAL 9005 with fine texture 42U (600*800mmD) with Std Acc	3.000	Nos
396	Supply of Floor Stand UL certified rack with Multi hollow extrusion Aluminium profile frame, Top and bottom cover with provision of either brush cable entry or cable entry holes with rubber grommets, Front single door with Glass/ Mesh and rear double door with mesh, Static load bearing capacity of Upto 1200KG., confirming to following standards - IEC EN 60529, IEC EN 62262, ISO 9001:2008, ISO 14001: 2015, ISO 45001: 2018, Salt spray test according to ISO 9227 (NSS test) for 250 Hours, Colour - Black of RAL 9005 with fine texture 32U (600*800mmD) with Std Acc	1.000	Nos
397	Metal 19" pre-equipped fibre optic drawers, 4 cable entries, supplied with screw fixing kit, 2 cable glands (Ø 13.5 and 16 mm), coiling system and splicing cassette.Panel and optical ports marked on dedicated marking area.Sliding: end stop at a 30° angle for easier wiring.	9.000	Nos
398	Supplying & Fixing of Fiber Optic LC style fully loaded Patch Panel (FOPP), 19" Rack Mount ,Shall have all accessories including coupler plates pre loaded with 12 Nos of LC couplers SM with all accessories complete in all respect. Pigtails Should Complie to ITU-G657.B-Bend insestive fiber.	6.000	Nos
399	Supplying & Fixing of Fiber Optic LC style fully loaded Patch Panel (FOPP), 19" Rack Mount ,Shall have all accessories including coupler plates pre loaded with 48 Nos of LC couplers SM with all accessories complete in all respect. Pigtails Should Complie to ITU-G657.B-Bend insestive fiber..	2.000	Nos

400	Supplying & Fixing of SM Fiber Optic Patch Cable (LC-LC), 3 Mtrs. Long, , LSZH,Shall have LC-LC Connector connectors at the ends, Conform to IEC, EIA-TIA, and Telecordia performances requirements,RoHS, REACH & SvHC compliant complete in all respect..	24.000	Nos
401	Supply, Installation, testing and commissioning of Single Mode OS1/OS2 SC-SC Duplex Fiber Patch Cord LC-LC - 3 mtrs. Conform to IEC 61754-4,61300-3-4,61300-3-34,61300-3-6,61300-2-1/2/4/5 EIA-TIA, G.657.A2 and Telecordia performances requirements	18.000	Nos
402	Supply, laying and fixing of 6 core OS1/OS2 - loose tube outdoor/corrugated steel tape with Unitube construction Crush Resistance 2000N with 8.5 mm Diameter and confirming to IEC/EN 60793-2-50 class B1.3 ITU G.652.D EN 50 173-1:2007 ISO/IEC 11801:2002 ISO/IEC 24702:2006- through existing GI/HDPE/ Hume pipe or on cable trays inside the cable duct including all necessary fixing accessories e.g. cable ties, hardware etc.	2700.000	Mtr
403	**FIRE ALARM SYSTEM & PA SYSTEM, TALK BACK (ADDRESSABLE TYPE)**		
404	**Fire Panel & Annunciators** **"Supply,Installation,Testing & Commissioning of Multi loop Analog Addressable fire Panel with Voice Evacuation system. Each loop shall have a capacity of minimum 250 addressable devices excluding 20% spare.** **Integrated Digital Voice Evacuation System capable of supervising all the speaker circuits & should employ Hindi, English and vernacular language for automatic voice evacuation Expandable up to 16loops with supporting CPU/CPUs & power supply installed in Panel The panel shall be field programmable using inbuilt keypad Inbuilt Port to connect mimic & repeater panel Peer to peer Networkable and support distributed loop architecture Automatic battery charger for 24V SMF batteries sufficient for 24 hours normal working and 30 mins for Alarm On board supervised microphone with zone selection for Manual announcement The unit should be UL listed and FM approved complete as per specifications."**		
404.01	4 -loop - With Digital Voice Command Center (Expaandable to 16 Loop)	1.000	Nos
404.02	Intelligent field mountable 100W amplifier with onboard power supply and Battery backup & support 8 speaker zones.The unit should be UL listed and FM approved complete as per specifications.	8.000	Nos
405	Supply,Installation,Testing & Commissioning of customizable 500X500mm Mimic panel with min 20 LEDs projected on floor/area for easy identification of the	1.000	Nos.

	sector/zone in fire condition & Installed at control center as per IS standards		
406	Supply, installation and testing & commissioning of Active Repeater Panel with backlit Liquid Crystal Display & Reset, Silence & Acknowledge function. The unit should be UL listed and FM approved complete as per specifications.	2.000	Nos.
407	Supply,Installation,Testing & Commissioning of Addressable Muliti-sensor Detector (smoke & heat) with following features Smoke Sensitivity min 1.5% obs/ft for detecting Grey smoke. Dual Thermistors for Thermal activation at 57 Deg C Field adjustable min 3 levels of Alarm Setting Addressing using basic hand tools Bicolor LED with 360 deg view. The unit should be UL listed and FM approved complete as per specifications. Above False Ceiling.	255.000	Nos.
408	Supply,Installation,Testing & Commissioning of Addressable Smoke Detector with following features Smoke Sensitivity min 1.5% obs/ft for detecting Grey smoke. Field adjustable min 3 level of Alarm Setting Addressing using basic hand tools Bicolor LED with 360 deg view The unit should be UL listed and FM approved complete as per specifications. Below False Ceiling.	292.000	Nos.
409	Supply,Installation,Testing & Commissioning of Addressable Rate of Rise Heat Detector with following features Rate of rise detection 8.3 Deg C Thermal activation at 57 Deg C Addressing using basic hand tools Bicolor LED with 360 deg view.The unit should be UL listed and FM approved complete as per specifications.	13.000	Nos.
410	Supply,Installation,Testing & Commissioning of Addressable Manual Call point with following features Bicolor LED monitor the heath status of the device LED Blinking in normal state & get steady on activation Test Key for manual testing Addressing using basic hand tools The unit should be UL listed and FM approved complete as per specifications.	22.000	Nos.
411	Supply,Installation,Testing & Commissioning of Addressable Control Module for Notification devices with following features Supervised NAC output rated at 24v DC, 2A LED Blinking in normal state & get steady on activation Supervised power input port Addressing using basic hand tools The unit should be UL listed and FM approved complete as per specifications.	40.000	Nos.
412	Supply,Installation,Testing & Commissioning of Addressable Output Module for 3rd Party integration with following features Dual Pot. free contact rated 24v DC, 2A LED Blinking in normal state & get steady on activation Addressing using basic hand tools The unit should be UL listed and FM approved complete as per specifications.	11.000	Nos.

413	Supply,Installation,Testing & Commissioning of Addressable Input Module for 3rd Party integration with following features Monitor pot. free contacts LED Blinking in normal state & get steady on activation Addressing using basic hand tools The unit should be UL listed and FM approved complete as per specifications.	10.000	Nos.
414	Supply,Installation,Testing & Commissioning of Isolator Module with following features Isolate short circuits with automatic resetting arrangement LED Blinking in normal state & get steady on activation Addressing using basic hand tools The unit should be UL listed and FM approved complete as per specifications.	30.000	Nos.
415	Supply,Installation,Testing & Commissioning of Hooter cum Strobe with following features Sound level 80 dBA @ 3m for Audible annunciation Visual - 115cd flashing at 1 Hz Wall/Ceiling Mountable The unit should be UL listed complete as per specifications	22.000	Nos.
416	Supply,Installation,Testing & Commissioning of 2W Multi-Tap (0.25W; 0.5W; 1W; 2W), Ceiling Mount Speakers. The speakers shall be of same make as that of the Control Panel & Amplifiers. They shall be compatible with supplied Amplifiers and shall work on 70.7Vrms. UL Listed	310.000	Nos.
417	Supply,Installation,Testing & Commissioning of 2W Multi-Tap (0.25W; 0.5W; 1W; 2W), Wall Mount Speakers. The speakers shall be of same make as that of the Control Panel & Amplifiers. They shall be compatible with supplied Amplifiers and shall work on 70.7Vrms. UL Listed	10.000	Nos.
418	**Telephone Talkback**		
418.01	Supply,Installation,Testing & Commissioning of Fire Fighter's Telephone Communication System Capable of supervising upto 72 telephone circuit support Min 10 concurrent communitation on the network The unit should be UL listed and FM approved complete as per specifications.	1.000	Set
418.2	Supply,Installation,Testing & Commissioning of Addressable Fire Fighter's Telephone Jack with suitable supervised module for two way communication between Remote Fire Fighter & Fire Command Center. UL Listed	15.000	Nos
418.3	Supply,Installation,Testing & Commissioning of Fire Fighter's Telephone Handset for two way communication between Remote Fire Fighter & Fire Command Center	1.000	Nos
418.4	Supplying & laying of 2x1 .5 sqmm fire survival armoured cable, 600/1 OOOV rated with annealed copper conductor having glass mica fire barrier tape covered by an extruded layer of Cross Linkable Ethylene Propylene Rubber (EPR) insulation and LSZH inner bedding, steel wire armouring & LSZH outer sheath complete as required.	3700.000	Rmt

418.5	Supply and drawing of 2 C X 1.5 Sq mm multi stranded twisted shielded FRLS Copper cable. (For Speakers)	2100.000	Rmt
418.6	**Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.**		
418.7	32 mm dia.	400.000	Rmt
418.8	25 mm dia.	600.000	Rmt
418.9	20 mm dia.	100.000	Rmt
418.10	Supplying, installing, testing and commissioning approved make 20 mm dia. PVC flexible conduits on ceiling / wall / floor etc. complete with accessories like, Junction boxes, Collars, Bends etc.	250.000	Rmt
419	**ACCESS CONTROL SOLUTION**		
420	**Readers -** Supply, installation, testing & commissioning of 13.56MHz, ISO 14443A/B Smart Card readers, Read Range 3" with weigand data format, UL, CE, FCC listed, Operating Temp 0 to 60 Deg C as per specification suitable for mounting on metal surface/metal frames or wooden frames wall or as required based on site conditions.	30.000	Nos
421	**Cards -** Supply and commisioning of 13.5MHz, ISO 14443A Smart cards, 1KB (Kilo byte) memory, ISO Thickness, Smart Cards with the possibility of printing the company details on its facia using sublimation method.	500.000	Nos
422	**Access Control - Accessories - Supply, installation, testing and commissioning of Feed back type electromagnetic Lock (fail safe type) of 5000 Newtons holding force , with door ajar alarm buzzer connectivity for the following type doors :**		
422.1	Single Leaf door	16.000	Nos
422.2	Double Leaf door	16.000	Nos
423	12V/5V Door Ajar Buzzer with timer circuit suitable to be connected to above EM locks	30.000	Nos
424	Supply installation, testing, commissioning of Green ABS plastic Resetable type Emergency Break Glass Units. - ISI marked	30.000	Nos

425	**Access Controller -** Supply Installation of 2 reader intelligent controller with onbaord LAN/Web server, 8 supervised Inputs and 4 form C relay outputs, with 32-bit CPU, 32 MB Flash memory, 16 MB SDRAM memory, Real-time clock, supports 8 card formats and 8 facility codes, 10,000 card holder and 20,000 offline event buffer, CE, FCC Listed, Along with cabinet and power support and 3 hrs battery backup.	30.000	Nos
426	**Softwares** - Supply installtion testing commissioining of Access Control Software Supporting minimum 512 online readers, 100,000 card holders, 01 concurrent Clients/User expandable to 05, LDAP based and Application logon users, MS SQL Based, inbuild Guard Tour module, various Reports with time stampping nearest to seconds, unlimited Timezones, various card attributes VIP, Normal, integration with Fire Alarm System to free open/Lock designated door in case fire.	1.000	No
427	Supply installation testing & commissioning of web based Time & Attendance various T&A reports such as Attendance details with IN-Out time and total Manhours, overtime, Leave Management, out duty, online leave application and approval as a min.	1.000	No
428	**CABLING** Supply installation testing & commissioning of PVC insulated and PVC sheathed 8 core 0.5 sq.mm. twisted pair standard cable with PVC/steel conduit as required as per specification a	1800.000	Rmt
429	Supply installation testing & commissioning installation of PVC insulated and PVC sheathed 4 core 1.5 sq.mm. copper condcutor cable with PVC/steel conduit as required as per specification	1800.000	Rmt
430	Supply installation testing & commissioning, of CAT 6 cable with PVC/steel conduit as required as per specification	5456.000	Rmt
431	**UPS SYSTEM :**		
431.1	**Design, manufacturing, assembly, testing at works, supply, receiving at site, erection, testing and commissioning of true-online double conversion VFI Technology UPS, 3Ph. AC input & 3Ph AC output UPS system suitable for 415VAC, 50Hz supply, variation +/- 1% , PF 0.8 as required as per specification and consisting of following:** **Input range should be 312V AC-467V AC at full lod and 208V -467 V at Half Load, in case the voltage range does not meet the specified range, cost of servo stabilizer should be added.**		

	IGBT Rectifier Modules to achieve less than 5% Input Current distortion and greater than 0.98 PF at Input at all loads and THDv<2% at Output **Fully microprocessor based with diagnostics capability.** **Dual Input (Separate Input for rectifier and separate input for Bypass)** **Required quantity and details of UPS are as mentioned below. Location details and mode of operation of UPS shall be as per SLD.** **Design, manufacturing, testing at works, supply, erection, testing and commissioning of One sets of SMF VRLA battery with each UPS capacity as mentioned below, having back up time as mentioned below at full load, with interconnecting cables, cabinets and standard accessories as per specification and as required for the UPS system. (12V Cells)** **Battery shall be external type with rack and suitable for 15 minute backup with minimum VAH of 30240 on 100% load. Battery to be included in UPS cost** **UPS shall be compatible for Parallel operation and kit shall be supplied with UPS.** **Please refer technical specfication for more details**		
431.2	**100 KVA UPS.**	**2.000**	**Set**
431.3	**15 KVA UPS.**	1.000	Set
432	**EMERGENCY SIGNAGES :**		
434	Providing and Fixing of Green LED emergency exit signage single Sided sign type fixed on wall above the door. 2W LED Emergency Backup of minimum 2 hours	50.000	Nos
435	Providing and Fixing of Green LED emergency exit signage double Sided Ceiling hung sign type made of powder coated MS housing and acrylic sheet indicator with light source 2W LED Emergency Backup of minimum 2 hours.	30.000	Nos
436	Providing, fixing and commissioning of single sided photoluminescent signs. Primary and secondary route to be marked. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing	15.000	Nos

437	1) Providing, fixing and commissioning of single sided non Illuminated signs as per design submitted. Sign made in photoluminescent sheet. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing	15.000	Nos
438	1) Providing, fixing and commissioning of single sided non Illuminated signs as per design submitted. Sign made in photoluminescent sheet. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing (Ground floor)	15.000	Nos
439	1) Providing, fixing and commissioning of single sided non Illuminated signs as per design submitted. Sign made in photoluminescent sheet. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing (Second floor)	15.000	Nos
440	1) Providing, fixing and commissioning of single sided non Illuminated signs as per design submitted. Sign made in photoluminescent sheet. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-	15.000	Nos

	radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing (Third floor)		
441	1) Providing, fixing and commissioning of single sided non Illuminated signs as per design submitted. Sign made in photoluminescent sheet.	60.000	Nos
442	Exit signage to be added at each staircase , signage to be made in photoluminescent sheet. Rigid Photo luminescent based Glow-in-the-dark rigid sheet with high intensity luminous properties enclosed in a transparent weather-proof UV stabilized coated sheet with UV screen printing by imported links, Thickness : 1 mm, Service Temp. : -10 to + 60°C, Application : Suitable for INDOOR use only, Surface Colour : Greenish Yellow, Visibility : Glow visible up to> 24 hours in total darkness, Properties : *Fungistatic *Non-radioactive *Contains no lead or Phosphorus * No health or environmental problem *Simple to install & easy to maintain, can be screwed or just peel off to stick *Self-Extinguishing	15.000	Nos
443	**POLES**		
444	**Supplying, Installation , testing and commissioning of outdoor lighting with fabricated pole made of MS pipe (medium class) complete with base plate, luminaire bracket arm bed concrete foundation in 1:3: 6 ratio (1cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) including excavation and refiling , painting of Poles with one coat of primer and two coats of approved synthetics enamel paint etc. as required as approved by architect and complete in all respect.** **6 mtr.high steel tubular decorative pole with 450 x 450 x 10 mm thick base plate. Outside dia and thickness of sections of the pole shall be at bottom 114.3mm x 5.4mm , middle 88.9mm x 4.85mm & top 76.1mm x 3.25mm.**		
445	Double arm decorative Pole (Apprx. Weight 85kg) as above in sr no.444	19.000	Nos
446	4.0 meter, Mild steel decorative Pole for post top lantern (ISI marked) with 76.1mm O/D and 3.65 mm thickness and with 300 x 300 x6 mm thick base plate. as above in sr no.444	33.000	Nos

447	**Supplying and embedding following dia G.I.pipe (meduim class) inpole collar / foundation (during casting) for cable entry including bending the pipe to the required shape complete as required.**		
447.1	32 mm dia (for Cable entry to pole box.)	100.000	Metre
447.2	40 mm dia (for Gate light)	25.000	Metre
448	**POLES MOUNTING BOXES :** Supply and fixing of Thermoplastic type water proof pole mounting boxes of size 205 x 255 mm x 112 mm , with cover and Gasket with cablel entry knock outs, 4 way 20A connectors mounted inside box etc.as per design including mounting arrangements. (Box depth 112mm)	30.000	Nos
449	**LIGHTINING ARRESTORS**		
450	Parallel Connectors for (700mm air terminal) connecting two conductors in parallel manner. Material- StSt, with clamping range- Rd / Rd 7-10 mm & Complied as per Standard EN 62561-1.	17.000	nos.
451	Air-termination rod having length- 3000 mm, of Material- AlMgSi, of Diameter Ø 16 mm, & Complied as per Standard EN 62561-2.	15.000	nos.
452	Side Wall Clamp for air terminal,	45.000	nos.
453	Air-termination rod clamps for connecting air-termination rods with one or two conductors. Material of clamp Al, with clamping range of air-termination rod 16 mm and Clamping range of conductor Rd 2x 8-10 mm, & Complied as per Standard EN 62561-1.	15.000	nos.
454	Universal connector of Material- StSt, with clamping range- 8-10mm, with truss head screw M10x35 mm & Complied as per Standard EN 62561-1.,	110.000	nos.
455	Roof Conductor of Diameter Ø- 8 mm, Cross-section- 50 mm2, of Material- AlMgSi & Complied as per Standard EN 62561-2.,	860.000	meter
456	Conductor holder for Parapet wall/Side wall. Having height- 16 mm, Thread of conductor holder- M8, Material of conductor holder- SS, Conductor leading- loose, Conductor holder support Rd- 8 mm. With accessories Screw and Gitty, Material SS (M5 x 50mm)	800.000	nos.
457	Roof conductor holder FB2 for flat roofs with concrete block-C35/45 with double conductor holder- Rd 8 mm fixed, Dimension- 141 x 86 x 70 mm	50.000	nos.

458	**Down conductor** Down Conductor of Diameter Ø- 8 mm, Cross-section- 50 mm2, of Material- AlMgSi & Complied as per Standard EN 62561-2.,	500.000	meter
459	Conductor holder for Parapet wall/Side wall. Having height- 16 mm, Thread of conductor holder- M8, Material of conductor holder- SS, Conductor leading- loose, Conductor holder support Rd- 8 mm With accessories Screw and Gitty, Material SS (M5 x 50mm)	500.000	nos.
460	UNI Disconnecting Clamps with intermediate plate for round and flat conductor of Material- StSt, Material thickness- 2.5 mm, with clamping range- Rd / Fl 8-10 / 30 mm, & Complied as per Standard EN 62561-1.,	20.000	nos.
461	**For Earthing** GI flat (25x6mm) for interconnection of earth pit & termination to earth pit Weight 1.2 kg/m (approx.) Cross Section 150 mm2 ,Coating thickness Avg. 70 microns. As per IEC 62561-2 ,Material Hot dipped Galvanized Iron	100.000	Rmt.
462	GI strip holder of material- Dow moulded compound, having height- 19mm, Slot Size- 25x6 mm.	40.000	nos.
463	Copper bonded rod with Low carbon steel, high tensile strength copper bonded rod with min 254 microns of copper plating, UL listed with company name marked on rod. Diameter- 17.2 mm, Length- 3 meters, Material- Copper Bonded, Coating thickness- 250 microns, min, Approvals- Tested acc. IEC / EN 62561-2, UL 467.,	20.000	nos.
464	20 kg backfilled compound, - Material Carbon based backfill/earthing compound, Fulgurite formation test at direct lightning (10/350 µm), lightning long duration test at- 100C No fulgurites/Pass, Environmentally Friendly ROHS certified, Resistivity- < 0.12 ΩM, Complying Standard- IEC 62561-7 , Testing Approvals Certified from- NABL accredited Laboratories.	20.000	nos.
465	Steel 316 grade clamp to terminate the load on earth electrode. Dimension- 160x35x3 mm.,	20.000	nos.
466	Poly plastic pit cover of material- Polymer Body & Cover, Product Code- HEP, Dimensions- 308 mm (L) x 308 mm (W) X 214 mm (H), Weight 2.5 kg (5.50 LBS).,	20.000	nos.
467	GI flat (25x6mm) for interconnection of earth pit & termination to earth pit Weight 1.2 kg/m (approx.) Cross Section 150 mm2 ,Coating thickness Avg. 70 microns. As per IEC 62561-2 ,Material Hot dipped Galvanized Iron	250.000	Rmt.
468	Providing of Plastic Corrosion Protection strip: Approx 1.1 mm thick. Width 50mm. Made of petrolatum- coated chemical fibre fabric.	8.000	Nos

469	Supply & fixing of 5Kg clean Agent Ceiling suspended Auto Fire extinguisher (UL Listed HFC-236fa agent)	30.000	Nos
470	**BUILDING AUTOMATION SYSTEM:**		
471	BMS Computer System: server grade Pentium Core with 3GHz minimum CPU speed, minimum of 8 GB RAM, 520GB HDD, optical Mouse, 106 keys keyboard, 10/100 Mbps Ethernet card ,USB connection & internal modem, 21" colour graphics TFT monitor & Original Windows 11 loaded.	1.000	Set
472	BMS System Software : Web Based Graphical Software meeting the requirements in the Given I/O Summary & technical specifications including configuration and facility to create / provide the graphic mapping for all I/O Summary points, animate the Graphics, Navigation between pages, display of logs, changing the time zones, popup alarms, configurable password protection for Building Mgmt System as per Specifications. Software shall be able to communicate with Lon works, Bacnet, Modbus devices simultaneously, with unlimited user license capacity.	1.000	Set
473	Hardware Interface for Modbus RTU Unit, Open Protocol Software Integration for following :-Chiller System Interface on BACnet/Modbus MSTP - 3 Nos. (20 I/O's per Chiller) Secondary Pumping System on Modbus RTU - 3 Nos.(20 points / Pump) VFD on Modbus RTU - 2 Nos.(12 points / VFD) UPS on Modbus RS485 - 3 No.(30 points/unit) FAS Panel on Bacnet / Modbus - 600 points	1.000	Lot
474	**DDC Controller**		
475	DDC Controller with I/O module, expandable upto 192 points, to meet the IO summary listed, The controllers shall be minimum 32 bit single microprocessor based standalone working on TCP/IP on LAN with integral web browser, calender fundtion complete with day, month, week, year etc, real time clock & 1 second scan time. DDC working on 230V AC are preferred. The DDC's shall be capable of peer to peer communication without help of communication controller / router / system interface controller / PC. with locable mounting cabinets duly powder coated connector strip, internal wiring and space to house controller & relays, connector strip step down transformer, MCB, internal wiring. (Contractor shall confirm his I/O provision w.r.t requirement on basis of data point) on AHRAE approved Bacnet protocol only		
475.1	DDC Panel for Chiller Plant Room AS ABOVE	1.000	No
475.2	DDC Panel for Other Equipment at terrace and metering AS ABOVE	1.000	No

475.3	DDC Panel for AHUs AS ABOVE	1.000	Lot
475.4	DDC Panel for Ventilation Fans AS ABOVE	1.000	Lot
476	**Field Devices** **Supply, installation, testing, commissioning of necessary Input sensor transmitters/transducers comprising the following:**		
476.01	Immersion Temp Sensor for CHW line with brass thermowell. Measuring range: -30 to 110 Deg C, Accuracy: +/- 1.3 Deg C	7.000	Nos.
476.2	Outside Temp & Humidity Sensor with radiation shield. Measuring Range: Temp:-30 to 50 Deg C & RH 0-100%, Accuracy: +/- 1 Degc +/- 3%	1.000	Nos.
476.3	Flow meter (Flow range to be provided)	1.000	Nos.
476.4	Differential pressure switch Water Trigger Range:150-1000mbar with 1A (resistive) @ 240V AC contact rating	11.000	Nos.
476.5	Duct type temperature & RH sensor. Meauring range: 0 -40 DegC & 0-100% RH, Accuracy: +/-0.5 DegC & 3%	3.000	Nos.
476.6	Air Quality sensor to measure VOC contamination in air with 0-10 VDC output.	3.000	Nos.
476.7	CO2 sensor Duct mount type Measuring range: 0 to 2000 ppm	3.000	Nos.
476.8	Differential pressure switch for filters (0-400Pa range)	35.000	Nos.
476.9	Water DP Sensor	3.000	Nos.
476.10	Level Switches (Hi/Low)	3.000	Nos.
476.11	Water Flow Switch with operating range of 15Kg/sq.cm	3.000	Nos.
477	**Conduiting , Wiring and cabling** **Supply, installation, testing and commissioning of following cables:**		
477.1	2 Core 1.0 Sqmm, unarmoured ATC conductor multistranded, Unshielded cable.	4500.000	RMT
477.2	2 Core 1.5 Sqmm, unarmoured ATC conductor multistranded, shielded cable.	500.000	RMT
477.3	3 Core 1.5 Sqmm, unarmoured ATC conductor multistranded, cable for Powering DDC , Actuators.	100.000	RMT
477.4	Cat-6 networking cable	100.000	RMT

477.5	**Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.**		
477.51	20mm dia AS ABOVE	900.000	RMT
477.52	25mm dia AS ABOVE	1300.000	RMT
478	**STP (CIVIL)**		
478.1	**EARTH WORK**		
479	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 lift upto 1.5 m, as directed by Engineer-in-charge. **All kinds of soil.**	111.000	CUM
480	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.	72.000	CUM
481	**CONCRETE WORK**		
482	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shttering - All work up to plinth level 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	6.000	CUM
483	**REINFORCED CEMENT CONCRETE**		
484	**Centering & shuttering including strutting, propping etc. and removal of form work for:**		
484.1	Foundations, footings, bases of columns etc. for mass concrete.	24.000	SQM
484.2	Suspended floors, roofs, landings, balconies and access platform.	85.000	SQM
484.3	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	185.000	SQM
484.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers	42.000	SQM

485	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. **Thermo-Mechanically Treated bars. FE 500 D**	8122.000	KGS
486	**Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.** **Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discre**		
486.1	All works upto plinth level Concrete of M25 grade with minimum cement content of 330 kg /cum	51.000	CUM
486.2	All works above plinth level upto floor V level "Concrete of M25 grade with minimum cement content of 330 kg /cum"	3.000	CUM
487	**BRICK WORK**		
488	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)**	12.000	CUM
489	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : **Cement mortar 1:6 (1 cement : 6 coarse sand)**	23.000	CUM
490	**STEEL WORK**		
491	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc.as required. **In gratings, frames, guard bar, ladders, railings, brackets, gates & similar works.**	140.000	KGS

492	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**	2.000	SQM
493	**FLOORING**		
494	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 nomina size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	12.000	SQM
495	**FINISHING**		
496	12 mm cement plaster finished with a floating coat of neat cement - **1:4 (1 cement: 4 fine sand)**	135.000	SQM
497	6 mm cement plaster of mix : - **1:3 (1 cement : 3 fine sand)**	155.000	SQM
498	Neat cement punning.	155.000	SQM
499	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers	11.000	PER BAG OF 50 KG CEMENT USED IN MIX
500	15 mm cement plaster on the rough side of single or half brick wall of mix : - **1:4 (1 cement: 4 fine sand)**	135.000	SQM
501	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : - **New work (two or more coats) over and including water thinnable priming coat with cement primer**	62.000	SQM
502	Finishing walls with Acrylic Smooth exterior paint of required shade : **- 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)**	118.000	SQM
503	**MISCELLANEOUS WORK**		

504	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS : 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	100.000	Each
505	Supplying and fixing C.I. cover without frame for manholes : **455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg**	4.000	Each
506	Providing and fixing soil, waste and vent pipes : **Centrifugally cast (spun) iron S&S pipe as per IS:3989** **100 mm dia.**	3.000	Metre
507	**LIFTS**		
507.1	**Lift -22 Persons** **Capacity (Kgs) : 22 Persons (1496 kg)** **SPEED (MPS : 1.75 Mps** **RISE (M) : 25 M** **Stops : 6 Stops with (all opening on the same side)** **Controller type : ACD3 - MRL** **DRIVE : VF Regenerative (Closed Loop)** **Power Supply : 415 Volts, + 5%, 3 phase , 50 Cycles** **Operation : Full collective operation** **Car Group : One Car (simplex)** **Machine : PM Gearless (Located in staft on to of guide rails)** **Traction Media : Flat Coated /Grooved steel Belt**		

507.2	CAR FINISH * Rear Side panels = Powder Coated Paint Finish * Side mid panels = Powder Coated Paint Finish * Side Corner Panels = Powder Coated Paint Finish * Front Panels = Powder Coated Paint Finish False Ceiling Type : CD - 41 False Ceiling Finish : Powder Coated Paint Finish Ventillation : Cross Flow fan Hand Rails : Powder Coated Paint Finish Handrails on rear Car Panels Flooring : Vinyl Tiles Car door finish : Powder Coated Paint Finish Landing Door Finish : Powder Coated Paint Finish PIT Depth : 1450 Overhead : 4400		
507.3	Hoistway Dimensions Required (W x D - mm) : 2580 mm W x 2400 mm D Car Dimensions (W x D x H - 1750x2000x 2300 mm) : / asper drawing CAR & Hoistway Door : Telescopic 2 Speed Door Door Opening (W x H - mm) : 1200 mm W x 2000 mm H Door Operator ; DC Door Operator COP : Buttons in Stainless steel # 4 (Hairline) CAR Position Indicator : Dot matrix (LED) Scrolling Display Hall Fixtures : PAN Type Fixture Hall Fixture Face Plate : Stainless Steel # 4 (Hairline) Standard Fiatures : Anti-nuisance Car Call Protection, Independent Service (for Duplex only), Overload Device, Nudging, Emergency Firemen's Service, Emergency Car Light Unit, Infrared Curtain Door Protection, Door Time Protection, Emergency Alarm Button, Extra Door Time of Lobby & Parking, Door Open/Close Button, Manual Rescue Operation, Belt Inspection Drive, Auto Fan Cut Off Option Included : * Automatic Rescue Operation	1.000	SET

507.4	**Lift -19/20 Persons** **Capacity (Kgs) : 19 /20 Persons (1292 kg)** **SPEED (MPS : 1.75 Mps** **RISE (M) : 25 M** **Stops : 6 Stops with (all opening on the same side)** **Controller type : ACD3 - MRL** **DRIVE : VF Regenerative (Closed Loop)** **Power Supply : 415 Volts, + 5%, 3 phase , 50 Cycles** **Operation : Full collective operation** **Car Group : One Car (simplex)** **Machine : PM Gearless (Located in staft on to of guide rails)** **Traction Media : Flat Coated /Grooved steel Belt**		
507.5	CAR FINISH * Rear Side panels = Powder Coated Paint Finish * Side mid panels = Powder Coated Paint Finish * Side Corner Panels = Powder Coated Paint Finish * Front Panels = Powder Coated Paint Finish False Ceiling Type : CD - 41 False Ceiling Finish : Powder Coated Paint Finish Ventillation : Cross Flow fan Hand Rails : Powder Coated Paint Finish Handrails on rear Car Panels Flooring : Vinyl Tiles Car door finish : Powder Coated Paint Finish Landing Door Finish : Powder Coated Paint Finish PIT Depth : 1450 Overhead : 4400		

507.6	Hoistway Dimensions Required (W x D - mm) : 2330 mm W x 2400 mm D Car Dimensions (W x D x H - 1450x2000x 2300 mm) : / asper drawing CAR & Hoistway Door : Telescopic 2 Speed Door Door Opening (W x H - mm) : 1200 mm W x 2000 mm H Door Operator ; DC Door Operator COP : Buttons in Stainless steel # 4 (Hairline) CAR Position Indicator : Dot matrix (LED) Scrolling Display Hall Fixtures : PAN Type Fixture Hall Fixture Face Plate : Stainless Steel # 4 (Hairline) Standard Fiatures : Anti-nuisance Car Call Protection, Independent Service (for Duplex only), Overload Device, Nudging, Emergency Firemen's Service, Emergency Car Light Unit, Infrared Curtain Door Protection, Door Time Protection, Emergency Alarm Button, Extra Door Time of Lobby & Parking, Door Open/Close Button, Manual Rescue Operation, Belt Inspection Drive, Auto Fan Cut Off Option Included : * Automatic Rescue Operation	2.000	SET
507.7	**GOODS Lift -** **Capacity (Kgs) : 2440 kg and above** **SPEED (MPS : 0.40 Mps** **RISE (M) : 25 M** **Stops : 6 Stops with (all opening on the same side)** **Controller type : ACD3 - MRL** **DRIVE : VF Regenerative (Closed Loop)** **Power Supply : 415 Volts, + 5%, 3 phase , 50 Cycles** **Operation : Full collective operation** **Car Group : One Car (simplex)** **Machine : PM Gearless (Located in staft on to of guide rails)** **Traction Media : Flat Coated steel /Grooved Belt**		

507.8	CAR FINISH * Rear Side panels = Powder Coated Paint Finish * Side mid panels = Powder Coated Paint Finish * Side Corner Panels = Powder Coated Paint Finish * Front Panels = Powder Coated Paint Finish False Ceiling Type : CD - 41 False Ceiling Finish : Powder Coated Paint Finish Ventillation : Cross Flow fan Hand Rails : Powder Coated Paint Finish Handrails on rear Car Panels Flooring : Vinyl Tiles Car door finish : Powder Coated Paint Finish Landing Door Finish : Powder Coated Paint Finish PIT Depth : 1600		
507.9	Overhead : 4800 Hoistway Dimensions Required (W x D - mm) : 2900 mm W x 3050 mm D Car Dimensions (W x D - 2000x2500 mm) : / asper drawing CAR & Hoistway Door : Telescopic 2 Speed Door Door Opening (W x H - mm) : 1200 mm W x 2000 mm H Door Operator ; DC Door Operator COP : Buttons in Stainless steel # 4 (Hairline) CAR Position Indicator : Dot matrix (LED) Scrolling Display Hall Fixtures : PAN Type Fixture Hall Fixture Face Plate : Stainless Steel # 4 (Hairline) Standard Fiatures : Anti-nuisance Car Call Protection, Independent Service (for Duplex only), Overload Device, Nudging, Emergency Firemen's Service, Emergency Car Light Unit, Infrared Curtain Door Protection, Door Time Protection, Emergency Alarm Button, Extra Door Time of Lobby & Parking, Door Open/Close Button, Manual Rescue Operation, Belt Inspection Drive, Auto Fan Cut Off Option Included : * Automatic Rescue Operation	1.000	SET
508	**HORTICULTURE AND PLANTATION**		
509	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 lift upto 1.5 m, as directed by Engineer-in-charge. **All kinds of soil**	253.000	CUM

510	**Excavation work by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m 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 soils as directed, within a lead of 50 m.**		
510.1	Ordinary rock	202.000	CUM
510.2	Hard rock (blasting prohibited)	51.000	CUM
511	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.	506.000	CUM
512	Supplying and stacking of good earth at site including royalty and carriage up to 5 km (earth measured in stacks will be reduced by 20% for payment).	180.000	CUM
513	Supplying and stacking sludge at site including royalty and carriage up to 5 km (sludge measured in stacks will be reduced by 8% for payment).	90.000	CUM
514	**Supplying and stacking at site dump manure from approved source, including carriage up to 1 km (manure measured in stacks will be reduced by 8% for payment) :**		
514.1	Screened through sieve of I.S. designation 16 mm	90.000	CUM
514.2	Fine dressing of the ground.	1200.000	SQM
515	Spreading of sludge, dump manure and / or good earth in required thickness as per direction of Officer-in-charge (Cost of sludge, dump manure and / or good earth to be paid separately).	360.000	CUM
516	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge..	360.000	CUM
517	Grassing with selection No.1 grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn, free from weeds and fit for mowing including supplying good earth, if needed (the good earth shall be paid for separately). **- In rows 5 cm apart in both directionS**	1200.000	SQM
518	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any, with all leads and lifts (cost of manure, sludge or	2100.000	Each

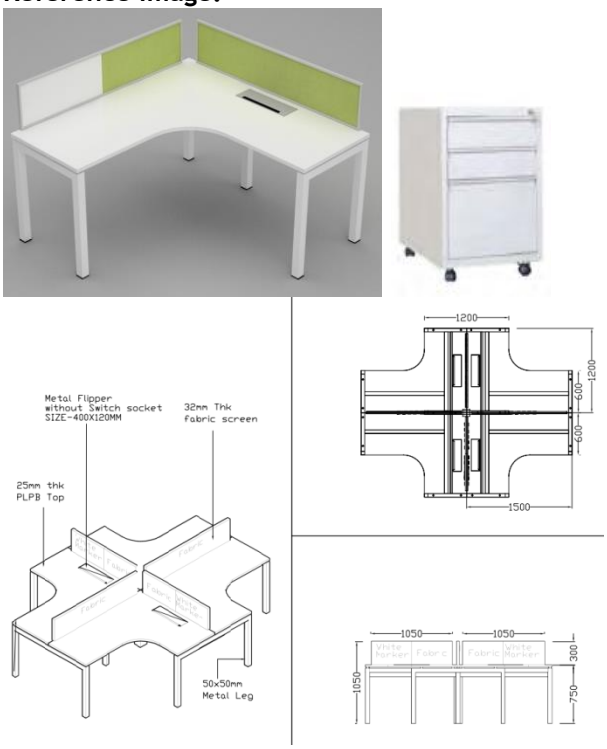
	extra good earth if needed to be paid for separately) : **- Holes 90 cm dia, and 90 cm deep**		
519	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately).	108.000	CUM
520	Complete maintaince of the entire garden features in the garden area i.e. lawn trees, shurbs, hedges, flower beds, creepers etc. including hoeing, pruning replacements of plants, gap filling, watering, mowing of lawn, clipping of hedges, removal of garden waste, applying inseticide, pesticide & fertilizer(whenever required) top dressing of lawn with good earth and manure and maintenace of other garden related works for 12 months (1 year) as directed by officer-in-charge. (Note:-Good earth, maure, fertilizer, insecticide, pesticide etc & all T&P articles & stock material will be provided bt the department.) **- Open spaces(as per yard stick 1Mali =3.00Acre).**	14400.000	per sqm per month
521	Supply and stacking of selection No. 1 doob grass at the fresh & fre from weeds having proper roots.	2500.000	SQM
522	Providing and Displaying plants Budded Rose (H.T. variety) 3 to 4 healthy branch 30 cm and above ht. well developed with one and above flower plant in 20 cm Earthen Pot, as per direction of the officer-in-charge.	500.000	Each
523	Providing and Displaying plants Creeper Rose variety 3 to 4 healthy branch 60 cm and above ht. well developed with one and above flowers in 25 cm Earthen Pot, as per direction of the officer-in-charge.	500.000	Each
524	Providing and Displaying plants Standard Rose (H.T. variety) 3 to 4 healthy branch 90 cm and above ht. well developed with one and above flowers in 25 cm Earthen Pot, as per direction of the officer-in-charge.	500.000	Each
525	**Timber and Flowering tree**		

526	Supply and stacking of Grevillea robusta (Silver Oak) plant of height 150- 165 cm. in big poly bags of size 25 cm as per direction of the officer-incharge	100.000	Each
527	Supply and stacking of Polyalthia longifolia (Ashok) plant of height 150- 165 cm. in earthen pots of size 25 cm as per direction of the officer-incharge.	200.000	Each
528	Supply and stacking of Acacia auriculiformis (Amaltas) plant of ht 150-165 cm in bag size of 25 cm as per direction of the officer-in-charge.	100.000	Each
529	Supply and stacking of Millingtonia hortensis plant of height 150-165 cm.in big poly bag of size 25 cm as per direction of the officer-in-charge.	100.000	Each
530	Supply and stacking of Spathodea campanulata plant of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge.	100.000	Each
531	Supply and stacking of Delonix regia (Gulmohar) plant of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge	100.000	Each
532	**FURNITURE**		
532.1	Providing & fixing Reception Table as per photograph. Size: 4350(W) x 900(D) x 750/1100(Ht)mm. Reception worksurface top 25mm thick in prelaminated particle board at 750mm ht. Side Gable end 25mm thick in pre laminated particle board. Reception table modesty 25mm thick in prelaminated particle board of 1100mm ht, working Table top have wiremanager hole cut for passing the wires. Ledge top (white) of 200mm (d) and below the ledge top 200mm (d), 25mm thick in pre laminated particle board supprted with studs. Front white panel in 25mm pre laminated particle board All exposed edges sealed with 2mm thick pvc edge banding tape. Table have metal cable tray duly powder coated below the table top run for the wires without switch & socket plates. Metal wire riser for carrying wires. Providing and placing Metal Pedestal with an overall size 400(w) x 450(d) x 600(ht)mm with 2nos of drawers & 1 filling Drawer. Pedestal shall be movable with castors. Pedestal facia have recessed type in built handle with locking arrangement. Metal pedestal having facia in 1mm and rest of the body and inner drawer are made of 0.8mm thick CRCA high yield strength CRCA sheet of grade 'D' confirming to IS: 513 duly powder Coated with 40-50 microns after 7 tank pre-treatment process flow of approved colour & shade etc. The Pedestal Drawers are mounted on metallic roller slides on both sides. **Reference Image:**	1.000	No

	  Note: Images are only for reference purpose		
533	Providing & Placing Side Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves. Size: 1500(w) x 450(D) x 750(Ht)mm.confirming to ANSI/BIFMA standards **Reference Image:**  Note: Images are only for reference purpose	2.000	Nos
534	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered	2.000	Nos

	with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650 mm fitted with 5 nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**  Note: Images are only for reference purpose		
535	**Supplying and placing sofa that shall be constructed from natural hard wood and commercial plywood having inner frame. The thickness of the wood should allow for the heavy tension webbing. The sofa shall have spring attached and also be padded separately. The frame shall be padded with high resilience polyurethane foam having density 40Kg/m³ in seat and 32Kg/m³ in back. There shall be cushion arm provided padded with high resilience polyurethane foam having density 32Kg/m³. The complete structure shall be upholstered with leatherite tapestry 0.8±0.1 mm thick and 535 GSM. The understructure shall consist of SS 202 grade leg having Dia. 38mm. There shall be shoe provided at the bottom to avoid scratches on the floor.** **Reference Image:**		

	 Note: Images are only for reference purpose		
535.1	THREE SEATER SOFA (SIZE- 1950 X 750X 750HT)(-+10)	4.000	Nos
535.2	TWO SEATER SOFA (SIZE- 1350 X 750X 750HT)(-+10)	2.000	Nos
536	**Providing & Supplying in position of Table as per photograph. Center Table top made out of glass. Table understructure shall be made SS brushed frame. Table have a small buffer to avoiding the scracing on the floor.** **Reference Image:**  Note: Images are only for reference purpose		
536.1	Size:- 600(L) x 450(D) x 400(ht)	8.000	Nos
536.2	Size:-1200(L) x 600(D) x 400(ht)	5.000	Nos
537	L-SHAPE WORKSTATION Size: 1500 X 1500 (W) X 600 (D) X 750/1050 (HT) WorkTop - Table top made up of 25mm thick prelaminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm droit Legs duly MS powder coated on both sides with connecting beam. Wire Management - Metal Flipper of 400 x 120mm size without switch socket is fixed on worktop with metal cable tray below the table top for Electrical points and wire riser for carrying wires. 32mm thick Screen half white board/ half pinup board 300ht. Providing and placing Metal Pedestal with an overall size 400(w) x 450(d) x 600(ht) mm with 2nos of drawers & 1 filling Drawer. Pedestal shall be movable with castors. Pedestal facia have recessed type in built handle with locking	54.000	Nos

	arrangement. Metal pedestal having facia in 1mm and rest of the body and inner drawer are made of 0.8mm thick CRCA high yield strength CRCA sheet of grade 'D' confirming to IS: 513 duly powder Coated with 40-50 microns after 7 tank pre-treatment process flow of approved colour & shade etc. The Pedestal Drawers are mounted on metallic roller slides on both sides. confirming to ANSI/BIFMA standards **Reference Image:**  Note: Images are only for reference purpose		
538	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650 mm fitted with 5 nos. twin wheel castors which shall be made	54.000	Nos

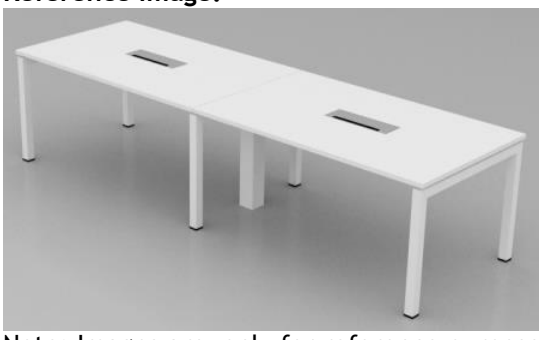
	of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**  Note: Images are only for reference purpose		
539	**Providing & Placing Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk PLPB shelves.** **Reference Image:**  Note: Images are only for reference purpose		
539.1	Size: 1200(W) x 450(D) x 750(Ht)mm.	6.000	Nos
539.2	Size: 6600(W) x 450(D) x 1200(Ht)mm.	1.000	No
539.3	Size: 3000(W) x 450(D) x 1200(Ht)mm.	1.000	No

540	**WorkTop - Table top made up of 25mm thick pre laminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm Droit Legs duly MS powder coated on both sides with connecting beam. Modesty 18mm thick PLPB 600ht with edge banding tape. Wire Management - Flipper of 400 x 120 mm without switch socket on worktop with metal cable tray below Table top for Electrical points and wire riser for carrying wires. Side storage top made of 25mm thick plpb. Side storage understructure made of 18mm pre laminted partical board. Side storage shall have a design of openable shutter. Side Storage shall have proper locking arrangement. Back storage top made of 25mm thick plpb. Back storage understructure made of 18mm prelaminted partical board. Back storage shall have a design of openable shutter. Storage shall have proper locking arrangement. confirming to ANSI/BIFMA standards** **Reference Image:**  Note: Images are only for reference purpose		
540.1	Table Size: 1800W x 700D x 750Ht mm, Side Size: 1000W x 400D x 750Ht mm, Back Storage Size: 2550W x 450D x 750Ht mm.	9.000	Nos
540.2	Table Size: 1800W x 700D x 750Ht mm, Side Size: 1000W x 400D x 750Ht mm, Back Storage Size: 2200W x 450D x 750Ht mm.	1.000	No
540.3	Table Size: 1800W x 700D x 750Ht mm, Side Size: 1000W x 400D x 750Ht mm, Back Storage Size: 3000W x 450D x 750Ht mm.	4.000	Nos
540.4	Table Size: 1500W x 600D x 750Ht mm, Side Size: 900W x 400D x 750Ht mm, Back Storage Size: 1800W x 450D x 750Ht mm.	2.000	Nos

540.5	Table Size: 1800W x 700D x 750Ht mm, Side Size: 900W x 400D x 750Ht mm, Back Storage Size: 2700W x 450D x 750Ht mm.	1.000	No
540.6	Table Size: 1200W x 600D x 750Ht mm, Side Size: 900W x 400D x 750Ht mm, Back Storage Size: 2000W x 450D x 750Ht mm.	5.000	Nos
540.7	Table Size: 1800W x 700D x 750Ht mm, Side Size: 1000W x 400D x 750Ht mm	2.000	Nos
540.8	Table Size: 1800W x 700D x 750Ht mm, Side Size: 1000W x 400D x 750Ht mm, Back Storage Size: 3900W x 450D x 750Ht mm.	2.000	Nos
541	Supplying and placing ergonomically designed, comfortable & aesthetically appealing High back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have Synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650mm fitted with 5nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards. **Reference Image:**  Note: Images are only for reference purpose	26.000	Nos

542	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650mm fitted with 5nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards. **Reference Image:**  Note: Images are only for reference purpose	97.000	Nos
543	ATTENDANT BED * Frame work made of rectangular/ square MS tube. * 5 cm foam padded top covered with rexine * Legs fitted with PVC Stumps * Overall Size: 180 L x 60 W x 46H cms. * Finish: Exoxy Powder coated. **Reference Image:**  Note: Images are only for reference purpose	1.000	No
544	Providing & Placing Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and	2.000	Nos

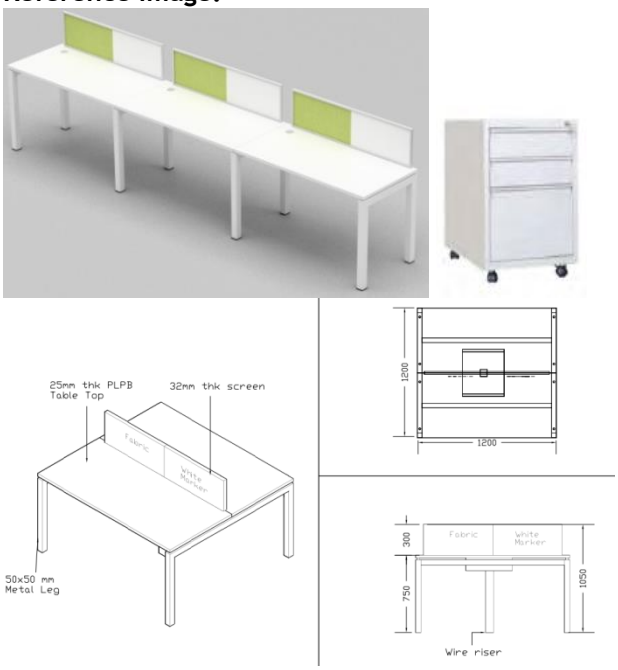
	colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves. Size: 1800(w) x 450(D) x 750(Ht)mm. **Reference Image:**  Note: Images are only for reference purpose		
545	**Supplying and placing sofa as per photograph. The Sofa shall be constructed from natural hard wood and commercial plywood having inner frame. The thickness of the wood should allow for the heavy tension webbing. The sofa shall have spring attached and also be padded separately. The frame shall be padded with high resilience polyurethane foam having density 48Kg/m³ in seat and having density 32Kg/m³ in back. There shall be cushion arm provided padded with high resilience polyurethane foam having density 32Kg/m³. The complete structure shall be fully upholstered with Leathrite / Fabric tapestry. The understructure shall have metal. There shall be shoe provided at the bottom to avoid scratches on the floor.** **Reference Image:**  Note: Images are only for reference purpose		
545.1	THREE SEATER SOFA (SIZE- 1950 X 750 X 750HT)(-+10)	2.000	Nos

545.2	ONE SEATER SOFA (SIZE- 1350 X 750 X 750HT)(-+10)	1.000	No
546	**Providing & Supplying in position of Table as per photograph. Center Table top made out of glass. Table understructure shall be made SS brushed frame. Table have a small buffer to avoiding the scracing on the floor.** **Reference Image:**  Note: Images are only for reference purpose		
546.1	Size:- 600(L) x 450(D) x 400(ht)	2.000	Nos
546.2	Size:-1200(L) x 600(D) x 400(ht)	1.000	No
547	WorkTop - Table top made up of 36mm thick pre laminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm Droit Legs duly MS powder coated on both sides with connecting beam. Wire Management - Flipper of 400 x 120mm without switch socket on worktop with metal cable tray below Table top for Electrical points and wire riser for carrying wires. Size: 7200W x 1500D x 750Ht mm **Reference Image:**  Note: Images are only for reference purpose	1.000	No
548	Providing & fixing table as per photograph. Size 3600 W x 1200D x 750mm height. Table Top shall be made out of 25mm thick Pre laminated particle Board of approved shade, design and colour. All exposed edges are sealed with the 2mm thick pvc edge banding tape and all unexposed edges sealed with 0.6mm edge banding tape pressed at 200o C with hot melt glue on special machines. The Metal Flipper is fixed on worktop of size 400 x 120mm, without switch & socket with metal cable tray below Table top for Electrical points with metal wire riser	2.000	Nos

	for carrying wires. The gable end shall be made of 25mm thick prelaminated particle board. The Modesty shall be made of 18mm thick prelaminated particle board. All exposed edges are sealed with the 2mm thick pvc edge banding tape and all unexposed edges sealed with 0.6mm edge banding tape pressed at 200o C with hot melt glue on special machines. **Reference Image:**  Note: Images are only for reference purpose		
549	Supplying and placing ergonomically designed, comfortable & aesthetically appealing High back chair. The seat shall be made of 15mm thick hot pressed plywood upholstered with high resilience polyurethane foam having density 48kg/m^3 with black leatherite tapestry 0.7mm thick and 535 GSM and the back shall be supported by MS CRCA metal frame upholstered with black leatherite tapestry 0.7mm thick and 535 GSM with contoured lumbar support which helps to provide full back support and maintain the natural curvature of the spine. The armrest shall be used MS chrome plated completely joint with seat and back. The chair shall have centre tilt 360 degree revolving mechanism with upright position locking and tilt tension adjustment. The Pedestal shall be made up of MS CRCA chrome plated having pitch circle Dia 650mm fitted with 5nos. 50mm twin wheel castors which shall be made of injection moulded black nylon 30% glass filled having self-lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**	3.000	Nos

	 Note: Images are only for reference purpose		
550	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed plywood upholstered with high resilience polyurethane foam having density 48kg/m^3 with black leatherite tapestry 0.7mm thick and 535 GSM and the back shall be supported by MS CRCA metal frame upholstered with black leatherite tapestry 0.7mm thick and 535 GSM with contoured lumbar support which helps to provide full back support and maintain the natural curvature of the spine. The armrest shall be used MS chrome plated completely joint with seat and back. The chair shall have swivel tilt 360 degree revolving mechanism with upright position locking and tilt tension adjustment. The Pedestal shall be made up of MS CRCA chrome plated having pitch circle Dia 650 mm fitted with 5 nos. 50mm twin wheel castors which shall be made of injection moulded black nylon 30% glass filled having self-lubricating property for friction free movement, confirming to ANSI/BIFMA standards. **Reference Image:**	12.000	Nos

	 Note: Images are only for reference purpose		
551	**Providing & Placing Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement.The storage is having 18mm thk. PLPB shelves. Size: 4950(w) x 450(D) x 750(Ht)mm. Reference Image:**  Note: Images are only for reference purpose		
551.1	Size: 5000(w) x 450(D) x 1200(Ht)mm.	1.000	No

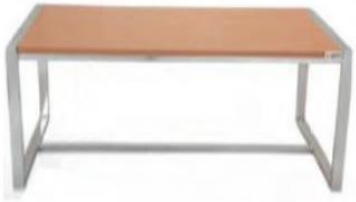
552	**WORKSTATION** **WorkTop - Table top made up of 25mm thick pre laminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm droit Legs duly MS powder coated on both sides with connecting beam. Wire Management - wire manager hole on worktop with metal cable tray below the table top for Electrical points and wire riser for carrying wires. 32mm thick Screen half white board/ half pinup board 300ht. Providing and placing Metal Pedestal with an overall size 400 (w) x 450 (d) x 600(ht) mm with 2nos of drawers & 1 filling Drawer. Pedestal shall be movable with castors. Pedestal facia have recessed type in built handle with locking arrangement. Metal pedestal having facia in 1mm and rest of the body and inner drawer are made of 0.8mm thick CRCA high yield strength CRCA sheet of grade 'D' confirming to IS: 513 duly powder Coated with 40-50 microns after 7 tank pre-treatment process flow of approved colour & shade etc. The Pedestal Drawers are mounted on metallic roller slides on both sides. confirming to ANSI/BIFMA standards** **Reference Image:**  Note: Images are only for reference purpose		
552.1	Size:1200(W) X 600(D) X 750/1050(HT)	154.000	Nos

553	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650mm fitted with 5nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**  Note: Images are only for reference purpose	137.000	Nos
554	**Providing & Placing Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves.** **Reference Image:**		

	 Note: Images are only for reference purpose		
554.1	Size: 3000(w) x 450(D) x 750(Ht)mm.	3.000	Nos
554.2	Size: 3150(w) x 450(D) x 1200(Ht)mm.	1.000	No
554.3	Size: 2100(w) x 450(D) x 750(Ht)mm.	2.000	Nos
555	Providing & fixing Main Table along with the side unit and drawer as per photograph. The Table Top shall be made out of 36mm thick prelaminated particle board, all exposed edges sealed with 2mm thick pvc edge banded tape. The table have one side Drawer unit with metal studs support for the top, Metal Flipper of 400 x 120mm without switch socket with metal cable tray below Table top for Electrical points. Drawer unit made of 18mm thick prelaminated particle board, Drawer have 3 equal drawer, all exposed edges sealed with 2mm thick pvc edge banded tape, Table have other side support with Side storage. Side stoarge have openable shutters along with Drawer unit & open space. The table Modesty shall be made out of 18mm thick pre laminated particle board. The Side Storage top shall be made out of 18mm thick pre laminated particle board and understructure shall be made out of 18mm pre lamionated partical board. Table Drawer & Side Storage rest on the metal beam all exposed edges sealed with 2mm thick pvc edge banded tape. The back Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves. Table Size: 2250(w) x 1050(D) x 750(Ht)mm, Side unit size- 1650(w) x 450(D) x 650(Ht)mm, Back Storage size- 4000(w) x 450(D) x 750(Ht)mm. **Reference Image:**	2.000	Nos

	  Note: Images are only for reference purpose		
556	Supplying and placing ergonomically designed, comfortable & aesthetically appealing High back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have Synchro tilt with multi locking 360 degree revolving mechanism with upright position locking with tilt adjustment. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650 mm fitted with 5 nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon filled having self lubricating property for friction free movement, confirming to ANSI/BIFMA . **Reference Image:**	2.000	Nos

	 Note: Images are only for reference purpose		
557	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have Synchro tilt with Mutli locking 360 degree revolving mechanism with upright position locking with tilt adjustment. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650mm fitted with 5 nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon filled having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards. Untitled **Reference Image:**  Note: Images are only for reference purpose	6.000	Nos

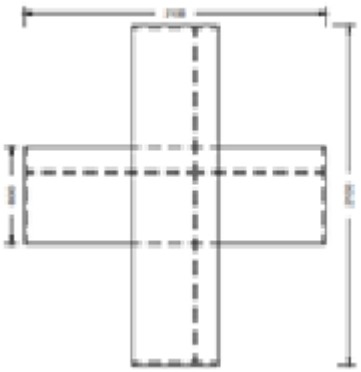
558	**Supplying and placing a sofa that shall be constructed from natural hard wood and commercial plywood having inner frame. The thickness of the wood should allow for the heavy tension webbing. The sofa shall have spring attached and also be padded separately. The frame shall be padded with high resilience polyurethane foam having density 48Kg/m³ in seat and having density 32Kg/m³ in back. There shall be cushion arm provided padded with high resilience polyurethane foam having density 32Kg/m³. The complete structure shall be fully upholstered with leatherite tapestry 0.7mm thick and 535 GSM. The under structure shall have wooden leg. There shall be shoe provided at the bottom to avoid scratches on the floor.** **Reference Image:**  Note: Images are only for reference purpose		
558.1	THREE SEATER SOFA (SIZE- 1950X 750X 750HT)(-+10)	2.000	Nos
558.2	TWO SEATER SOFA (SIZE- 1350X 750X 750HT)(-+10)	2.000	Nos
559	Supplying and Placing Table as per photograph. Table Size:- 1200(L) x 600(D) x 450(Ht). The Table top 25mm thick Pre laminated particle Board with decorative Laminate, All exposed edges Sealed with 2mm thick pvc edge banding tape laminate of approved shade, design and colour. Base in Chrome Finish. **Reference Image:**  Note: Images are only for reference purpose	2.000	Nos
560	Supplying and Placing Table as per photograph. Table Size:- 600(L) x 600(D) x 450(Ht) The Table top 25mm thick Pre laminated particle Board with decorative Laminate, All exposed edges Sealed with 2 mm thick pvc edge banding tape laminate of approved shade, design and colour. Base in Chrome Finish.	2.000	Nos

	Reference Image:  Note: Images are only for reference purpose		
561	Providing & Placing Table. Size:- 1800(w) X 600(d) X 750(ht). The top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The Gable end shall be made out of 18mm thick Pre-Laminated Particle Board. The Modesty shall be made out of 18mm thick Pre-Laminated Particle Board 600ht. Back Storage Size:- 1800(w) X 450(d) X 750(ht). The back Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves. **Reference Image:** 	14.000	Nos

	 Note: Images are only for reference purpose		
562	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650mm fitted with 5 nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**  Note: Images are only for reference purpose	14.000	Nos
563	WorkTop - Table top made up of 25mm thick pre laminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm Droit Legs duly MS powder coated on both sides with connecting beam. Modesty 18mm thick PLPB 600ht with edge banding tape. Size:- 750(L) x 500(D) x 750(Ht) **Reference Image:**	908.000	Nos

	 Note: Images are only for reference purpose		
564	Supplying & Placing Chair ergonomically designed for user comfort & shall have aesthetically appealing design. The seat shall be made of 12mm thick hot pressed plywood upholstered with high resilience polyurethane foam having density 48kg/m^3 with fabric tapestry of 300 GSM and the back shall be made of polypropylene. The arm shall be provided MS chrome plated having Dia. 25.4mm with PU on top for comfort. The frame structure shall be four legged support type made up of chrome plate round pipe of Dia 20mm with 1.5mm thick. There shall be PPCP shoe provided at the base to avoid scratches on the floor. **Reference Image:**  Note: Images are only for reference purpose	908.000	Nos
565	WorkTop - Table top made up of 25mm thick pre laminated partical board with 2mm thick pvc edge banding tape. Understructure of 50 x 50mm Droit Legs duly MS powder coated on both sides with connecting beam. Modesty 18mm thick PLPB 600ht with edge banding tape. Size:- 1800(L) x 600(D) x 750(Ht) **Reference Image:**	3.000	Nos

	 Note: Images are only for reference purpose		
566	Supplying and placing ergonomically designed, comfortable & aesthetically appealing Medium back chair. The seat shall be made of 15mm thick hot pressed commercial plywood upholstered with high resilience moulded polyurethane foam having density 48kg/m^3 with foam net tapestry. The seat shall be upholstered with fabric tapestry 0.8mm thick and 300 GSM and the back shall be made of polypropylene net cover upholstered with breathable mesh tapestry. The backrest shall be made with contoured lumbar support and maintain the natural curvature of the spine. The chair shall be supplied with PU adjustable arm. The chair shall have synchro tilt 360 degree revolving mechanism with upright position locking. The Pedestal should have five legged injection moulded black nylon having pitch circle dia. 650 mm fitted with 5 nos. twin wheel castors which shall be made of injection moulded in 30% glass filled nylon having self lubricating property for friction free movement, confirming to ANSI/BIFMA standards . **Reference Image:**  Note: Images are only for reference purpose	5.000	Nos
567	Providing & Placing Table as per photograph. Table Top shall be made out of 25mm thick, pre laminate particle board, laminate of approved shade, design and colour. The Gable end shall be made out of 18mm thick, prelaminated particle board, laminate of approved shade, design and colour. Modesty shall be made out of 18 mm thick, prelaminated particle board, laminate of approved shade, design and colour, Modesty 600mm HT. In Center box shall be made out of 18mm thick, pre laminate	25.000	Nos

	particle board, laminate of approved shade, design and colour. Size:- 2100(L) x 600(D) x 750(Ht).Partition height will be 1200mmx50/75mm inbetween any two students to ensure student reading privacy **Reference Image:**  Note: Images are only for reference purpose		
568	Providing & Placing Round Table as per photograph. Table Top shall be made out of 25mm thick, pre laminate particle board, laminate of approved shade, design and colour. The Gable end shall be made out of 18mm thick, prelaminated particle board, laminate of approved shade, design and colour. Modesty shall be made out of 18 mm thick, prelaminated particle board, laminate of approved shade, design and colour, Modesty 600mm HT. In Center box shall be made out of 18mm thick, pre laminate particle board, laminate of approved shade, design and colour. Size:- 1200(Dia.) x 750(Ht) **Reference Image:**  Note: Images are only for reference purpose	2.000	Nos

569	Supplying & Placing Chair whose seat and back shall be made of 12mm thick hot pressed plywood upholstered with high resilience polyurethane foam having density 32kg/m^3 with black leatherite tapestry 0.7mm thick and 535 GSM. The seat and back shall be fixed with metal frame. The frame structure shall be supported by four legs made up of MS CRCA chrome plated round pipe of size 20mm with 1.5Mm thick. There shall be PPCP shoe provided at the base to avoid scratches on the floor. **Reference Image:**  Note: Images are only for reference purpose	100.000	Nos
570	**Providing & Placing Storage as per photograph. The Storage top shall be made out of 25mm thick Pre-Laminated Particle Board of approved shade, design and colour. All exposed edges are sealed with 2mm thick pvc edge banding tape pressed at 200 degree C with hot melt glue on special machines. The understructure shall be made out of 18 mm thick Pre-Laminated Particle Board. The storage is having openable shutter with locking arrangement. The storage is having 18mm thk. PLPB shelves.** **Reference Image:**  Note: Images are only for reference purpose		
570.1	Size: 4600(w) x 450(D) x 1200(Ht)mm. (LIBRARY)	2.000	Nos

570.2	Size: 23700(w) x 450(D) x 1200(Ht)mm. (LIBRARY)	1.000	No
570.3	Size: 5600(w) x 450(D) x 1200(Ht)mm. (LIBRARY)	2.000	Nos
570.4	Size: 14250(w) x 450(D) x 1200(Ht)mm.(LIBRARY)	1.000	No
571	Office Steel Almirah without locker : Providing and placing in position of Office Steel Almirah without locker of size 910(w) x 480(d) x 1980(ht)mm. Almirah carcass made of 0.8mm thikness high yield strength CRCA steel sheet of grade 'D' confirming to IS: 513. Almirah shall have 4 shelves making 5 compartments. Almirah is having door made of 1mm thick high yield strength CRCA steel sheet of grade 'D' confirming to IS: 513 with locking arrangement. Almirah shelves shall be made of CRCA steel sheet of 1mm thickness with stiffners below the shelfs for good Strength & support.The Almirah is having Mazak Handle with hidden rod & lock. The Almirah shall have metal legs. Almirah shall be powder coated of approved colour and shade with 40-50 microns with 7 tank pre-treatment process. **Reference Image:**  Note: Images are only for reference purpose	37.000	Nos
572	**Supplying and placing 3 seater sofa that shall be constructed from natural hard wood and commercial plywood having inner frame. The thickness of the wood should allow for the heavy tension webbing. The sofa shall have spring attached and also be padded separately. The frame shall be padded with high resilience polyurethane foam having density 40Kg/m³ in seat and 32Kg/m³ in back. There shall be cushion arm provided padded with high resilience polyurethane foam having density 32Kg/m³. The complete structure shall be upholstered with leatherite tapestry 535 GSM. The understructure shall consist of SS 202 grade leg having Dia. 38mm. There shall be shoe provided at the**		

	bottom to avoid scratches on the floor. THREE SEATER SOFA (SIZE- 1950 X 750 X 750HT)(-+10) **Reference Image:**  Note: Images are only for reference purpose		
572.1	THREE SEATER SOFA (SIZE- 1950 X 750 X 750HT)(-+10)	1.000	No
572.2	TWO SEATER SOFA (SIZE- 1350 X 750 X 750HT)(-+10)	1.000	No
573	**Providing & Supplying in position of Table as per photograph. Center Table top made out of glass. Table understructure shall be made SS brushed frame. Table have a small buffer to avoiding the scracing on the floor.** **Reference Image:**  Note: Images are only for reference purpose		
573.1	Size:- 600(L) x 450(D) x 400(ht)	1.000	No
573.2	Size:-1200(L) x 600(D) x 400(ht)	1.000	No
574	Indutrial Locker with 12 door : Providing and placing a personal locker in perfectly upright and straight position. The overall size of the locker is 910(w) x 480(d) x 1980(ht)mm. The personal locker shall have 12 nos. of doors. It shall be (like top, side, back, door, shelf etc.) made of 0.8mm thickness high yield strength CRCA sheet of grade 'D' confirming to IS: 513. The main frame and base shall be semi welded and folded constructions which have intrinsic rigidity and high load carrying capacity. Uniformly distributed load capacity of each shelf shall be 40 Kg. The door shall be operated with aesthetically appealing snap fit ABS plastic handle and concealed crank hinge. Adjustable leveler shall be provided with metal insert to resist scratches on the floor and also level & support structure. The structure shall be supplied duly powder coated with 40-50 microns	20.000	Nos

	with 7 tank pre-treatment process. Locker shall have individual locking arrangement. **Reference Image:**  Note: Images are only for reference purpose		
575	**UG TANK**		
576	**EARTH WORK**		
577	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 lift upto 1.5 m, as directed by Engineer-in-charge. **All kind of Soil**	478.000	CUM
578	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 lift upto 1.5 m, as directed by Engineer-incharge. **Ordinary rock**	319.000	CUM
579	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.	121.000	CUM
580	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. All kinds of soil	312.000	CUM

581	**CONCRETE WORK**		
582	**Providing and laying in position cement concrete of specified grade excluding the cost of centering and shttering - All work up to plinth level**		
582.1	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	21.000	CUM
583	**REINFORCED CEMENT CONCRETE**		
584	**Centering & shuttering including strutting, propping etc. and removal of form work for:**		
584.1	Foundations, footings, bases of columns etc. for mass concrete.	34.000	SQM
584.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	448.000	SQM
584.3	Suspended floors, roofs, landings, balconies and access platform.	183.000	SQM
584.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	17.000	SQM
584.5	Columns, Pillars, Piers, Abutments, Posts and Struts	14.000	SQM
584.6	Edges of slabs and breaks in floors and walls Under 20 cm wide	72.000	Metre
584.7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level or above plinth level. Thermo-Mechanically Treated bars.Fe 500D	21356.000	Kgs
585	**Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.** **Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable**		

	separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.		
585.1	**All works upto plinth level** Concrete of M25 grade with minimum cement content of 330 kg /cum	165.000	CUM
585.2	**All works above plinth level upto floor V level** Concrete of M25 grade with minimum cement content of 330 kg /cum	3.000	CUM
586	**BRICK WORK**		
587	**Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:**		
587.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	2.000	CUM
587.2	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	2.000	CUM
588	**WOOD WORK**		
589	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 steel windows by welding	9.000	Kgs

590	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws etc. complete : 100x10 mm	3.000	Each
591	**STEEL WORK**		
592	**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.**		
592.1	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	198.000	Kgs
592.2	In gratings, frames, guard bar, ladders, railings, brackets, gates & similar works.	350.000	Kgs
593	**Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D, F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment).**		
593.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	7.000	Kgs
594	Extra for providing and fixing steel beading of size 10 x 10 x 1.6 mm (box type), approved shape and section with screws instead of glazing clips and metal sash putty, in steel doors, windows, ventilators and composite units.	4.000	Metre
595	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge. 10 x 140 mm	10.000	Each
596	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 4.0 mm thick glass panes	0.360	Sqm

597	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 flats 30x6mm for diagonal braces and central cross piece	3.000	Sqm
598	**FLOORING**		
599	Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately). Red sand stone - 30mm thick gang saw cut stone	18.000	SQM
600	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S. brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineerin- charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid).	54.000	Kgs
601	Providing and fixing stainless steel cramps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand), including making the necessary chases in stone and holes in walls wherever required.	30.000	Each

602	**ROOFING**		
603	Providing and fixing on wall face unplasticised Rigid PVC rainwater pipes confirming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion.(I)single socketed pipes. 110 mm diameter	1.000	Metre
604	Providing and fixing on wall face unplasticised PVC moulded fitting acessories for unplasticised Rigid PVC rain water pipes confirming to IS-13592 type A including jointing with seal ring confirming to IS 5382 leaving 10mm gap for thermal expansion. Coupler 110 mm	1.000	Each
605	Single tee with door AS ABOVE 110x110x110	1.000	Each
606	Bend 87.5* AS ABOVE 110 mm bend	1.000	Each
607	Shoes (plain) AS ABOVE 110 mm shoe	1.000	Each
608	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete. 110 mm	1.000	Each
609	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	1.000	Each
610	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75 mm deep chase	12.000	Metre

611	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	1.000	Each
612	**FINISHING**		
613	12 mm cement plaster of mix : 1:6 (1 cement: 6 fine sand)	8.000	SQM
614	15 mm cement plaster on the rough side of single or half brick wall of mix: 1:6 (1 cement: 6 fine sand)	19.000	SQM
615	6mm cement plaster 1:3 (1 cement : 3 fine sand) on ceiling / R.C.C. Beams etc.	631.000	SQM
616	Neat cement punning.	631.000	SQM
617	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	46.000	Per bag of 50kg cement used in the mix
618	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats	79.000	SQM
619	Finishing walls with water proofing cement paint of required shade : New work (Two or more coats applied @ 3.84 kg/10 sqm)	10.000	SQM
620	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	79.000	SQM
621	**MISCELLANEOUS WORK**		

622	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS : 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per stand ard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	15.000	Each
623	Supplying and fixing C.I. cover without frame for manholes : 455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	2.000	Each
624	Providing and fixing soil, waste and vent pipes : 100 mm dia. Centrifugally cast (spun) iron S&S pipe as per IS:3989	0.500	Metre
625	**WATER PROOFING**		
626	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 : Ist 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 recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. Using Roungh Kota stone	74.000	SQM

627	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 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 : Using rough Kota stone	169.000	SQM
628	Providing and mixing integral crystalline admixture for waterproofing treatment to RCC structures like basement raft , retaining walls, re servior, sewage & water treatment plant , tunnels / subway and bridge deck etc. At the time of transporting of concrete into the drum of the ready- mix truck, using integral crystalline admixture @0.80% (minimum) to the weight of cement content per cubic metre of concrete) of higher as recommended by the manufacture's specifictaion in renforced cement concrete at site of work. The material shall meet the requirments as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage.	165.000	Kgs
629	Providing and applying of swellable type water stop tape 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC stucture, such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the rataining primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all comlete as per specification and the direction of the engineer- in-chagre. The product performance shall carry guaranteed for 10 years against any leakage.	112.000	Metre
630	**CAMPUS ROAD WORK**		

630.1	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 lift upto 1.5 m, as directed by Engineer-in-charge. **All kinds of soil**	110.000	CUM
631	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	2836.000	SQM
632	Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	851.000	CUM
633	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-II (size range 53 mm to 0.075 mm) having CBR Value-25	225.000	CUM
634	Construction of dry lean cement concrete sub base over a prepared sub-grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-incharge.	225.000	SQM
635	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete	123.000	SQM

636	"Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately). Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately (minimum 40% flyash) Cement concrete manufactured in automatic batching plant (RMC plant) i/c transportation to site in transit mixer	123.000	CUM
637	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth & above plinth level. Thermo-Mechanically Treated bars.FE 500D	7362.000	KGS
638	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge). (minimum 40% flyash)	123.000	CUM
639	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	21.000	MTR

640	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete : 300 mm dia. R.C.C. pipe	86.000	MTR
641	Providing and laying in position bitumen hot sealing compound for expansion joints etc. Using grade 'A' sealing compound.	21196.000	per cm depth per cm width per m length
642	Supplying and stacking at site. Good earth	7322.000	CUM
643	Providing and laying Grooming over finshed surface of CC road to make the surface rough as approved by architect and complete in all respect..	1502.000	SQM
644	Providing grooves in CC road as per architecture drawing and design as approved by architect and complete in all respect..	300.000	MTR
645	**HVAC WORK**		
646	**All the rates quoted by the contractor shall be complete finished work including cost of all labour, material, scaffolding, finishing as required with tools, plants, lead, lift, taxes, tollage, octroi, royalties etc. except those specially excluded in the description of the individual items. All works shall be executed as per drawings, specification and instructions of Site incharge and shall include the supply and installation at site of all the equipment, ancillary materials as specified and all such items what-so-ever which may be required to fulfill the intent and purpose as laid down in the specification and/or the drawings. All materials shall be as per ISI specification and with IS certification marked wherever applicable. The material shall be duly approved by Site incharge before incorporation in the actual work** **NOTE** **a) All Equipment should be BMS Compatiable with BACnet / MODbus application** **b) All equipments foundation to be included in the quote** **C) All equipments should comply with ECBC(Latest) applicable Requirements along with BOQ requirements**		

647	**Part-A : High Side Works-Air Conditioning**		
648	**Chilling Units (Screw Type) with VFD** **'Supply, Installation, Testing and Commissioning of AHRI Certified Air cooled Screw Water Chillers with VFD complete with Air cooled Copper - Aluminium condensers, Single/ multiple Compressors, Single/multi circuit Chiller, refrigerant R-134a, microprocessor based Control system, Electrical panel, mounting frame works, vibration isolators, integral refrigerant piping and wiring, all required accessories, automatic & safety controls, advanced microprocessor based control panel along with required hardware & software for integration with a 3rd party BMS (Open protocol). The condenser shall be mandatory coated with goldfin or epoxy or equivalent coating. ASME Stamped evaporator first charge of refrigerant and oil, incommer switchgear with terminations box suitable for terminations of XLPE AL armoured cables, earthing terminations etc. all mounted on a steel frame, foundation bolts nuts and accessores complete duly finished as per manufacturer standard as required & as per technical specifications with the following charactreistices complete as required :**		
648.1	**Chiller AS ABOVE** **Co-efficient of performance of selected chiller at AHRI conditions shall be minimum 5.48** Cooling Capacity : 150 TR (Actual) Air Entering in Condenser : 104.9 F Chilled water in : 54.5 °F Chilled water out : 45.5 °F Chilled water flow : 398 USGPM Fouling factor : 0.0001 FPS Full Load IKW at AHRI : 1.1(Max) NPLV at Duty Conditions : 5.29 (Min) 150 Tons, Actual Capacity (2W+1SB AND 1 FUTURE)	3.000	Nos
649	**WATER CIRCULATION PUMPS**		

649.1	**Primary Chilled Water Pumps** Supply, installation, testing and commissioning of Vertical Closed Coupled, Single stage, Single suction, Inline Centrifugal casing, top-pull-out design (i.e, the power head (motor, pump head, and impeller) can be removed for maintanence or service while the pump housing remains in the pipe work), primary chilled water pumps set complete with, Cast iron casing, Lead free bronze impeller, an internally-flushed mechanical seals and close coupled with stainless steel stub shaft arrangement with electric motor for re-circulation of chilled water circulation. The pump motor shall be TEFC squirrel cage induction motor having efficiency class IE3 (as per IEC 60034) with class 'F' insulation, 1500 RPM synchronous speed, operating on 415 V +/- 10%, 3 phase, 50 Hz AC supply. The motor shall be non- overloading type. Pumps will be with performance characteristics as given below. The pump and motor shall be mounted on a common base plate. All external and exposed cast iron parts of pumps should have an epoxy-based coating made in a cathodic electro-deposition (CED) process. Pump set shall be complete with thermal insulation same as chilled water pipes, aluminium cladding at suction and discharge, necessary anti vibration pads, MS base plate, and all other accessories complete as required.Pump material and operating conditions are given here unde(3Working + 1Standby) Flow: 1514 LPM Head: 12 Metre WC Motor HP : 7.5HP Pump Efficiency(Min): 80% or above 2 Nos. 150 mm dia. Dail-type pressure gauges. Lot- A mounting framework with anti-vibration pads. Lot- RCC/Cement concrete foundation for the pump unit. Primary chilled water pumps as described above. (2W+1S)	3.000	Nos

650	**Secondary Pumps (Variable speed)** Supply, installation, testing and commissioning of Vertical Closed Coupled, Single stage, Single suction, Inline Centrifugal casing, top-pull-out design (i.e, the power head (motor, pump head, and impeller) can be removed for maintanence or service while the pump housing remains in the pipe work), secondary chilled water pumps set complete with, Cast iron casing, Lead free bronze impeller, an internally-flushed mechanical seals and close coupled with stainless steel stub shaft arrangement with electric motor for re-circulation of chilled water circulation. The pump motor shall be TEFC squirrel cage induction motor having efficiency class IE3 (as per IEC 60034) with class 'F' insulation, 1500 RPM synchronous speed, operating on 415 V +/- 10%, 3 phase, 50 Hz AC supply. The motor shall be non- overloading type. Pumps will be with performance characteristics as given below. The pump and motor shall be mounted on a common base plate. All external and exposed cast iron parts of pumps should have an epoxy-based coating made in a cathodic electro-deposition (CED) process. Pump set shall be complete with thermal insulation same as chilled water pipes, aluminium cladding at suction and discharge, necessary anti vibration pads, MS base plate, and all other accessories complete as required.Pump material and operating conditions are given here under(3Working + 1Standby) Flow: 1514 LPM Head = 18 Metre WC Motor HP : 12HP Pump Efficiency(Min) : 80% or above 2 Nos. 150 mm dia. Dail type pressure gauges. Lot- Mounting frame work with anti vibration pads. Lot- RCC/Cement concrete foundation for the pump unit. Secondary chilled water pumps as described above (2W+1S)	3.000	Nos

651	**Variable Speed Pumping System** Supply, installation, testing and commissioning of VARIABLE SPEED PUMPING SYSTEM consisting of variable speed secondary chilled water pumps as per above with matching VFDs with pulse width modulation (PWM)type, one dedicated microprocessor based pump controller with parallel pumping software duly installed. Multi Pump Controller shall be listed by and bear the label of Underwriter's Laboratory Inc (UL). Pump logic controller inbuilt with Variable frequency drives are not accepted. Logic controller should be external to the drives used in the system. Multi Pump Controller shall have programs to safeguard the system against the following conditions Pump flow surges, System Hunting, End of curve protection. Multi Pump Controller shall have program function to accept the pump curve data for optimizing the system performance in terms of energy consumption. Multi Pump Controller shall be capable of controlling up to six pumps in parallel. Automatic cascade control of pumps, automatic sequence change, friction loss compensation, pump status shall be there. Display screen shall be graphical type with minimum 320 pixels x 240 pixesl VGA display with backlight. The entire system along with chilled water pumps as described must be sourced from pump supplier only, to ensure unit responsibility. Should be compatible with Modbus / Bacnet.		
651.1	**Control panel (IP41) with VFD and Differential pressure transmittor as per above statement.**	1.000	Nos
652	Civil work The HVAC vendor should include the cost of foundation requird for each chiller and other euipment in plant room. This include the civil work required after the approval of foundation drawings issued by OEM. The rubber pad should aslo be provided in the foundation in order to reduce the vibration.	1.000	Lot
653	**Part 'B' : Low Side Works**		

654	**Unitary Type Air Handling Units** **Ceiling suspended** **Supplying, installing, testing and commissioning of factory built Ceiling Suspended double skin type air handling units made of 43±2 mm thick panel with thermal break profile consisting of pre plasticized/ Pre-coated GI casing of 0.6 mm thickness outside layer and plane GI of 0.6 mm thick inside layer with polyurethene foam (PUF) insulation of density 40±2 kg/m3 factory injected between them by injection moulding machine, complete with blower section with blower forward curved belt deriven or direct driven plug fan with VFD for energy saving, having suitable external static pressure, aluminium finned copper tubes (tube thickness not less than 0.41mm), filter sections with 50 mm thick washable synthetic type Pre filters having efficiency 90% down to 10 micron with belt drive package with TEFC drive motor (IE-2) IP-55 Rating suitable for 415 ± 10% volts, 50 Hz, 3 phase, A.C supply TP isolator with MS enclosure box of required capacity, complete with drain connections with fittings, drain valve, test point for pressure guage & thermometer at the inlet and outlet of coil, stainless steel drain pan, necessary vibration isolation arrangement etc, complete as per tender specifications of following capacities:The Ahu casing should be third party certified confirming to EN 1886 2007 or Equivalent.** **ALL FLOOR**		
654.01	1200 CFM with 4 Rows Coil Cooling 2.4 Sqft. Coil Area, @ 30 mm Static WITH ALL VALVE WITH OUT 2WAY	7.000	Nos
654.2	1400 CFM with 4 Rows Coil Cooling with 2 pipe system, 2.8 Sqft. Coil Area, @ 40 mm Static WITH ALL VALVE WITH OUT 2WAY (1 pipe for CHW & 1 pipe for DX coil)	2.000	Nos
654.3	1500 CFM with 4 Rows Coil Cooling 3 Sqft. Coil Area, @ 35 mm Static WITH ALL VALVE WITH OUT 2WAY	1.000	Nos
654.4	1600 CFM with 4 Rows Coil Cooling 3.2 Sqft. Coil Area, @ 35 mm Static WITH ALL VALVE WITH OUT 2WAY	5.000	Nos
654.5	2000 CFM with 4 Rows Coil Cooling 4 Sqft. Coil Area, @ 35 mm Static	3.000	Nos
654.6	2200 CFM with 4 Rows Coil Cooling 4.4 Sqft. Coil Area, @ 35 mm Static	2.000	Nos
654.7	2400 CFM with 4 Rows Coil Cooling 4.8 Sqft. Coil Area, @ 35 mm Static	1.000	Nos
654.8	2500 CFM with 4 Rows Coil Cooling 5.0 Sqft. Coil Area, @ 35 mm Static	1.000	Nos

654.9	2800 CFM with 4 Rows Coil Cooling 5.6 Sqft. Coil Area, @ 40 mm Static	2.000	Nos
654.10	3200 CFM with 4 Rows Coil Cooling 6.4 Sqft. Coil Area, @ 40 mm Static	1.000	Nos
654.11	3200 CFM with 4 Rows Coil Cooling with 2 pipe system, 6.4 Sqft. Coil Area, @ 50 mm Static (1 pipe for CHW & 1 pipe for DX coil)	1.000	Nos
654.12	3500 CFM with 4 Rows Coil Cooling 7.0 Sqft. Coil Area, @ 40 mm Static	2.000	Nos
654.13	4000 CFM with 4 Rows Coil Cooling 8.0 Sqft. Coil Area, @ 40 mm Static	8.000	Nos
654.14	4500 CFM with 4 Rows Coil Cooling 9.0 Sqft. Coil Area, @ 40 mm Static	4.000	Nos
654.15	5000 CFM with 4 Rows Coil Cooling 10.0 Sqft. Coil Area, @ 40 mm Static	3.000	Nos
654.16	5500 CFM with 4 Rows Coil Cooling 11.0 Sqft. Coil Area, @ 40 mm Static	2.000	Nos
655	**Horizontal Type Air Handling Units** **Supplying, installing, testing and commissioning of factory built Floor mounted double skin type air handling units made of 43±2 mm thick panels with suitable thermal break profile consisting of pre plasticized/Pre-coated G.I casing made of thickness 0.8 mm outside layer and G.I sheet of thickness 0.8 mm inside layer with polyurethane foam (PUF) insulation of density 42 kg/m3 factory injected between them by injection moulding machine, complete with Direct Driven Backward Curved Aerofoil Plug Type Fans with aluminium finned copper tubes (tubes thickness not less than 0.5 mm),filter sections with 50 mm thick washable synthetic type pre filter having efficiency 90% down to 10 micron, , Direct Drive package with TEFC (EFF-1) with VFD operation at 415 ± 10% volts, 50 Hz, 3 phase, A.C supply, mixing box ,drain connections with drain valve, stainless steel drain pan, necessary vibration isolation arrangement etc. TP isolator with MS enclosure box should be Provided. etc, complete as per specifications of following capacities:**		
655.1	8000 CFM with 6 Rows Coil Cooling 16.0 sqft. Coil Area, 45 mm Static pressure.	2.000	Nos

656	**Control Valves for AHUs** **Dynamic Balancing cum modulating** **Supply, Installation, Testing and Commissioning of following sizes electronic, self-balancing, pressure independent/electronic pressure independent type dynamic balancing valve with integrated 2 way modualating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.**		
656.1	Water flow rate 6.0-10 USGPM 32dia	15.000	Nos
656.2	Water flow rate 11.0-20 USGPM 40dia	11.000	Nos
656.3	Water flow rate 21.0-40.8 USGPM 50dia	21.000	Nos
656.4	Modulating Themostat	49.000	Nos
657	**Fan Coil Units.** **Supply, installation, testing and commissioning of ceiling suspended Normal static type FCU's each complete with 3 row deep cooling coil of copper tubes aluminium fins construction, centrifugal fan, 3 speed motor, with factorty fitted complete valve station (it includes ball valve with Strainer, ball valve without strainer, 2 way motorized valve, gauges etc.) ,filters insulated drain pan which covers the valve station completely, coil piping connections, thermostat, condensate drain connection, complete as required complete with manual air vent valve, SP isolator with MS enclosure box should be Provided etc. as required as per specification & drawings with the following capacities:-**		
657.1	400 CFM (1.0 TR)	19.000	Nos
657.2	600 CFM (1.5 TR)	4.000	Nos
657.3	800 CFM (2.0 TR)	3.000	Nos

658	**Split Units** **Hi Wall Split Units (UPS Room)** **Supplying, fixing, testing and commissioning of Hi Wall/CASSETTE type split air-conditioning unit suitable to operate from 230±10% volt, 50 Hz, 1 phase power supply, with air-cooled evaporator with coil, fan,drain pump, and fan motor, air-cooled condenser with hermetically sealed rotery / reciprocating compressor condenser coil, propeller fans controls, control panel, Including control wiring, necessary power cable, M.S. frame duly painted to locate Outdoor Unit etc. The Unit should be atleast 3 Star rated. The Refrigerant pipe size and gas quantity should suit to the cupper pipe length at actual.(total circuit including liquid & suction) with interconnecting cabling between indoor / outdoor units as per site incharge, 13 mm thick.**		
658.1	2.0 TR (HUB ROOM) (hi-wall)	7.000	Nos
658.2	2.0 TR (HOD ROOM) (cassette unit)	6.000	Nos
659	**Supply, installation, testing & commissioning of split type outdoor condensing unit. The unit shall be compatable with HERMETICALLY SEALED SCROLL compressor with inverter technology and air cooled heat exchanger and complete in all respect as per specification and drawing. The refrigerant pipe of respective outdoor condensing unit with communication cable, DX expansion kit, TPN isolator, power cable, outdoor stand etc. the unit shall be with 2.8 EER value or as per the latest ECBC.**		
659.1	3.5 TR	2.000	Nos
659.2	8.5 TR	1.000	Nos
660	**Refrigerant Piping**		
661	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 34.9 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	35.000	RM

662	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	25.000	RM
663	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	10.000	RM
664	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 19.00 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	35.000	RM
665	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 15.86 mm dia (OD) (Softdrawn) with tube thickness 1.2 mm with 19 mm thick insulation	45.000	RM
666	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per	65.000	RM

	specifications etc. as required : 12.70 mm dia (OD) (Softdrawn) with tube thickness 1.2 mm with 19 mm thick insulation		
667	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 9.5 mm dia (OD) (Softdrawn) with tube thickness 1.2 mm with 19 mm thick insulation	35.000	RM
668	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete withfittings, with suitable adjustable ring type hanger supports, jointing/brazingin cluding accessories, insulated with XPLE Class-O tubular sleeves section of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required : 6.4 mm dia (OD) (Softdrawn) with tube thickness 1.2 mm with 19 mm thick insulation	65.000	RM
669	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. 150 mm width X 50 mm depth X 1.6 mm thickness	45.000	RM
670	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required. 300 mm width X 50 mm depth X 1.6 mm thickness	50.000	RM

671.1	**UVGI (Ultra Violet Germicidal Irradiation) SYSTEM** The Active Air Purification system should consist of Supply, Installation, Testing and commissioning of Bipolar Ionisation System. The Bipolar Ionisation System must be a combination of Tube Based Model and Needle Point Model (Needle Point should have Nitinol (nickel titanium) Needles) and Carbon Fibre Brush Model, System should produce positive and negative ions for creating a Bio Climate rich in ions and hence neutralising harmful pollutants including pathogens, Volatile Organic Compounds and Particulate Matter. The Carbon Brush self-balancing ionizer should be installed at the fan inlet of fan coil units, VRF cassettes, ductless splits , AHU and Ductable HVAC System. These ionizers should be self-contained in a potted ABS box with a moulded flange and mounting holes and is protected with an inline 500mAglass cartridge fuse. The Needle Point Ionizer should be automatic cleaning needlepoint ionizer producing positive and negative ions that neutralize harmful pollutants and odours in the occupied space. The Needle Point compact unit Should automatically remove dust and dirt build-up on the emitters eliminating the need for any maintenance. The Unit can be easily mounted at the fan inlet of any air handling system, including RTU's, ptacs, mini-splits, fan coil units and VRF systems. The Unit should accept 12-24 VAC/DC. The Tube Based Model should be a single-tube or double tube or 5 tube unit that can be installed in ductwork utilizing the pre-drilled flange and factory applied gasket. The installer makes a duct cut out and secures the unit with self-tapping sheet metal screws. The unit can also be installed inside an AHU, Treated Fresh Air unit, Heat Recovery Ventilation Unit, utilizing a contractor supplied mounting bracket. Power to the ionization unit should be interlocked with system fan operation. The power input fitting provides easy disconnection of the power supply for servicing the unit. A five position ion level control knob varies the ion output between 50% and 100%. The Life of Tube should be minimum 17600 working hours.		

671.2	Product should have UL 867 and UL 2998 certification (for zero ozone emission). The OEM shall have Efficacy test report on COVID from any Internationally/Nationally recognised Laboratory The System should be capable of providing periodic Preventive maintenance for automated after sales support service in form of notification/alerts and user interaction through dashboard application. Supplier must have experience of more than 3 years of executing projects with the same technology products. and have done at least 3 multi-location projects (Private Or Government) Pan India and Minimum Value of each project must be at Least 50 Lac.		
671.3	Following Certifications are mandatory to produce The Carbon Brush and Self Cleaning nickel titanium based Needle Point Bipolar Ionizer must be UL 2043 certified. · The Carbon Brush and Self Cleaning nickel titanium based Needle Point Bipolar Ionizer must have UL-2998 Certification for Safety against Zero Ozone Emission as per recommendation by ASHRAE. · The Carbon Brush and Self Cleaning nickel titanium based Needle Point Bipolar Ionizer and Tube Based Model Should be tested on UL or Intertek/ETL to prove conformance to UL 867 for electronic devices. Other Product Certifications required are ISO16000 , CSA C22.2# 187, and CARB.		
671.4	Manufacturers shall provide Test report from Internationally/Nationally recognized Lab for proven efficacy on below pathogens with minimum kill rates for the following pathogens given the allotted time and in a space condition: a) SARS-CoV-2 (COVID-19) Human Strain b) MS2 Bacteriophage (Surrogates COVID-19) c) Omicron Variant of SARS-CoV-2 d) H1N1 e) Total Bacterial Count Reduction rate of more than 90% from NABL Accredited Lab f) Yeas & Mold/Total fungal count Reduction rate of more than 90% from NABL Accredited Lab		
671.5	**FOR 26 FCU (19 NO.S 400CFM,4 NO.S 600 CFM, 3 NO.S 800 CFM)**	1.000	LOT
671.6	**FOR AHU 8000 CFM**	2.000	Nos

672	**Electrically Charged Filter** **Air purification for ceiling suspended Ductable indoor units and AHU** The air purification system should be suitable to reduce harmful pollutants like particulate matter (PMx), PM 2.5, allergens, pollen, smoke, bacteria, pathogens etc. based on below principle technology viz;Impingement, Polarisation and Agglomeration as a passive air It should be a slim structured unit specifically designed for integration in Return Air path of ceiling suspended indoor units, to centrally capture. It should be equivalent to Merv-14 or Higher efficiency for AHU and Ductable* Units with low pressure drop. It should have 3x working principles and it should be aluminium based or powder coated steel casing and should be self-contained. It should be a US patented technology with UL certified components. The units shall meet ANSI/ASHRAE 52.2 standards and have valid test report to verify filtration efficiency. The Basic Media of Electric Filter shall Carry Class 2 Fire Rating Listing by UL.The EAC filter/Electrostatic percipitator (ESP), which have Metal based collection plate shall not be accepted. The Supplier shall carry UL2998 certification or at least Acknowledgement letter from UL2998 for testing against Zero Ozone Emission. The system shall be integrated with the existing pre-section filter area of AHU. The test report for pressure drop need to be submitted for passive air purification and the same shall be demonstrated at site. Product sholud be make in india (NSIC)		
672.1	Electronic filters should consist of an Internet of Things (IoT) based Smart Filtration option employing a 3-Tier Architecture. This architecture would serve to identify pressure drops across the filter, indicating when a replacement is necessary due to clogged filters. Furthermore, it should gauge levels of filter blockage, enabling scheduled preventive maintenance to ensure sustainability. To facilitate user interaction, a well-designed UI/UX experience in the form of a dashboard is essential, complete with appropriate color-coding. Additionally, the system should generate alerts and notifications via text messages or emails to signal instances of filter clogging or the need for filter replacement. To enhance compatibility, the system must support various communication protocols, including options such as WiFi, Bluetooth Low Energy, Modbus RS485, or LoRaWAN. *Subject to Available Static as per OEM Technical Data Sheet.		

672.11	**FOR AHU-8000 CFM AS ABOVE**	2.000	Nos
672.12	**FOR CSU 1200 CFM-2400 CFM AS ABOVE**	21.000	Nos
672.13	**FOR CSU 2500 CFM-4500 CFM AS ABOVE**	19.000	Nos
672.14	**FOR CSU 5000 CFM-5500 CFM AS ABOVE**	5.000	Nos
673.1	**Indoor Air Quality Monitoring System-** Supply, Installation, Testing & commissioning of IAQ Monitor to remotely measure the levels of PM 2.5, VOCs, CO2, Temperature, Humidity on a real time basis. The IAQ Monitor shall be capable of getting connected with Wi-Fi. The Monitor should be capable of sending the indoor air quality information on display Screen/Mobile/Workstation as per Client's requirement. The Monitor should indicate the quality of air through changing the colours on the display screen as per the NAAQS standards and should meet the WELL building standards. The monitor should be a 3 tier architecture including sensor Hardware, secure cloud infrastructure, monitoring apps including dashboard, android/IOS. Quoted price shall be inclusive of all necessary arrangement as required to make the unit proper functional. The System should provide Soft Assistance in form of Notifications and Alerts for Periodic Preventive Maintenance.		
673.11	**Dot matrix HMI/USB LAN Wi Fi Port based display system for dislplaying the air quality. AS ABOVE**	1.000	Nos
673.2	**Central Air Cleaner (CAC) For Fresh Air Fan** CAC unit for Fresh AIr Fan. The air purification system should be suitable to reduce harmful pollutants like particulate matter (PMx), PM 2.5, allergens, pollen, smoke, bacteria, pathogens etc. It should be specifically designed for integration in Return Air path of Frsh Air Fan, to centrally capture the polutants. It should be equivalent to Merv-14 or Higher efficiency with low pressure drop. It should have 3x working principles and it should be aluminium based or powder coated steel casing and should be self-contained. It should be a US patented technology with UL certified components. The units shall meet ANSI/ASHRAE 52.2 standards and have valid test report to verify filtration efficiency. Contactor shall carry out tests at site for measuring the PM levels in various rooms to tests the efficacy of the air purification system.		
673.21	**Fresh Air Fan of 4000 CFM AS ABOVE**	4.000	Nos

674	**AIR CURTAIN** **Supply,Installation, testing & commissioning of Air Curtain for isolation of Air conditioned area from air cooled area .The length of the aircurtain length should be 1.2m minimum.The outlet velocity should be between 9.6 to 11.6m/sec and minimum airvelocity at 3meter shall be 2.4 m/sec**	2.000	Nos
675	**Insulation Chilled Water Piping** **Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with following closed cell elastometric nitrile rubber of minimum 45 Kg / cu m density, thermal conductivity 0.037 W/MK or better at 20 deg mean temperature class 'O' insulation applied by ENIFIX 530 adhesive complete including repairing of damage to building etc. as per specifications and as required complete in all respect. Note:- The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.(underground pipe coating in header plant room to Building as per specification and drawing)**		
675.01	250 MM (32 mm thick insulation)	80.000	RM
675.2	200 MM (32 mm thick insulation)	10.000	RM
675.3	150 MM (32 mm thick insulation)	32.000	RM
675.4	125 MM (32 mm thick insulation)	47.000	RM
675.5	100 MM (32 mm thick insulation)	102.000	RM
675.6	80 MM (32 mm thick insulation)	152.000	RM

675.7	65 MM (32 mm thick insulation)	195.000	RM
675.8	50 MM (32 mm thick insulation)	131.000	RM
675.9	40 MM (32 mm thick insulation)	58.000	RM
675.10	32 MM (19 mm thick insulation)	135.000	RM
675.11	25 MM (19 mm thick insulation)	98.000	RM
675.12	20 MM (19 mm thick insulation)	110.000	RM
676	**Butterfly Valves** **Providing and fixing the following Butterfly Valves with body, seat, disc, liner, bearing, shaft, handle, gear assembly etc.**		
676.1	150 MM	18.000	Nos.
676.2	100 MM for floor taping	6.000	Nos.
676.3	80 MM for floor taping	2.000	Nos.
676.4	65 MM	1.000	Nos.
676.5	50 MM	42.000	Nos.
676.6	40 MM	22.000	Nos.
677	**Motorized Butterfly Valves** **Providing and fixing the following motorized butterfly valves** **BUTTERFLY VALVE WITH ON/OFF TYPE MOTORIZED ACTUATOR Single phase 220V with limit switches, C I body & PN 16 pressure rating SS Disc & shaft of Feedback, BMS Compatible for chilled water circulation as specified duly insulatated of following sizes as per specification and drawings. Cost should include necessary control wire (minimum size 1.5 sq.mm) . The differential pressure function shall be a Flow Sensor, BMS Compatible with flow details and flow has to be measured and set by the OEM/supplier at the time of commissioning**		

677.1	150 MM	3.000	Nos
678	**Balancing Valves** **BALANCING VALVE WITH BUILT IN MEASURING FACILITY with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.**		
678.1	150 MM	9.000	Nos
678.2	100 MM FOR FLOOR	5.000	Nos
678.3	80 MM FOR FLOOR	1.000	Nos
679	Non-Return Valves Providing and fixingthe following Non-Return Valve with body, seat, disc, liner, bearing, shaft, handle, gear assembly etc. 150 MM	6.000	Nos
680	Suction Guide Providing and fixing of suction guide of following sizes in the inlet of chilled water pumps 150 MM	6.000	Nos
681	**Y Strainer** **Providing and fixing of Y Strainer of following sizes in the inlet of air handling units, pumps,Chillers**		
681.1	150 MM	9.000	Nos
681.2	80 MM	1.000	Nos
681.3	65 MM	1.000	Nos
681.4	50 MM	21.000	Nos
681.5	40 MM	11.000	Nos

682	Pipe Flexible Connection Providing and fixing of rubber flexible connection of on pump outlet complete as per specifications and drawings. **150 MM**	18.000	Nos
683	Pressure Gauges Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	108.000	Nos
684	Thermometers Providing & fixing in position the mercury in glass industrial type thermometers.	96.000	Nos
685	Flow Switches Providing and fixing water flow switch on chilled water outlet complete as per specifications and drawings.	3.000	Nos
686	Automatic Air Vents Providing and fixing auto airvent purging valve complete as per specification and drawings.	10.000	Nos
687	**SUB HEAD 'C' - AIR DISTRIBUTION WORKS**		
688	**Ducting** **Supply, fabrication, installation, balancing and commissioning of factory fabricated GI sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings of following gauges as per SMACNA standard:-**		
688.1	Thickness 24 G sheet	250.000	SQM
688.2	Thickness 22 Gsheet	195.000	SQM
688.3	Thickness 20 G sheet	15.000	SQM
689	**Supply, fabrication, installation, balancing and commissioning of site fabricated GI sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings of following gauges as per IS standard:-**		

689.1	Thickness 24 G sheet	90.000	SQM
689.2	Thickness 22 Gsheet	60.000	SQM
689.3	Thickness 20 G sheet	15.000	SQM
690	**Pre-insulated Ducting (Air Conditioning)** **Supplying, fixing smart PIR Panels CFC & HCFC free , Embossed Aluminium Foil of 80 Micron on both the side, 20 mm thick** **Anti Fungal and Anti Microbial with Pin holes on both the sides. Thermal Conductivity = 0.019 W/mk of SMART Preinsulated Panels 20mm/30mm thick with both sides Embossed Aluminium foil of 80 - 80 Micron(Anti microbial, Anti fungal, Anti Dust & Anti Rust coating & UV protection STARBOND 30 -36 Coating) and close cell not less than 95% Rigid Cellular foam insulation of thickness as specified below and material shall be Class O as per BS 476 Part 6 & 7, with Density of 48kg/m3 and should have Thermal Conductivity 0.019 W/mK , Water absorption shall be not more than 0.03% as per EN 13403 standard with 2 hours Fire Rating STARCOAT CRC complying BS476 Part 6,7,20 & 24 as per CBRI for vertical and horizontal duct. The ductwork should be capable of handling pressures upto 2000 Pascals.** **The joint between the ducts shall be done by means of Polymer slide in type joint between the ducts with New Advanced Gasketed Bayonet(maufacture make) and shiplap joints with Tiger Clamp and Special Tape manufactured approved for ducts with sizes below 400mm only for zero leakages. Duct supports to be provided at regular intervals.ENIFIX 550 adhesive is recommended for Preinsulated Panel insulation.**		
690.1	20 mm Thickness (Internal Ducting)	1650.000	SQM

691	**Supply, installation, balancing and commissioning of SMART Preinsulated Panels 30mm thick with both sides Embossed Aluminium foil of 200 - 200 Micron(Anti microbial, Anti fungal, Anti Dust & Anti Rust coating & UV protection Coating - Starbond 30 -36) and close cell not less than 95% Rigid Cellular foam insulation of thickness as specified below and material shall be Class O as per BS 476 Part 6 & Part 7, with Density of 48kg/m3 and should have Thermal Conductivity 0.019 W/mK , Water absorption shall be not more than 0.03% as per EN 13403 standard with 2 hours Fire Rating Starcoat CRC coating complying BS476 Part 6,7,20 & 24 as per CBRI for vertical and horizontal duct. . The ductwork should be capable of handling pressures upto 2000 Pascals.** **The joint between the ducts shall be done by means of Polymer slide in type joint between the ducts with New Advanced Gasketed Bayonet(maufacture make) and shiplap joints with Tiger Clamp and Special Tape manufactured approved for ducts with sizes below 400mm only for zero leakages. Duct supports to be provided at regular intervals. ENIFIX 550 adhesive is recommended for Preinsulated Panel insulation.**		
691.1	30 mm Thickness (External Ducting)	10.000	SQM
692	Supply, installation, testing & commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications.	7.000	SQM
693	**Supply, fixing and commissioning of powder coated extruded aluminum grilles / diffuser complete with nuts, bolts, screws etc. as per approved drawings and specfications.**		
693.01	Supply & fixing of powder coated extruded aluminum Supply Air Grilles with aluminium volume control dampers as per specfications.	15.000	SQM
693.2	Supply & fixing of powder coated extruded aluminum Return Air Grilles with louvers but without volume control dampers as per specfications.	30.000	SQM
693.3	Supply & fixing of powder coated extruded aluminum exhaust air diffuser of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removal core.	12.000	SQM
693.4	Supply & fixing of powder coated extruded aluminum supply air diffuser of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removal core.	70.000	SQM

693.5	Supply & fixing of powder coated extruded aluminum return air diffuser of powder coated aluminium without aluminium volume control dampers with anti smudge ring & removal core.	110.000	SQM
693.6	jet diffuser with volume control damper	6.000	Nos
693.7	Supply, installation, testing and commissioning of anodised aluminium Fresh / exhaust air louvers with bird screen, as per specifications and drawings.	10.000	SQM
693.8	Supply, installation, testing and commissioning of fire rated canavas cloth connection as per specifications and drawings.	67.000	Nos
693.9	Supply, installation, testing and commissioning of the NON RETURN/Back draft Damper rated canavas cloth connection as per specifications and drawings.	15.000	SQM
693.10	SOUND ATTENUATORS :- Suuply, installation, testing & commissioning of sound attenuators to reduce noise in the duct. It is to be madd of GI type rectangular with 150mm wide air gaps and 75mm thick side in accoustic performance and construction as per specification & drawings.	20.000	Nos
694	**Supplying, installation, testing and commissioning of fire dampers, the blades and frame shall be min. 1.6 mm thick GI and factory fitted in a sleeve made out of 1.6 mm thick GI of min. 400 mm long, as & where required, of required sizes including control wiring. The damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal. CBRI tested and certified for 90 minute fire rating etc. complete as required and as per specifications. (Total assembly should be UL listed)**		
694.1	Fire damper	12.000	SQM
694.2	Actuator	14.000	Nos

695	Duct Insulation Closed cell, Fire retardant, self extinguishing type crossed linked polyethylene insulation density not less than 24 Kg/sqM, 'K' value not be less than 0.031 W/mK with adhesive ENIFIX 530 and adhesive tape etc. on ducts complete as per specification and drawings. 10 MM thick	1.000	SQM
696	**Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m3, with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound ENIFIX BA - 60 adhesive etc. complete as required and as per specifications.**		
696.1	25 MM thick (for indoor ducts)	60.000	SQM
696.2	Supplying, fixing acoustic lining on wall and ceiling of AHU rooms with 50mm thick, density 32 kg/cu.m resin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25X50X50X50X25 mm made out of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80 mm perforated aluminium sheet, CPRX compound ENIFIX BA - 60 adhesive etc. complete as required and as per specifications.	80.000	SQM
697	Underdeck Insulation Providing and fixing of crossed linked polyethylene class "O" insulation 15 mm thick fire retardand, self extingushing type, density not less than 24 Kg/sqM, 'K' value not more than 0.028 Kcal/degC for underdeck insulation with recommended ENIFIX 530 adheisve for better adhesion.	1.000	SQM
698	**Expansion tank**		
698.1	Supply, Installation, Testing of open type expansion tank of MS Construction made of 6 mm thick mild steel sheet duly insulated with 50mm thick T.F quality expended polystyrene of 24 kg/cum density with adhesive ENIFIX BA 60 and covered with a layer of 120 gm/sqm polythene sheet (vapour barrier) and finally cement plastered over chicken wire netting of 24 gauge and complete with vent and outlets for system connection over flow and drain 40 mm dia. Make up connection with float valve drain valve and incoming line valves, vent connections, valves and fittings as required. (OPEN TANK)	1.000	No

	500 LTRS		
699	**Drain Piping** **G. I. drain piping of 'B' Class complete with fittings, supports, valves of 6 mm thick closed cell elastomeric insulation as per specifications and drawings.** **Providng and fixing pipes with all necessary fittings, supports and insulation.**		
699.1	40 MM	200.000	RM
699.2	32 MM	100.000	RM
699.3	25 MM	125.000	RM
700	**Part-"D" - Ventilation**		
701	**Axial Flow Fans for Exhoust Air** **Supply, Installation, Testing and Commissioning of AMCA certified ceiling hung type Exhaust air Tube Axial flow fan having 20 mm WG Static Pressure of following capacity with MS casing and aluminium alloy impellers with aero-foil sections, blades, the impeller directly driven by TEFC induction motor suitable for 415 V ± 10 %,50 Hz, 3 Phase,1400 RPM of class 'H' insulation, TP isolator with MS enclosure box etc. complete as required and as per specifications . Fan and Motor should be VFD compatible & Class IE-03 Efficiency , Fan Should be CE certified** **ALL FLOOR** **Exhaust Air Fan**		
701.1	2500 CFM @ 25 mm wg	2.000	Nos
701.2	6000 CFM @ 25 mm wg	2.000	Nos

701.3	6500 CFM @ 25 mm wg	2.000	Nos
701.4	7000 CFM @ 25 mm wg	2.000	Nos
701.5	12000 CFM @ 25 mm wg	1.000	Nos
701.6	13000 CFM @ 25 mm wg	1.000	Nos
701.7	16000 CFM @ 25 mm wg	2.000	Nos
702	**Axial Flow Fans for Fresh Air** **Supply, Installation, Testing and Commissioning of AMCA certified ceiling hung type Supply air Tube Axial flow fan having 20 mm WG Static Pressure of following capacity with MS casing and aluminium alloy impellers with aero-foil sections, blades, the impeller directly driven by TEFC induction motor suitable for 415 V ± 10 %, 50 Hz, 3 Phase, 1400 RPM of class 'F' insulation, TP isolator with MS enclosure box etc. complete as required and as per specifications .Motor should be VFD compatible & Class IE-03 Efficiency , Fan Should be CE certified**		
702.1	6000 CFM @ 25 mm wg	2.000	Nos
702.2	6500 CFM @ 25 mm wg	2.000	Nos
702.3	7000 CFM @ 25 mm wg	2.000	Nos
702.4	12000 CFM @ 25 mm wg	1.000	Nos
702.5	13000 CFM @ 25 mm wg	1.000	Nos
702.6	16000 CFM @ 25 mm wg	2.000	Nos
702.7	4000 CFM @ 15 mm wg FOR CORRIDOR	4.000	Nos

703	**Inline Fans** **Supplying, installing, testing and commissioning of AMCA certified Inline Fans in 120GSM galvanized steel sheet construction complete as per technical specifications.** **The scope of supply includes all accessories including flanges, supports, Baffels, flexible canvass connections, vibration mountings, making coutout in the wall and finishing the same upto the satisfaction of site incharge, Powder coated MS stand/support work etc complete in all respects.F class of insulation shall be considered for the electrical motor.**		
703.1	400-500 CFM @ 15 mm wg	16.000	Nos
703.2	100-300 CFM @ 15 mm wg	5.000	Nos
704	Propeller Fan Supply, Installation, Testing & Commissioning of Propeller type exhaust air fans suitable for following capacities complete with electric motor suitable for operation at 230 V+ 10%,50 Hz, 1 phase AC supply ,graivty louvers of the following capacities. 225 MM Dia	1.000	Nos
705	**PRESSURIZATION FANS** **Supply, Installation, Testing and Commissioning of Axial flow fan suitable for outdoor application of following capacity with powder coated M.S. casing and aluminium alloy impellers with high efficiency (IE-3) aero-foil sections, blades, the impeller directly driven by TEFC induction motor (motor should be of high efficiency, suitable for 3 Phase 50 Hz 415 V ± 10 %,1400 RPM of class 'F' insulation etc. complete as required and as per specifications (40 mm Static Pressure WC) (For Pressurization of lift lobby, lift well, stair). Isolator with MS enclosure box should be Provided.**		
705.1	9700 CFM for pressurization of Lift Lobby	3.000	Nos
705.2	10000CFM for pressurization of Lift Well	6.000	Nos
706	**Part "E": Electrical Works**		

707	**Supply, installation, testing and commissioning of main panel boards made of 2.0 mm thick steel sheet duly powder coated complete with voltmeter, ammeter, indicating lights, selector switch, incoming/ outgoing isolators, Voltage operated single phase preventor , CTS contactors, A/M Switch for remote controls operation, BMS Compatible complete as per specifications and drawings and as required.** **NOTE:-** **A fire detection relay module for tripping of AHU/FAN motor on receiving fire signal & fire damper interlocking.**		
708	**Main A.C. Panel-P1** Incomer 1 Nos. 630 Amps EDO ACB TP+NL incoming (drawout type) 1 No. 900 Amps aluminium conductor bus bar duly sleeved 1 No. electronic energy meter with CTs. 1 No. Ammeter with ASS & CTs. 1 No. voltmeter with VSS. 3 Nos. phase indicating lamps Outgoing 3 Nos. 300 Amps TP+NL MCCB with rotary Screw type operated handle outgoing for chillers.(1 stand by) 1 No. Ammeter with ASS & CTs. 2 Nos. ON/OFF indicating lights 3 Nos. 32 Amps MCB TP+NL outgoing for primary chilled water pumps with 5.5 KW motor (1 standby) 3 Nos. 40 Amps MCB TP+NL outgoing for secondary chilled water pumps with 9.0 KW motor (1 standby) 1 No. 63 Amps MCCB TP+NL outgoing for spare 3 Nos. automatic star delta starter for 5.5 KW motor of primary chilled water pumps (1 standby) All starter shall have following accessories : 1 No. overload relay 1 No. Ammeter with ASS & CTs. 1 No. single phase preventer VSP-2. 2 Nos. ON/OFF indicating lights 2 Nos. ON/OFF push buttons	1.000	Set

709	**Panel- 2 (Liftwell Pressurization)** 1 No. 16 Amps TPN MCB 10 KA Incoming for Lift Pressurization Fan 1 No. voltmeter with selector switch with control MCB 1 Set of RYB indication lamps 1 No. of DOL starter for 2.2 KW motor 1 No. single phase preventer VSP-2. 1 No. Ammeter with C.T.'s Each star-delta/DOL starter consists of current operated MN type over load relay, contactor, push button, ON/OFF indication light	6.000	Sets
710	**Panel- 3 (Liftwell Lobby)** 1 No. 16 Amps TPN MCB 10 KA outgoing for Lift Lobby Fan 1 No. voltmeter with selector switch with control MCB 1 Set of RYB indication lamps 1 No. of DOL starter for 2.2 KW motor 1 No. single phase preventer VSP-2. 1 No. Ammeter with C.T.'s Each star-delta/DOL starter consists of current operated MN type over load relay, contactor, push button, ON/OFF indication light	3.000	Sets
711	**Panel - 4 (GROUND TO THIRD FLOOR)** OUTGOING (FAN) 1 Nos. 16 Amps MCB outgoing for 1.5 TO 2.2 KW motor 1 No. DOL Starter 1 No. single phase preventer VSP-2. 1 No. Voltmeter 1 No. ammeter 2 Nos indicating lights 2 Nos. Push buttons 3 Nos Phase indicating lights	14.000	Sets
712	**Panel - 5 (GROUND TO THIRD FLOOR)** OUTGOING (FAN) 1 Nos. 32 Amps MCB outgoing for 3.7 KW motor 1 No. DOL Starter 1 No. single phase preventer VSP-2. 1 No. Voltmeter 1 No. ammeter 2 Nos indicating lights 2 Nos. Push buttons 3 Nos Phase indicating lights	8.000	Sets

713	**Panel -6 (AHUs)** OUTGOING 1 No. 16 Amps MCB 10 KA for 0.37-2.2 KW motor 1 No. DOL Starter 1 No. single phase preventer VSP-2. 1 No. Voltmeter 1 No. ammeter 2 Nos indicating lights 2 Nos. Push buttons 3 Nos Phase indicating lights	40.000	Sets
714	**Panel -7 (AHUs)** OUTGOING 1 No. 16-32 Amps MCB 10 KA for 3.7-5.5 KW motor 1 No. DOL Starter 1 No. single phase preventer VSP-2. 1 No. Voltmeter 1 No. ammeter 2 Nos indicating lights 2 Nos. Push buttons 3 Nos Phase indicating lights	7.000	Sets
715	**Weather Proof isolators for outside equipments.** Supply, installation, testing and commissioning of out door weather proof switch box of continuous welded construction, fabricated out of 2 mm thick G.I. sheet complete with water tight gasket with front openable and lockable door including earthing, painting, glands, danger boards etc. suitable for mounting on wall with M.S. angle iron frame of size 40x40x6 mm consisting of relevant I.S. specifications and drawings. 80 Amps TP+NL Isolator for outside equipments.	2.000	Sets
716	**Providing, fixing, and termination of PVC insulated armoured aluminium conductor cables from main panel boards to various equipments and from sub-panel to AHU/Blowers etc. through walls/ceiling with appropriate clamps and fixing arrangements, termination, glands cable tray etc. as per specifications and drawings.**		
716.1	3 1/2 C - 185 mm2	1.000	RM
716.2	3 1/2 C - 120 mm2	80.000	RM
716.3	3 C - 50 mm2	20.000	RM

716.4	3 C - 25 mm2	60.000	RM
716.5	3 C - 16 mm2	160.000	RM
716.6	3 C - 10 mm2	120.000	RM
716.7	3 C - 6 mm2	80.000	RM
716.8	3 C - 4 mm2	60.000	RM
717	**Earthing**		
717.1	Providing and fixing 25 mm x 5 mm G.I. strip on surface or in recess for earth connection etc. complete as required.	450.000	Mtr
717.2	Providing and fixing 6 SWG dia GI wire on surgace or in recess for loop earthing alongwith the existing surface/ recessed conduit/ submain wiring/ cable as required.	450.000	Mtr
718	**Cable Tray** **Fabricating and installing perforated MS cable trays including horizontal and vertical bends, reducers, tees cross members and other accessories as required and duly suspended from the ceiling with M.S. suspenders and including painting etc. as required.**		
718.1	100 mm x 50 mm x 1.6 mm	350.000	RM
718.2	300 mm x 62.5 mm x 1.6 mm	225.000	RM
719	**SUB HEAD 'F' - CHILLER PLANT MANAGER**		
720	**Chiller Plant Optimizer/ Manager**		

720.1	**Supply, Installation, testing and commissioning of Chiller plant optimizer unit shall have stand alone control algorithm with 10 inch graphical touch screen to control all chillers (Air Cooled 5nos)and ancillary equipment having function for automatic smooth start and stop the entire chiller plant without any ON/OFF hunting, Maintaining equal run time of chillers and ancillary equipments, automatic turning off the equipment when it is not needed, easily enable/disable equipment in program of maintenance time if required, data logging for the temperature, Pressure, flow, TR, Kw/TR etc., alarm logging for equipment failure, low temperature trip protection for condenser circuit, minimising the by pass flow with maintaining flow parameters, optimization of pumping energy of variable primary/secondary/condenser pumps. Best possible balance between compressor energy consumption and the energy required to reduce condensing pressure with changing outdoor condition, system must have Modbus connectivity to give the data to third party BMS. Required sensors/flow meter/water DPT/bypass valve/motorized isolation valve shall be in scope of CPM supplier**		
720.2	Plant Machinery as under: Air cooled Chiller 250TRx 5nos. Primary Pumps 5nos. Secondary variable Pumps 5nos. Workstation PC Pentium IV computer 3000 Mhz with 500 GB hard disk,17" TFT monitor, 104 windows key board, mouse,serial and parallel ports WITH 600 DPI colour ink jet printer. This must have software integration on Chillers with 3rd party interface avaiable on Bacnet with accessories like Transformer, MCB, internal wiring and Relays with bases complete as per specifications.	1.000	Lot
721	**FIRE FIGHTING WORK**		
722	**SUB HEAD - I - (WET RISER SYSTEM - PUMPING EQUIPMENTS)**		

723	**Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required :** **(a) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.** **(b) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.** **(c) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.** **(d) Suitable cement concrete foundation duly plastered with anti vibration pads.**		
723.1	2280 lpm at 88 m Head	2.000	Set
724	**Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment with Batteries, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required.** **M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. Suitable cement concrete foundation duly plastered and with anti vibration pads.**		
724.1	2280 lpm at 88 m Head	1.000	Set

725	**Supplying, installation, testing and commissioning of electric driven pressurisation pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS : 1520. Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS : 325. M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. Suitable cement concrete foundation duly plastered and with anti vibration pads.**		
725.1	180 lpm at 88 m Head	2.000	Set
726	**Supplying, Fabricating, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizesas approved by architect and complete in all respect..:**		
726.1	2 Meter high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump. (Valve Make -Zoloto/Sant/Eqv.) (Paint Make:-Asian / Burger/ Eqv.)	1.000	each
727	Supplying and fixing air realease valve made of 25 mm dia on top and flanged connection to riser with required accessories, paintingwith synthetic enamel paint and after One coat of primer of approved shade as required. (MAKE - ZOLOTO/SANT)	3.000	each
728	**SUB HEAD - II - (HYDRANTS & SPRINKLER SYSTEM)**		
729	**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 :**		
729.1	Single headed Stainless steel	15.000	Each
730	**Supplying and fixing Single headed external yard hydrant valve with 1 No. 63 mm dia instantaneous FM Gunmetal/Stainless Steel coupling and cast iron wheel, ISi marked, conforming to IS 5290 (type A) with blank Gunmetal/Stainless Steel cap and chain as reauired :**		

730.1	Single headed Stainless steel	14.000	Each
731	**Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforminq to IS 636 (type-A) as required :**		
731.1	Stainless Steel (Grade 304)	58.000	Set
732	**Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required.** **- 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585** **- 20 mm nominal internal dia gun metal globe valve & nozzle** **- Drum and brackets for fixing the equipmets on wall.** **- Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe & Socket**		
732.1	30m	15.000	Each
733	**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 :**		
733.1	Stainless Steel (Grade 304)	29.000	Each
734	**Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required :**		
734.1	2 way-100 mm dia M.S. Pipe	1.000	Set
734.2	4 way-150 mm dia M.S. Pipe	1.000	Set
735	**Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories.**		
735.1	Pendent Sprinkler	840.000	Set
735.2	Upright Sprinkler	840.000	Set
735.3	Horizontal side wall sprinkler	39.000	Set

736	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	7.000	Each
737	**Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required.**		
737.1	100mm dia	1.000	Set
737.2	150mm dia	9.000	Set
738	**Providing, fixing, testing & comrnissioninq of installation control valve of cast iron body, brass/bronze working parts comprising of water motor alarm, bronze seat clapper, clapper arm and hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc of follwing sizes as required**		
738.1	150mm dia	3.000	Set
739	**Supplying, installation, testing & commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, support channel, stockbar of following sizes comolete as reauired.**		
739.1	1500mm	840.000	Set
740	Providing, installation, testing & commissioning of adjustable rosette plate for 15mm dia in white finish UL Listed or FM approved complete as required.	840.000	Each
741	Providing and fixing weather proof lockable cabinet of size not less than 0.75 x 0.6 x 0.25 mtr made out of MS sheet 2mm thick having central opening and 6 mm thick glazed glass doors (Two nos.) suitably marked on the outside with the letters "FIRE HOSE" including necessary locking arrangement and shall be painted with one coat of primer and two coats of synthetic enamel paint of approved shade as required as per specificationsas approved by architect and complete in all respect.. (Make - Exflame)	14.000	Each

742	**SITC weather proof M.S cabinet size 2100 mm x 1200 mm x 600 mm** **Supplying, installation, testing and commissioning of weather proof M.S cabinet size 700 mm x 600 mm x 300mm deep fabricated from 1.6mm thick M.S. sheets and M.S angle 40mmx40mmx6mm complete with glass, locking arrangements to accommodate the followingas approved by architect and complete in all respect.**		
742.1	The cabinet shall be painted with one coat of primer and 2 coats of synthetic enamel paint of approved shade.	15.000	Each
743	MS Fire Hose Cabinet (750 X 600 X 300)mm, Fabricated from 16 Gauge MS Sheet, 5mm Thick Glass , Double Door with Locking Arrangement , powder coated (Make-Exflame) Rates are only for hose box	15.000	Each
744	**SUB HEAD - III - (PIPING, VALVES AND ACCESSORIES)**		
745	**SLTC of M.S. pipe on surface** **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 after One coat of primer required shade complete as required :**		
745.01	25 mm dia	1320.000	Metre
745.2	32 mm dia	14.000	Metre
745.3	40 mm dia	752.000	Metre
745.4	50 mm dia	486.000	Metre
745.5	65 mm dia	367.000	Metre
745.6	80 mm dia	155.000	Metre
745.7	100 mm dia	168.000	Metre
745.8	150 mm dia	1896.000	Metre
745.9	200 mm dia (wall thickness 6.3 mm)	27.000	Metre
745.10	250 mm dia (wall thickness 6.3 mm)	9.000	Metre

746	**Providing, laying, testing & commissioning of 'B' class heavy duty G.I. pipe conforming to 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 after One coat of primer of required shade complete as required :**		
746.1	50mm	62.000	Metre
747	**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, gasket conforming to IS 13095 of following sizes as required :**		
747.1	50 mm dia	6.000	Metre
747.2	65 mm dia	1.000	Metre
747.3	80 mm dia	31.000	Nos
747.4	100 mm dia	3.000	Nos
747.5	150 mm dia	17.000	Nos
748	**Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/gun metal seat, ISi marked complete with nuts, bolts, washers, gaskets and conforming to IS 780 of following sizes as required :**		
748.1	65 mm dia	2.000	Nos
748.2	80 mm dia	2.000	Nos
748.3	150 mm dia	5.000	Nos
748.4	200 mm dia	5.000	each
749	Supplying and fixing orifice plate made out of 6 mm thick stainless steel (Grade 304) with orifice of required size to be fitted between flange & landing valve of external and internal hydrants to reduce pressure at the outlet to the level of 3.5 kg/cm2 complete as required.	15.000	Each
750	**Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :**		

750.1	65mm dia	2.000	Each
750.2	100mm dia	4.000	Each
750.3	150mm dia	6.000	Each
751	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0-16 Kg / cm2 .as approved by architect and complete in all respect.. (MAKE:H-GURU / EQV.)	35.000	Each
752	Providing, Installation, Testing and Commissioning of Gun Metal / Bronze Ball Valves screwed ends of following sizes as required. (For sprinkler drain)as approved by architect and complete in all respect. (MAKE - ZOLOTO , SANT) **25 mm dia**	10.000	Each
753	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange. **150 mm dia**	2.000	Each
754	Supplying and fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926as approved by architect and complete in all respect. (MAKE - ZOLOTO , SANT)	29.000	Each
755	**Providing & fixing double flanged Metallic expansion with M.S. fixed flanges (PN-1.6) joint (suitable for system test pressure) of standard length as per manufacturers specs including rubber gaskets, flanges, nuts, bolts and washers complete as required as per specificationsas approved by architect and complete in all respect. (Make :- Electroflex / Eqv.)**		
755.1	65 mm dia	2.000	Each
755.2	80 mm dia	2.000	Each
755.3	150 mm dia	3.000	Each
755.4	200 mm dia	3.000	Each
756	**SUB HEAD - IV - (FIRE EXTINGUISHERS)**		

757	**Supply, installation, testing and commissioning of ISI marked (IS:15683:2006) portable chemical fire extinguisher halon free, 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 specificationsas approved by architect and complete in all respect.**	31.000	Each
758	**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 : 15683:2006as approved by architect and complete in all respect.**		
758.1	4.5kg capacity cylinder	31.000	Each
759	Fire Extinguisher, Mechanical Foam Type Capacity 45 ltr, ISI Marked , IS :16018 (Wheeled Type) (Make- Exflame)	1.000	Each
760	**Providing & fixing foot valve are installed in side of the pumps to avoid flow reversal from to the sump, in order to maintain pump priming.**		
761	150 mm dia(Kirlosker)	2.000	Each
762	**COMMON EFFLUENT TREATMENT PLANT**		
762.1	Supplying Installation And commissioning of Equipmqnts for Sewwerage Treatment Plant of 135 m3/day (85+50) . The main source of effluent is wastewater resulting from toilets, kitchens, pantries, water washroom and Factory, restrict to mentioned blow inlet Parameter. The scope of work includes detail design, drawing, erection, commissioning as per MBBR including tertiary treatment type Common Effluent Treatment Plant complete with necessary equipment, interconnecting piping network etc.		

763	The Details of electromechanical equipments are as follows The CETP design based on the following parameters: Daily average flow: 135 M3/Day PH : 6.5 to 7.5 BOD : Up to 300 S. Solids : Up to 200 COD : Up to 400 Oil & Grease : 20 mg/l Sewage discharge standard after treatment :- PH : 6.5 to 7.5 BOD : Not more than 30 mg/l S. Solids : Not more than than 20 mg/l COD : Not more than 50 mg/l COD : Not more than 10 mg/l Parameters/specification		
764	**Bar Screen :** Supplying, installing, testing & commissioning of 1 nos manual bar screen of particular size having provision for lifting arrangement etc. complete as required. Size : 600mm X 800mm MOC : MSEP Type : Manual operated coarse bar screen		
765	**Sewage Feed Pumps** Type : Non Clog Submersible Qty. (Nos.) : 2 (1 duty+1 Standby) Capacity (m3/hr) : 3.6 m3/hr Head (m) : 10-12 m Selected model power : 0.75 KW Make : Kirloskar		
766	**Air Blower For Collection, MBBR , Sludge tank & Treated water tank** Qty. (Nos.) : 3 (2 duty+1 Standby) Make : AKASH/EVEREST/USHA/Equivalent Capacity : 95 m3/hr Head (m) : 4 MWC Power : 3.7 kw		

767	**Fine Bubble air diffusers (Retrieval type) for MBBR Tank** Qty. (Nos.) : 1 Lot as required Type: Fine Bubble Diffuser Size : 90 mm OD x 1000 mm Length Make : SCI		
768	**Coarse Bubble air diffusers for Collection, Sludge & Treated water tank** Qty. (Nos.) : 1 Lot as required Type: Coarse Bubble Diffuser Size : 80 mm Dia Make : SCI		
769	**MBBR Media** Qty. (Nos.) : 1 Lot as required MOC: PP Surface area : 400m2/m3 Make : GFT/Cooldeck/Equiv		
770	**Tube Pack Media** Qty. (Nos.) : 1 Lot as required Type : Square Tube Type MOC: PVC Make : GFT/Cooldeck/Equiv		
771	**Dosing System** Dosing pump : 01 No. Make : 0-6 lph , E-Dose Dosing Tank: 01 No, 100 lit, 0.03 kw		
772	**Filter Feed Pump** Type : Horizontal , Self priming, Monoblock pump Qty. (Nos.) : 2 (1 duty+1 Standby) Capacity (m3/hr): 5.6 m3/hr Head (m): 20-25 m Selected model power: 1.5 KW Make: Kirloskar.		

773	**Sand filter in FRP** Quantity : 01 no. Type : Vertical Down flow Valve: Manual Operated Diameter: 30" Inch HOS: 72" Inch Filter Material: FRP Vessel Make: Pentair Frontal piping: In UPVC Valve: Multiport Accessories: Pebbles, Gravels and Graded Quartz Sand		
774	**Sand filter in FRP** Quantity : 01 no. Type : Vertical Down flow Valve: Manual Operated Diameter: 30" Inch HOS: 72" Inch Filter Material: FRP Vessel Make: Pentair Frontal piping: In UPVC Valve: Multiport "Accessories: Pebbles, Gravels, Graded Quartz Sand and Carbon IV 550"		
775	**Sludge Pump** Duty : To feed sludge to SHT Type : Horizontal , Self priming, Monoblock pump Qty: 2 nos. (1 duty + 1 Standby) Capacity: 1 m3 /hr Head: 10 m Power: 0.75 kw Make: Kirloskar		

776	**Interconnected piping (within battery limits)** Quantity : 1 Lot, As required Gravity piping : UPVC, Pressure piping: UPVC, sch 40,ASTM D178/ HDPE Make: Prince / Finolex/Astral. Fittings: UPVC solvent jointed Air Piping: MS Make: Tata/Jindal/Eqv.		
777	**Valves (Manual)** Quantity : 1 Lot, As required Pump Discharge : Gate – CI , Screwed end – Make - Aarko "Discharge Non return: Wafer – M.S.body, M.S.disc, Nitrile - Make - Marck" "Bypass/ Tank Drain/Sludge drain: Gate – CI , Screwed/Flange end – Make - Aarko" Sampling valves/Filter pump valves: Ball valve –PVC /PP – Make – Parth/Prince		
778	**Electrical Control Panel** Quantity : 01 no. Operation : Auto/Manual operation Type: Non – Compartmentalized		
779	**Electrical accessories & cabling** Flexible –PVC copper cables : 01 Lot Make : Polycab		
780	**Instruments** Level Switch : 01 Lot, MOC-PP, As required Pressure Gauge : 01 Lot, As required		
780.1	**COMMON EFFLUENT TREATMENT PLANT AS DESCRIBED ABOVE(SR NO 762 TO 780)**	1.000	JOB
781	**RAIN WATER HARVESTING PIT**		
782	**EARTH WORK**		

783	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed. **All kind of Soil**	695.000	CUM
784	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.	306.000	CUM
785	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials. **All kinds of soil (from 1.5 mtr to 3.0 mtr)**	208.330	CUM
786	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	44.000	CUM
787	**CONCRETE WORK**		
787.1	**Providing and laying in position cement concrete of specified grade excluding the cost of centering and shttering - All work up to plinth level**		
787.2	1:4:8 (1 Cement : 4 coarse sand (zone-III) dervied from natural sources : 8 graded stone aggregate 40 mm nominal size) dervied from natural sources	38.000	CUM
788	**BRICK WORK**		
788.1	**Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:**		
788.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	23.000	cum
789	**MISCELLANEOUS WORK**		
789.1	**Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata,preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 metre & upto 150 metre depth below ground level.** **All types of soil**		

789.11	300 mm dia	200.000	Metre
790	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc.all complete, for all depths, as per direction of Engineer –in-charge **100 mm nominal size dia**	200.000	Metre
791	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. **100 mm nominal size dia**	100.000	Metre
792	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of: **100 mm dia**	5.000	Each
793	**NON SCHEDULE WORK**		
794	Double layer of Geo textile Non Woven (400 GSM):- To avoid invasion of soil, provide stability to the tank, and improve quality of water within the tank with tensile strength. (40 meter depth)	784.000	SQM
795	Supply of Rain Maxx Tank modules (Honeycomb design on each plate) made up of recycled polypropylene. These modules are made from combination of large and small plates. Each large plate should have atleast fourteen locking slots inorder to give stability to tank. These tank should have optimum connection & block stability using double lock stability.	284.000	CUM
796	Retas Makes - Supply and Installation of FRP Filter having SS 304 mesh bracket with dia 750mm and height 1000mm capable of removing particles from infllow water. FRP filter should be Griha certified under criterions 21& 18 and SVAGRIHA criterion 9. Certificate should be valid on date of installation	5.000	Nos
797	**SIGNAGE ITEM**		

798	Building Tactile Door and/or Directional Braille Signages (Sizes between 225mmx150mm till 600mmx600mm) : Design, Supply of Acrylic multilingual Braille Tactile signages - like Building entrance , Door signages, Name plates, (raised domes) signboards of minimum size 9"X6" (225x150mm) to for doors, specific areas like toilets, water, etc. & directions (without maps or drawings) , designed as per the drawings issued and having 3+2mm thick blue Acrylic non glare base plate, and 0.5mm Thick Aluminium plate at backside, with Upper Case San Serif words made of white acrylic non glare cut out letters of height 15mm raised 0.8mm above base plate and the equivalent word/s written in Hindi with Devnagri non glare acrylic letters of height 15mm raised 0.8mm above base plate. Signage to have a relevant symbol made of white cut out acrylic and raised by 0.8mm above base plate. Grade 1 Braille consisting of raised domes of 1.5 to 1.6mm dia. and spacing as per Braille standards given by GOI to be integral with the sign face and be raised 0.6 to 0.9mm above base plate.Each signboard to be fixed as per manufacturers specifications at the specified locations at a height of 1200mm from FFL and up to the satisfaction of the engineer in charge. (These rates for all sizes specific to sizes from 22.5cmx15cm upto or below of 60cmx60cm maximum dimensions, in two colour scheme only)	10.000	sqm
799	Building Tactile Floor Directory, Evacualtion maps signage: Size from 24x18 Inches /600mmx450mm till max. 48x36 inches /1200mmX900mm) Design, supply, fabrication and fixing Acrylic multilingual Braille for Layouts / Maps, Floor directories, Evacuation plans maps, etc(raised domes) signboards of size 24"x 18" or above for directions, designed as per the drawings issued and having 3+3mm thick Blue Acrylic non glare base plate (Green in case of Fire evacaution plans) with Upper Case San Serif words made of white acrylic non glare cut out letters of height 15mm raised 0.8mm above base plate and the equivalent word/s written in Hindi with Devnagri non glare acrylic letters of height 15mm raised 0.8mm above base plate. Signage to have a relevant symbol made of white cut out acrylic and raised by 0.8mm above base plate. Grade 1 Braille consisting of raised domes of 1.5 to 1.6mm dia. and spacing as per Braille standards given by GOI to be integral with the sign face and be raised 0.6 to 0.9mm above base plate.Each signboard to be fixed as per manufacturers specifications at the specified locations at a height of 1200mm from FFL and up to the satisfaction of the engineer in charge. (These rates for all sizes under or upto 60cmx60cm maximum dimensions, in two colours scheme only)	30.000	sqm

800	Night Glowing Braille embedded Tactile signs: Building Tactile Door signs, Directional signs, Floor Directory, Evacualtion maps signage: Size from 24x18 Inches /600mmx450mm till max. 48x36 inches /1200mmX900mm) Design, supply, fabrication and fixing Acrylic multilingual Braille for Layouts / Maps, Floor directories, Evacuation plans maps, etc(raised domes) signboards of size 24"x 18" or above for directions, designed as per the drawings issued and having 3+3mm thick Blue Acrylic non glare base plate (Green in case of Fire evacaution plans) with Upper Case San Serif words made of white acrylic non glare cut out letters of height 15mm raised 0.8mm above base plate and the equivalent word/s written in Hindi with Devnagri non glare acrylic letters of height 15mm raised 0.8mm above base plate. Signage to have a relevant symbol made of white cut out acrylic and raised by 0.8mm above base plate. Grade 1 Braille consisting of raised domes of 1.5 to 1.6mm dia. and spacing as per Braille standards given by GOI to be integral with the sign face and be raised 0.6 to 0.9mm above base plate.Each signboard to be fixed as per manufacturers specifications at the specified locations at a height of 1200mm from FFL and up to the satisfaction of the engineer in charge. (These rates for all sizes under or upto 60cmx60cm maximum dimensions, in two colours scheme only)	15.000	sqm
801	Stainless steel Building tactile map , Floor directories , Door signs, Directional Signs, signage: Size (Sizes between 225mmx150mm till 600mmx600mm) Design, supply, fabrication and fixing SS 304 non glare matt finish 1.2mm thick sheet with braille rasters + backside acrylic multilingual Braille (raised domes) signboards of size 24"x 18" for directions, designed as per the drawings issued and having 1.2mm SS 304 sheet + 3mm thick acrylic base plate with Upper Case San Serif words made of white acrylic non glare cut out letters of height 15mm raised 0.8mm above base plate and the equivalent word/s written in Hindi with Devnagri non glare acrylic letters of height 15mm raised 0.8mm above base plate. Signage to have a relevant symbol made of white cut out acrylic and raised by 0.8mm above base plate. Grade 1 Braille consisting of raised domes of 1.5 to 1.6mm dia. and spacing as per Braille standards given by GOI to be integral with the sign face and be raised 0.6 to 0.9mm above base plate.Each signboard to be fixed as per manufacturers specifications at the specified locations at a height of 1200mm from FFL and up to the satisfaction of the engineer in charge. (These rates for all sizes under or upto 90cmx60cm maximum dimensions, in various colours as per layout and feasbilties as per ADA norms)	16.000	sqm

802	Providing of PU Tactile Tiles Brand " Prosafe" in standard tile size of 300x300x2.5mm for "Warning tiles & Directional tiles", with square edge for tight joints and minimum gaps, made from TPU from Covestro India (Former Bayers India), Yellow colour (RAL 1026), with properitory double sided self adhesive tape, suitable for Indoor high friction, with sufficient contrast colour as per ADA norms (ISO 23599:2012 complaint) and to be used togeter as warning tiles 20-25% ratio with Directional tiles 75-80% approx , for the visually impaired persons, on the pedestrian pathway as per manufacturers design / specification and as per harmonised guidelines of MOUD Govt. of India.	350.000	sqm
803	Providing and fixing Acrylic LED Letter on the Building itself as per the Elevation & drawings provided by Architect in charge	300.000	sqft
804	**GRIHA**		
805	The contractor is responsible for overall management with GRIHA authorities, GRIHA Consultant, Design Architect and PMC for successful minimum GRIHA Three (03) Star certification of project. CDAC will only pay for the statutory fees for registrations of the project and other statutory requirements under GRIHA Certification process after submission of challans . Contractor is responsible for arranging all necessary documentations with revisions, drawings, arranging and coordinating stay, tour , site visits and site audits of GRIHA officials for successful certification of the project. CDAC will not pay any incidental expenditure in this regard.	1.000	LUMPSUM

Note:

1. **Bidders has to quote rates in commercial/price bid inclusive of all taxes including labour cess, EPF/ESI charges, GST etc.**
2. **Bidder has to quote rate on item rate basis in the respective cell.**
3. **Item Rates quoted by the tenderer shall be inclusive of carriage of materials by mechanical transport including loading, unloading complete upto site for all leads and all taxes, excise and royalty etc. in terms of tender condition.**
4. **Bidder has to quote for all items. Otherwise , bid may be rejected at the discretion of CDAC.**
4. **Details BOQ, drawing and technical special conditions is enclosed for reference.**

Signatures of the Contractor
Or Authorized Person
(With full name)
Name of Firm:
Seal of Firm:

ANNEXURES

ANNEXURE-I

AFFIDAVIT

(To be typed on Rs. 100/- non-judicial stamp paper)

I/We .....aged .....year's son of..... do hereby solemnly affirm and declare as follows for and on behalf of the Firm:

LIST OF EXISTING COMMITMENT AND ONGOING WORKS

Sr. No.	Name of Works	Client Name & Address	Work Order Value (in Rs)	Work Executed till Date (Rs)	Balance Amount of work to be completed (Rs)	Balance period to complete the works (Total months)	Work to be completed in 24 months (Rs)
					(4 - 5)		
1	2	3	4	5	6	7	8
		Balance Commitments during 24 months as per NIT				Rs	

	It is certified that the above particulars furnished are true and correct. If any information given is found to be concealed at a later date, the Contract will beterminated forthwith without prejudice to the rights thereon consequent on termination and the bidder will be blacklisted. I/We agree for debarring tendering forone year if any facts are suppressed.

SIGN AND STAMP OF BIDDER

Signature of Notary Public

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

BID CAPACITY
Name of the Work: "Integrated Construction of ……"
NIT No. :
ESTIMATED COST PUT TO TENDER :
Bid Capacity : The bidding capacity of the contractor should be equal to or more than theestimated cost of the work put to Tender. The bidding capacity shall be worked out by the following formula :
Agencies who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under: - Assessed available bid capacity = A x N x 2 - B N = Number of years rounded up to first decimal prescribed for completion of the subject contract. A = Maximum value of works executed in anyone year during last five years (up dated to the price level of current financial year with percentage stated in the PQ document). B = Value at current price level of existing commitments and ongoing works to be completed in the next 'N' years. The Bidders are requested to furnish the existing commitments on Works under execution along with stipulated period for completion of remaining for each of the work should be furnished in an affidavit on non-judicial stamp paper of value of Rupees 100/- duly certified that the particulars furnished are correct
BID CAPACITY CALCULATION BY BIDDER **SIGN & STAMP OF BIDDER**

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

Site Visit Certification **ANNEXURE-II**

Name of Tender for "Integrated Construction of ……..."		
NIT No.		
SITE VISIT REPORT		
		Date: -
1	Name of the Bidder	
	Authorized Person's Name for Site Visit	
	Id Proof	
	Email-Id	
	Contact Details	
SI NO	**DESCRIPTION**	**CONFIRMATION**
2	Site Accessibility from Road is checked	
3	Water & Electricity Availability is checked	
4	UNDERTAKING: -Authorized person has visited site before submitting the bid to assess the ground condition & working condition at site. Bidder is quoting price & responsible for any further site related consequences thereof & it is to be considered as self-declaration.	
5	We have noted all local conditions & availability of raw material for construction.	

Authorized Person of Bidder (Signed Off)
Seal of Tenderer: Date:

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

ANNEXURE III

Centre for Development of Advanced Computing

(A Scientific Society of Ministry of Electronics & Information Technology)

(Government of India)

PROFORMA OF BANK GUARANTEE IN LIEU OF E M D (BID BOND)

(Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

National Projects Construction Corporation Limited,

(Address as mentioned in Notice Inviting Tender)

In consideration of **Centre for Development of Advanced Computing**, having its Registered Office at Innovation Park, Panchavati, Pashan Road, Pune – 411008 (hereinafter called "C-DAC" which expression shall unless repugnant to the subject or context include its successors and assigns) having issued Notice Inviting Tender No…..... and M/s…..... having its Registered Head Office at…..... (Hereinafter called the "TENDERER") is to participate in the said tender for…..... Whereas C-DAC, as a special case, has agreed to accept an irrevocable and unconditional Bid Bond Guarantee for an amount of Rs… valid up to…. from the tenderer in lieu of Cash Deposit of Rs…..... required to be made by the tenderer, as a condition precedent for participation in the said tender. We the…..... (hereinafter called the "BANK") having its Registered, Office at…..... . . . ……and branch office at……. do hereby unconditionally and irrevocably undertake

to pay to C-DAC immediately on demand in writing and without demur/protest any amount but not exceeding Rs…..... Any such demand made by C-DAC shall be conclusive and binding on us irrespective of any dispute or differences that may be raised by the tenderer.

Any change in the constitution of the tenderer or the Bank shall not discharge our liability under the guarantee.

We, the… Bank, lastly undertake not to revoke this guarantee during its currency without the prior consent of C-DAC in writing and this guarantee shall remain valid upto…..... Unless a claim is made within three months from the date of expiry i.e.... (Three months after the date of expiry), we shall be relieved of our liability under this guarantee thereafter.

FOR AND ON BEHALF OF BANK

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

PLACE:
DATED:

WITNESS.
1.
2.

Seal and Signature of the Agency / Contractor

Seal and Signature
C-DAC

Annexure IV

Centre for Development of Advanced Computing

(A Scientific Society of Ministry of Electronics & Information Technology)

(Government of India)

PROFORMA OF BANK GUARANTEE (FOR PERFORMANCE GUARANTEE)
(Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

Centre for Development of Advanced Computing,

(Address as mentioned in Notice Inviting Tender)

Whereas the **Centre for Development of Advanced Computing** (hereinafter called "C-DAC" which expression shall include its successors and assigns) having awarded a work order/contract / supply order No…….. Dated …… (Hereinafter called the contract) to M/s. …..... …..... (Hereinafter called the contractor / supplier) at a total price of Rs…..... subject to the terms and conditions contained in the contract.

WHEREAS, the terms and conditions of the contract require the contractor to furnish a bank guarantee for Rs…..... (Rupees….....) being ….....% of the total value of the contract for proper execution and due fulfillment of the terms and conditions contained in the contract.

We, the Bank, (hereinafter called the "Bank") do hereby unconditionally and irrevocably undertake to pay to C-DAC immediately on demand in writing and without protest/or demur all moneys payable by the contractor/supplier to C-DAC in connection with the execution/ supply of and performance of the works/equipment, inclusive of any loss, damages, charges, expenses and costs caused to or suffered by or which would be caused to or suffered by C-DAC by reason of any breach by the contractor/supplier of any of the terms and conditions contained in the contract as specified in the notice of demand made by C-DAC to the bank. Any such demand made by C-DAC on the bank shall be conclusive evidence of the amount due and payable by the bank under this guarantee. However, the Bank's liability under this guarantee shall be limited to Rs…..…..in the aggregate and the bank hereby agrees to the following terms and conditions:-

i. This guarantee shall be a continuing guarantee and irrevocable for all claims of C-DAC as specified above and shall be valid during the period specified for the performance of the contract including the period of maintenance/warranty i.e. up to…....

ii. We, the said bank further agree with C-DAC that C-DAC shall have the fullest liberty without our consent and without affecting in any manner our obligations and liabilities hereunder to vary any of the terms and conditions of the said contract or to extend time for performance of contract by the contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by C-DAC against the contractor/supplier under the contract and

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C-DAC

Seal and Signature of the Agency / Contractor

forbear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variations or extension being granted to the contractor or for any forbearance, act or omission on the part of C-DAC or any indulgence by C-DAC to the contractor or by any such matter or thing whatsoever, which under the law relating to the sureties would, but for this provision, have effect of so relieving us.

iii. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever C-DAC may now or at any time have in relation to the performance of the works/equipment and the company shall have full re-course to or enforce this security in performance to any other security or guarantee which the C-DAC may have or obtained and there shall be no forbearance on the part of the company in enforcing or requiring enforcement of any other security which shall have the effect of releasing the Bank from its full liability. It shall not be necessary for C-DAC to proceed against the said contractor/supplier before proceeding against the Bank.

iv. This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to C-DAC in terms thereof are paid by the Bank.

v. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the bank in terms hereof, shall not be otherwise effected or suspended by reasons of any dispute or disputes having been raised by the supplier/contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial of liability by the supplier/contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to C-DAC in terms hereof.

We, the said Bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of C-DAC in writing. Unless a claim is made in writing within three months from the date of expiry of this guarantee i.e…..... (Three months after the date of expiry) we shall be relieved from all liabilities under this guarantee thereafter.
The Guarantor/Bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform and shall invariably send an advice of this Bank Guarantee to the designated bank of (C-DAC.) details of which is as under.

Sl. No.	Particulars	Details of C-DAC Bank A/c
D.	Name of Beneficiary	
E.	Unique Ref. ID (Customer ID)	
F.	Beneficiary Bank	
G.	Beneficiary Bank Branch IFSC Code	

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

H.	Beneficiary Bank Address	

Signed this …..... day of …..... at…….
For and on behalf of Bank
WITNESS.
1. _____
2. _____

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

Centre for Development of Advanced Computing

(A Scientific Society of Ministry of Electronics & Information Technology)

(Government of India)

PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE)

(Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

Centre for Development of Advanced Computing,

_____

_____

1. In consideration of the C-DAC…….....(hereinafter called "the Corporation" which expression shall unless repugnant to the subject or context include his successor and assigns) having agreed under the terms and conditions of Contract dated… made between… ……and the Corporation in connection with… (Hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs… for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to the Corporation, we the..… Bank (hereinafter referred to the "the said Bank") and having our registered office at……..... do hereby guarantee the due recovery by the Corporation of the said advance as provided according to the terms and conditions of the Contract. We……..... do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on a demand from the Corporation stating that the amount claimed is due to the Corporation under the said Agreement. Any such demand made on the…….....shall be conclusive as regards the amount due and payable by the….. . under this guarantee and……..... agree that the liability of the ….....to pay the Corporation the amount so demanded shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs…...
2. We ……. Bank further agree that the Corporation shall be the sole judge of and as to whether the amount claimed has fallen due to the corporation under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by the Corporation on account of the said advance together with interest not being recovered in full and the decision of the Corporation that

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Seal and Signature C-DAC

the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by the Corporation shall be final and binding on us.

3. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till C-DAC certify that the said advance has been fully recovered from the said Contractor, and accordingly discharges this Guarantee subject, however, that the Corporation shall have no claims under this Guarantee after the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

4. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability.

5. It shall not be necessary for the Corporation to proceed against the Contractor before

proceeding against the Bank and the Guarantee herein contained shall be enforceable against he Bank notwithstanding any security which the Corporation may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

6. We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

Dated this …..day of…....

For and on behalf of Bank

(NAME AND DESIGNATION)

Dated:

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING

(A Scientific Society of Ministry of Electronics & Information Technology)

(Government of India)

PROFORMA OF BANK GUARANTEE

(IN LIEU OF SECURITY DEPOSIT)

(Bank Guarantee shall be sent to C-DAC by issuing bank directly under registered post (A/D).

Centre for Development of Advanced Computing.

_____

In consideration of the Centre for Development of Advanced Computing., (hereinafter called "the C-DAC") which expression shall include its successors and assigns having awarded to M/s…..

(hereinafter called "the Supplier/Contractor") which expression shall wherever the subject or context so permits includes its successors and assigns) a Contract in terms inter-alia of the company's letter No…..dated….....and the Contract/Purchase Conditions of the Company and upon the condition of the Supplier/Contractor furnishing Security for the performance of the Supplier's obligations and /or discharge of the contractor's/supplier's liability under and/or in connection with the said supply contract up to a sum of Rs…..... (Rupees…..... only) We,…..... ((Hereinafter called "The Bank")

which expression shall include its successors and assigns) hereby undertake and guarantee payment to C-DAC forthwith on the same day on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to the Company under, in respect or in connection with the said contract inclusive of all the losses, damages, costs , charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by the Company to the Bank with reference to this guarantee up to and aggregate limit of Rs……..(Rupees…..only) and the bank hereby

agree with the company that:

1. This Guarantee shall be continuing guarantee and shall remain valid and irrevocable for

all claims of the Company and liabilities of Supplier/Contractor arising upto and until midnight of…..

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

2. That Guarantee shall be in addition to any other Guarantee or Security whatsoever that the Company now or at any time have in relation to the Supplier's obligations/liabilities under and/ or in connection with the said supply/contract, and the company shall have full authority to take recourse or to enforce this Security in preference to any other Guarantee or Security which the Company may have or obtain and no forbearance on the part of the Company in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its liability hereunder.
3. The Company shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Supplier's/Contractor's obligations and/ or liabilities under or in connection with the said supply/contract or to grant time and / or indulgence to the supplier / contractor or to increase or otherwise vary the prices or the total contract value or to release or to forbear from enforcement of all or any of the conditions under the said supply / contract and / or the remedies of the Company under any other security/securities now or hereafter held by the Company and no such dealings, increase(s) or other indulgence(s) or arrangement(s) with the supplier / contractor or releasing or forbearance whatsoever shall have the effect of releasing the Bank from its full liability to the Company hereunder or prejudicing rights of the company against the Bank.
4. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall

   in all respects and for all purposes be binding and operative until payment of all moneys payable to the company in terms thereof.
5. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be otherwise affected or suspended by reason of any dispute or disputes having been raised by the supplier / contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial or liability by the supplier/ contractor stopping/ preventing or purporting to stop or prevent any payment by the Bank to the Company in terms thereof.
6. The amount stated in any notice of demand addressed by the company to the Guarantor as liable to be paid to the Company by the supplier/contractor or as suffered or incurred by the Company on account of any losses or damages, costs, charges and / or expenses shall as between the Bank and the Company be conclusive of the amount so liable to be paid to the company or suffered or incurred by the company as the case may be and payable by the Guarantor to the

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

Company in terms hereof subject to a maximum of Rs ….....(Rupees ….....only),

7. Unless demand or claim under this Guarantee is made on the Guarantor in writing within three months form the date of expiry of the Guarantee i.e. up to ….…..……

The Guarantor shall be discharged from all liabilities under this Guarantee there under.

Notwithstanding anything contained herein before our liability under this guarantee is restricted to Rs. …..... (Rupees….....only).

This guarantee will expire on…..…….

Any claim under this Guarantee must be received by us within three months from the date of expiry i.e. ….....(This Date is, three months after the expiry date) and if no such claim has been received by us by that date all your rights under this guarantee will cease.

For and on behalf of the Bank

Place

Date

WITNESS:

1.

2.

GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR ANTI-TERMITETREATMENT

THIS AGREEMENT made this____ day of Two thousand _____ between M/s_____ (hereinafter called the guarantor of the one part) and CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING, (hereinafter called the C-DAC) the OWNER of the other part. Whereas this agreement is supplementary to the contract hereinafter called the contract dated_____ made between the guarantor of the one part and Centre for Development of Advanced Computing., of the other part whereby the contractor inter-alia, understood to render the buildings and structures in the said contract recited, completed, termite proof. And whereas the guarantor agreed to give a guarantee to the effect that the said structure will remain termite proof for TEN YEARS to be so reckoned from the date after the maintenance period prescribed in the contract expires.

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

During this period of guarantee the guarantor shall make good all defects and for that matter shall replace at his risk and cost such wooden member as may be damaged by termite and in case of any other defect being found, he shall render the building termite proof at his cost 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 falling which the work shall be got done by

C-DAC/ OWNER by some other contractor 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 guarantor shall be final and binding.

That if the Guarantor fails to execute the Anti-Termite treatment or commits breaches hereunder then the Guarantor will indemnify C-DAC against all losses damages, cost expenses or otherwise which may be incurred by him by reasons 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 C-DAC/ OWNER decision of the Engineer-in-charge will be final and binding on the parties.

In witness where of these presents have been executed by the guarantor_____ and by_____ for and on behalf of C-DAC on the day of month and year first above written.

Signed sealed and delivered by (Guarantor)

IN THE PRESENCE OF:

1.
2.

Signed for and on behalf of C-DAC by/ in presence of:

1.
2.

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

The agreement made this ……. Day of…….... Two thousand eight between …… (Hereinafter called Guarantor of the one part) and the C-DAC (hereinafter called the Execution Agency of the other part).

Seal and Signature

Seal and Signature of the Agency / Contractor **C-DAC**

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract), dated …… and made between the GUARANTOR OF THE ONE part and the C-DAC of the other part, whereby the Contractor, inter-alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS the Guarantor agreed to give a guarantee to the effect that the said structures will remain water and leak proof for ten years from the date of handing over of the structure of water proofing treatment

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract provided that the Guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose.

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

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

That if the Guarantor fails to execute the waterproofing or commits breach there under, then the Guarantor will indemnify the principal and his successors against all laws damage, cost, expense or otherwise which he may incur by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and/ or cost incurred by the C-DAC, the decision of the Engineer-in-Charge will final and binding on the parties.

IN WITNESS WHEREOF these presents have been executed by the Obligator and by ……. for and on behalf of the C-DAC on the day, month and year first above written.

Signed, sealed and delivered by Obligator in the presence of-

1.

2.

Signed for and on behalf of the C-DAC by _____

In presence of:

1.

2.

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

AGREEMENT FORM

This agreement made this day of (Month) (Year), between the CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING (C-DAC), having its Registered Office at Innovation Park, Panchavati, Pashan Road, Pune – 411008 (hereinafter referred to as the "C-DAC" which expression shall include its administrators, successors, executors and assigns) of the one part and M/s (NAME OF CONTRACTOR) (hereinafter referred to as the 'Contractor' which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the other part.

WHEREAS, C-DAC, has desirous of construction of (NAME OF WORK) (hereinafter referred to as the "PROJECT") on behalf of the (NAME OF OWNER/MINISTRY) (hereinafter referred to as "OWNER"), had invited tenders as per Tender documents vide NIT No. _____.

AND WHEREAS (NAME OF CONTRACTOR) had participated in the above-referred tender vide their tender dated _____ and C-DAC has accepted their aforesaid tender and award the contract for (NAME OF PROJECT) on the terms and conditions contained in its Letter of Intent No. _____ and the documents referred to therein, which have been unequivocally accepted by (NAME OF CONTRACTOR) vide their acceptance letter dated _____ resulting into a contract.

NOW THEREFORE THIS DEED WITNESSETH AS UNDER:

ARTICLE 1.0 – AWARD OF CONTRACT

1.1 SCOPE OF WORK

C-DAC has awarded the contract to (NAME OF CONTRACTOR) for the work of (NAME OF WORK) on the terms and conditions in its letter of intent No. _____ dated _____ and the documents referred to therein. The award has taken effect from (DATE) i.e. the date of issue of aforesaid letter of intent. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the "Contract Documents" referred to in the succeeding Article.

ARTICLE 2.0 – CONTRACT DOCUMENTS

2.1 The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as "Contract Documents").

a) C-DAC Notice Inviting Tender vide No. _____ date _____and C-DAC' s tender documents consisting of:

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i) General Conditions of Contract (GCC) & Special Conditions of Contract (SCC) including Appendices & Annexure along with amendment(s) / errata (if any) issued (Volume-I).

ii) Bill of Quantities along with amendment(s)/corrigendum(s), if any, (Volume-II).

iii) Technical Specifications along with amendment(s) / corrigendum(s), if any, (Volume-III).

iv) Tender drawings along with amendment(s) / corrigendum(s), if any, (Volume-IV).

v) _____

vi) _____

b) (NAME OF CONTRACTOR) letter proposal dated _____ and their subsequent Communication:

i) Letter of Acceptance of Tender Conditions dated _____

ii) _____

iii) _____

2.2 C-DAC's detailed Letter of Intent No. _____ dated ____ including Bill of Quantities. Agreed time schedule, Contractor's Organisation Chart and list of Plant and Equipments submitted by Contractor.

2.3 All the aforesaid contract documents referred to in Para 2.1 and 2.2 above shall form an integral part of this Agreement, in so far as the same or any part thereof column, to the tender documents and what has been specifically agreed to by C-DAC in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its "TENDER" but not agreed to specifically by C-DAC in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to C-DAC. For the sake of brevity, this Agreement along with its aforesaid contract documents and Letter of Intent shall be referred to as the "Contract".

ARTICLE 3.0 – CONDITIONS & CONVENANTS

3.1 The scope of Contract, Consideration, terms of payments, advance, security deposits, taxes wherever applicable, insurance, agreed time schedule,

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Seal and Signature of the Agency / Contractor **C-DAC**

compensation for delay and all other terms and conditions contained in C-DAC's Letter of Intent No. _____ dated _____ are to be read in conjunction with other aforesaid contract documents. The contractor shall duly perform the contract strictly and faithfully in accordance with the terms of this contract.

3.2 The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent.

3.3 Contractor shall adhere to all requirements stipulated in the Contract documents.

3.4 Time is the essence of the Contract and it shall be strictly adhered to. The progress of work shall conform to agreed works schedule/contract documents and Letter of Intent.

3.5 This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in Agreement. Any modification of the Agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.

3.6 The total contract price for the entire scope of this contract as detailed in Letter of Intent is Rs._____ (Rupees _____ only), which shall be governed by the stipulations of the contract documents.

ARTICLE 4.0 – NO WAIVER OF RIGHTS

4.1 Neither the inspection by C-DAC or the Engineer-in-Charge or Owner or any of their officials, employees or agents nor order by C-DAC or the Engineer-in-Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by C-DAC or the Engineer-in-Charge nor any extension of time nor any possession taken by the Engineer-in-Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to C-DAC, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver or any other or subsequent breach.

ARTICLE 5.0 – GOVERNING LAW AND JURISDICTION

5.1 The Laws applicable to this contract shall be the laws in force in India and jurisdiction of J&K court (s) only.

5.2 Notice of Default

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC

Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at New Delhi.

For and on behalf of:	For and on behalf of:
(NAME OF CONTRACTOR)	CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING
WITNESS:	WITNESS:
1.	1.
2.	2.

Seal and Signature of the Agency / Contractor

Seal and Signature C-DAC