

**TENDER
FOR SUPPLY, INSTALLATION, TESTING &
COMMISSIONING OF 24HP VARIABLE
REFRIGERANT FLOW (VRF) HVAC AT NVCFL
OFFICE, 2ND FLOOR, NSIC HO COMPLEX, OKHLA
ESTATE, NEW DELHI - 110020**



THE NATIONAL SMALL INDUSTRIES CORPORATION LTD.

(A Government of India Enterprise)

**NSIC Bhawan, Okhla Industrial Estate, New
Delhi-110020**

Tel No. 011-26926275

Web-link: NSIC web site: <https://www.nsic.co.in/tender/Current-Tenders> and CPP
Portal: <https://eprocure.gov.in/epublish/app>



THE NATIONAL SMALL INDUSTRIES CORPORATION LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
NSIC Bhawan, Okhla Industrial Estate,
New Delhi-110020
Tel No. 011-26926275,

Ref:- : SIC/MDBP/NVCFL OFFICE/VRF/2022-23

Date: 19.04.2023

M/s -----

Sub: Supply, Installation, Testing & Commissioning of 24HP Variable Refrigerant Flow (VRF) HVAC at NVCFL Office, 2nd floor of NSIC Head Office building, Okhla Industrial estate, New Delhi-110020.

Sir,
Tender document in respect of the above mentioned works containing 46 pages as detailed on page 5 (Index) are forwarded herewith. *Please note that tender is to be delivered in the office of the Deputy General Manager (Contract & Procurement), The National Small Industries Corporation Ltd., Okhla Industrial estate, New Delhi-110020 on or before 10.05.2023 up to 3:00 PM.*

The Tender should be signed and stamped by the authorized signatory on each and every page of the tender document.

The tender should be accompanied by Tender Fee and Earnest Money Deposit (EMD) in the form of demand draft as mentioned in Appendix. Tenders without tender fee and earnest money deposit shall be summarily rejected. The Technical Bids will be opened on 10.05.2023 at 03:30 PM and Price Bids of technically qualified Bidders will be opened at a later date.

The person, signing the tender on behalf of company/ firm or on behalf of another person shall attach with tender a certified copy of proper authority/power of attorney on a non-judicial stamp paper of requisite value duly executed in his favour by such person, company/ firm and must state specifically that he has authority to sign such tenders for and on behalf of such person or company/ firm as the case may be, and in all matters pertaining to the contract including arbitration clause.

This letter shall form part of the **“CONTRACT”** and must be signed and returned along with the tender documents.

Yours faithfully

**Deputy General Manager
(Contract & Procurement)**

Encl.: 46 Pages

Signature of the Bidder

NOTICE INVITING TENDER

Tender notice for Supply, Installation, Testing & Commissioning of 24HP Variable Refrigerant Flow (VRF) HVAC at NVCFL Office, NSIC HO Complex, Okhla Estate, New Delhi - 110020

Ref:- SIC/MDBP/NVCFL OFFICE/VRF/2022-23

Date: 19.04.2023

Sealed item rate tenders are invited from **eligible and experienced OEM companies or authorized dealers** who have successfully completed similar works during last 7 (seven) years ending 31.03.2023. Eligibility criteria for this work, (i) Three similar works costing not less than **Rs. 5.36.800/-** each, or (ii) Two similar works costing not less than the amount of **Rs. 6.71.000/-** each or (iii) One similar work costing not less than **Rs.10.73.600/-** for carrying out the following work. The values mentioned are exclusive of taxes, GST.

S. No.	Name of the work	Estimated cost (Rupees)	Earnest Money Deposit (EMD)/ Bid Security (Rupees)	Completion Time	Issue of Blank Tender Document	Last Date of Submission Tender
1.	Supply, Installation, Testing & Commissioning of 24HP Variable Refrigerant Flow (VRF) HVAC at NVCFL Office, NSIC HO Complex, Okhla Estate, New Delhi - 110020	Rs. 13,42,000/- (without GST)	Rs. 27,000/-	75 Days	From 19.04.2023 To 09.05.2023	10.05.2023 Up to 3.00 PM

- Blank tender documents (non-transferable) for above work may be downloaded from the web-link given below. The tender fee of Rs. 1,180/- (Rupees One Thousand One Hundred Eighty only) (non-refundable) including GST in the form of DD/ Pay order/ Bankers Cheque in favor of "The National Small Industries Corporation Ltd." Payable at New Delhi. The intending tenders can also download the complete tender document available on the web site: www.nsic.co.in/tender/current-tender.aspx or www.eproucre.gov.in and submit the same along with requisite tender fee, and supporting documents on or before the due date and time of submission.
- Tenderers registered as Micro and Small Enterprises (MSEs) as defined in MSME Procurement Policy issued by department of Micro, Small and Medium Enterprises or are registered with the Central Purchase Organization or the concerned Ministry or Department or Startups as recognized by Department of Industrial Policy and Promotion are exempted from the payment of tender fee and earnest money deposit. However, tenderer seeking exemption from payment of tender fee and earnest money deposit shall submit the proof of the same along with their technical bid.
- Intending tenderers should have valid registration with appropriate authorities for statutory taxes as applicable.

4. The intending tenderers should have satisfactorily completed similar works during last 7 (Seven) years ending 31.03.2023. Eligibility criteria for this work, (i) Three similar works costing not less than **Rs. 5,36,800/-** each, or (ii) Two similar works costing not less than the amount of **Rs. 6,71,000/-** each or (iii) One similar work costing not less than **Rs.10,73,600/-**. Similar nature work means: -“**Execution of VRF Air Conditioning/HVAC Works**”. The values mentioned above are **exclusive of GST**.
5. Tender documents can be purchased from the office of the Deputy General Manager (Contract & Procurement), The National Small Industries Corporation Ltd., Okhla Industrial estate, New Delhi-110020 on all working days between 10.00 am to 6.00 pm except on holidays and Saturdays, Sundays, after payment of requisite tender cost as mentioned above.
6. The tender documents duly completed along with tender fee and earnest money deposit (if not eligible for exemption) in form of Demand Draft/ Pay Order in favour of the “The National Small Industries Corporation Ltd” payable at New Delhi from any Nationalized Bank/ Scheduled bank will be submitted at the office of the *Deputy General Manager (Contract & Procurement), The National Small Industries Corporation Ltd., Okhla Industrial estate, New Delhi-110020* upto 3.00 PM on 10.05.2023. Technical bid of the parties shall be opened on the same day i.e. 10.05.2023 at 03.30 PM. The tender submitted without tender fee and earnest money deposit or valid exemption certificate, shall be summarily rejected.
7. NSIC reserves the right to reject any or all the tenders without assigning any reason thereof and also not bound to accept lowest tender. Tenders in whom any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.
8. Canvassing, whether directly or indirectly in connection with tender is strictly prohibited and the tender submitted by the contractors who resort canvassing will be liable to be summarily rejected.
9. The Technical Bid submitted by the parties shall be opened on the same day i.e. 10.05.2023 at 03:30 PM in the presence of tenderers who wish to be present. The price bids of technically qualified parties shall be opened at a later date and the technically qualified parties shall be informed in advance about the opening of their price bid.
10. Bank Account details for transfer of Tender fee & EMD through NEFT/RTGS is as under:-

ACCOUNT NAME	BANK NAME	BANK A/C NO.	BANK IFSC CODE
The National Small Industries Corporation Ltd.	ICICI Bank, 9A, Phelps, Building, Connaught Place New Delhi-110001	0007-0505-4052	ICIC0000007

Deputy General Manager
Contract & Procurement
NSIC Limited,
Okhla, New Delhi

**THE NATIONAL SMALL INDUSTRIES CORPORATION LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
NSIC Bhawan, Okhla Industrial Estate,
New Delhi-110020
Tel No. Tel No. 011-26926275,**

Ref:- SIC/MDBP/NVCFL OFFICE/VRF/2022-23

Date: 19.04.2023

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INSTRUCTIONS TO TENDERERS

1. GENERAL

Tenderers are advised to acquaint themselves fully with the description of work, scope of services, time schedule and terms and conditions including all the provisions of the tender document before framing up their tender.

2. SITE PARTICULARS

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to nature of work, site conditions, means of access to the site etc. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with the specifications. For site visit and any clarification / information/ Assistance, the intending tenderers may contact Dy. Manager (Works), *The National Small Industries Corporation Ltd., Okhla Industrial estate, New Delhi-110020.*

3. SUBMISSION OF TENDER

- a) The expression “Tender Notice” referred to in the Tender Documents shall be deemed to include any Notice/ Letter Inviting Tender with respect to the work forming the subject matter of the documents and vice-versa.
- b) The tender complete in all respects shall be submitted along with tender fee (if not eligible for exemption) as stipulated in the Notice/ Letter Inviting Tender ONLY. Tenders without tender fee (if not eligible for exemption) will be out rightly rejected.

Tenders shall be submitted in two separate sealed envelopes Super scribing the following:-

ENVELOPE –I

(TECHNICAL BID)

Name of work : Supply, Installation, Testing & Commissioning of 24HP
Variable Refrigerant Flow (VRF) HVAC at NVCFL Office,
NSIC HO Complex, Okhla Estate, New Delhi - 110020

Tender no. : Ref:- SIC/MDBP/NVCFL OFFICE/VRF/2022-23
Date: 19.04.2023

Due date & time of opening : 10.05.2023 at 03.30 PM

Addressed to : Deputy General Manager (Contract & Procurement),
The National Small Industries Corporation Ltd., Okhla Industrial
Estate, New Delhi-110020

From:

Name & Address of the tenderer

This envelope shall contain the following: -

- **‘Manufacturer’s Authorization Form’** from Original Equipment Manufacture as Annexure A in case bidder is an authorized dealer of the offered product.
- Tender fee and earnest money deposit should be in the form of Demand Draft/ Pay Order/ Bankers Cheque drawn on a scheduled/nationalized bank in favour of “The National Small Industries Corporation Ltd.” payable at New Delhi. In case tender fee is transferred through NEFT/ RTGS, proof of the same should be attached with the technical bid of the tender document.
- Cheque will not be accepted. For Tender documents downloaded from website, a Demand Draft/ Bankers cheque of Rs. 1,180/- (Rupees One Thousand One Hundred Eighty only) (non-refundable) including GST towards the cost of tender documents is to be enclosed in **envelope-I**.
- Certificates/ Documents of work experience executed during last 7 (Seven) years ending 31.03.2023. Eligibility criteria for this work, (i) Three similar works costing not less than **Rs. 5,36,800/-** each, or (ii) Two similar works costing not less than the amount of **Rs. 6,71,000/-** each or (iii) One similar work costing not less than **Rs.10,73,600/-** Similar nature work means: -“Execution of VRF Air Conditioning/HVAC Works”. The values mentioned above are exclusive of GST. **In case of completion certificate issued by the private parties, TDS certificate should also been closed.**
- Certificate of Registration for GST.
- Partnership Deed in case of partnership firm and Articles of Association in case of limited Company.
- Power of Attorney in favour of person who has signed the tender document. In case of company, the authority to sign the tender is to be given under Board resolution.
- Copies of PAN/ TAN card.
- Complete tender document with each page signed and stamped by the Bidder.

It may be clearly noted that the filled up price bid should not be placed inside this envelope containing the technical bid. In case the filled up price bid is found inside the technical bid, such tender shall be summarily rejected.

ENVELOPE –II

(PRICE BID)

Name of work : Supply, Installation, Testing & Commissioning of 24HP Variable Refrigerant Flow (VRF) HVAC at NVCFL Office, NSIC HO Complex, Okhla Estate, New Delhi – 110020

Tender no. : Ref:- SIC/MDBP/NVCFL OFFICE/VRF/2022-23
Date: 19.04.2023

Due date & time of opening :

Addressed to : Deputy General Manager (Contract & Procurement),
The National Small Industries Corporation Ltd., Okhla Industrial
Estate, New Delhi-110020

From:

Name & address of the tenderer:

NOTE: Envelope-I shall contain all the documents related to eligibility criteria, terms-conditions of tender documents etc. i.e. complete tender documents except Price Bid part. **Envelope-II** shall contain only Price bid/Bill of Quantities (BOQ) to be charged by the tenderers for execution of the work. It is to be noted that the **Envelope-II** shall contain only **PRICES** and no conditions i.e. deviations/ assumptions/ stipulations/ clarifications/ comments/ any other request what so ever. Conditional offers will be rejected.

4. QUALIFYING CRITERIA

Tenderers having following valid documents will be technically qualified and considered for opening of their price bid. Technically qualified parties have no right to claim for award of the work. Corporation reserves the right to cancel or award the work to any party/tenderers.

- The Bidder should be a manufacturer /authorized dealer of a manufacturer who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the “Technical Specification”. Authorized Dealer shall submit the Manufacturers’ Authorization Form in format provided ahead at Annexure A with the technical bid.
- Tender fee and earnest money deposit should be in the form of Demand Draft/ Pay Order/ Bankers Cheque drawn on a scheduled/nationalized bank in favour of “The National Small Industries Corporation Ltd.” payable at New Delhi. Cheques will not be accepted. For Tender documents downloaded from website, a Demand Draft/ Bankers cheque of Rs. 1,180/- (Rupees One Thousand One Hundred Eighty only) (non-refundable) including GST towards the cost of tender documents is to be enclosed in envelope –I. In case tender fee is transferred through NEFT/RTGS, proof of the same should be attached with the technical bid of the tender document
- Certificates/ Documents of work experience executed during last 7 (Seven) years ending 31.03.2023. Eligibility criteria for this work, (i) Three similar works costing not less than **Rs. 5,36,800/-** each, or (ii) Two similar works costing not less than the amount of **Rs. 6,71,000/-** each or (iii) One similar work costing not less than **Rs.10,73,600/-** Similar nature work means: -“**Execution of VRF Air Conditioning/HVAC Works**”. The values mentioned above are exclusive of GST. **In case of completion certificate issued by the private parties, TDS certificate should also been closed.**
- Certificate of Registration for GST.
- Partnership Deed in case of partnership firm and Articles of Association in case of limited Company.
- Power of Attorney in favour of person who has signed the tender documents. In case of company, the authority to sign the tender is to be given under Board resolution.
- Copies of PAN/TAN card.
- Complete tender document with each page signed and stamped by the Bidder.

5. ABNORMAL RATES

The tenderer is expected to quote rate for each item after careful analysis of costs involved for the performance of the complete item considering technical specifications and conditions of contract. This will avoid a loss of profit or gain in case of curtailment or change of specifications for any item. If it is noticed that the unit rates quoted by the Tenderer for any items are usually high or unusually low, it will be sufficient cause for rejection of the tender unless the Corporation is convinced about the reasonableness of the unit rates on scrutiny of the analysis for such unit rate to be furnished by the tenderer on demand. Notwithstanding anything there in stated, the rates once accepted by the Corporation shall be final and shall not be subject to any change either on account of un-workability of unit rates or on any other ground whatsoever.

6. DEVIATIONS TO TENDER CLAUSES

Tenderers are advised to submit the tender strictly based on the terms and conditions and specification contained in the Tender Documents and not to stipulate any deviations. Conditional tenders are liable to be rejected.

7. VALIDITY OF OFFER

Tender submitted by tenderers shall remain valid for acceptance for a minimum period of 120 days from the date of opening of the tenders. The tenderers shall not be entitled during the said period of 120 days, to revoke or cancel their Tender or to vary the Tender price given or any term thereof, without the consent in writing of the Owner.

8. EARNEST MONEY FORFEIT:

a) In case of tenderers revoking or canceling their tenders or varying any terms & price of an item in regard thereof without the consent of owner in writing, Corporation shall reject their tender forfeiting the Earnest money paid by them along with their tender without giving any notice.

b) The EMD will also be forfeited in following cases:

- i. If the Bidder fails to accept, the supply order issued, based on his/her offer (bid) within the prescribed time.
- ii. If the Bidder fails to supply the Machines with specifications as mentioned in the tender.
- iii. If the Bidder delays supplies beyond a reasonable time resulting in disruption of project.
- iv. Bidder for any reason whatsoever withdraws the tender after it is accepted or become unable or fails to execute the orders within stipulated delivery period.
- v. Submission of misleading/contradictory/false statement or information and fabricated/invalid documents is detected before or after the issue of order to execute the supplies.

9. AWARD OF WORK

Corporation reserves the right to split the job into two or more parts and to award the work to separate agencies/ contractors. Work shall be awarded to the lowest Bidder, subject to the work experience and fulfillment of other terms & conditions and specifications

10. ACCEPTANCE/REJECTION OF TENDER

- i). Corporation does not bind itself to accept the lowest tender.
- ii). Corporation also reserves the right to accept or reject any tender in part or full without assigning any reason whatsoever.
- iii). Corporation also reserves the absolute right to reject any or all the tenders at any time solely based on the past unsatisfactory performance by the Bidder(s) the opinion/ decision of NSIC regarding the same shall be final and conclusive.

11. CORRECTIONS

No corrections or overwriting will be entertained in schedule of rates by using correcting fluid. All correction in the schedule of rate should be made by penning through the error and writing the corrected figure/ words in legible handwriting by the side of correction duly initialed with date and stamped.

12. FIRM RATES

The rates quoted by Bidder shall remain firm till completion of all works even during the extended period, if any, on any account whatsoever. It may be noted that no deviation on this account will be acceptable and offer not containing firm price shall not be considered.

13. CODE OF ETHICS: The tenderers should observe the highest standard of ethics and should not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- a. **“Corrupt practice”**: making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;

- b. **“Fraudulent practice”**: any omission or commission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- c. **“Anti-competitive practice”**: any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more tenderers, with or without the knowledge of NSIC, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- d. **“Coercive practice”**: harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

In case it comes to the notice of NSIC at any stage that a tenderer has indulged in any corrupt/ fraudulent/ anti-competitive/coercive practice:

- i) Will reject a proposal for award if it determines that the tenderer recommended for award has engaged in corrupt or fraudulent or anti-competitive or coercive and unlawful practices in competing for the contract in question.
- ii) Will declare the tenderer not eligible and blacklist for a period of three years from being awarded a contract, if it at any time determines that the tenderer has engaged in corrupt or fraudulent or anti-competitive or coercive and unlawful practices in competing for or in executing, a contract.

14. After the work is awarded, the contractor will have to enter into an agreement with the Corporation on an on-judicial stamp paper of requisite value at his own cost within (15) days from date of receipt of acceptance work order. The agreement will be in line with the “General Conditions of the Contract” & “Special Conditions of the Contract” of the tender document.
15. The EMD will be returned to the unsuccessful Bidders soon after the orders are placed on the successful Bidder. In case of successful Bidder, the EMD amount will be converted and adjusted to security deposit amount mentioned at clause 8 of “General Conditions of the Contract”.
16. Any addendum/ corrigendum issued shall form a part of the tender document. There will not be any press notification on amendment/ corrigendum. The purchasers of the tender document the prospective tenderers are required to visit NSIC web-link- <https://www.nsic.co.in/tender/Current-Tenders> and CPP Portal for all such amendments/ corrigenda to NIT as well as the tender document.

Deputy General Manager
Contract & Procurement
NSIC Limited,
Okhla, New Delhi

GENERAL CONDITIONS OF CONTRACT

1. Where the context so requires, words importing the singular only also include the plural and vice versa.
2. Corporation shall mean 'The National Small Industries Corporation Ltd. (NSIC) (A Government of India Enterprise) having its registered office at "NSIC Bhawan, Okhla Industrial Estate, New Delhi-110020 which expression shall include its legal representatives, successors and permitted assigns.
3. **Definition**
 - a) The 'Contract' means and includes the documents forming the tender and acceptance thereof together with the documents referred to there in including the conditions, the specifications, designs, drawing and instructions issued from time to time by the 'Engineer-in-charge', the formal agreement executed between the Corporation and the Contractor, and all these documents taken together shall be complementary to one another.
 - b) The 'Site' shall mean the land and/ or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
 - c) The 'Contractor' shall mean the individual or firm or company, whether corporate or not, undertaking the works and shall include the legal personal representative or such individual or the persons composing such firm or company and the permitted assignee of such individual or firm or company.
 - d) The 'Competent Authority' means the Chairman cum Managing Director of the Corporation and his successors.
 - e) The Engineer-in-charge means the Technical Officer of the Corporation, as the case may be who shall supervise and be the In-charge of the works.
 - f) The Chief General Manager-SG (Works & Estate) means the officer who holds the charge of that post in the National Small Industries Corporation Ltd., Okhla Industrial Estate, New Delhi-110020 during the currency of this agreement, to act on behalf of the Chairman of the NSIC Ltd.
 - g) 'IS Specification' means the Specification of latest edition with amendments, if any, up to time of receipt of tender by Corporation issued by the Bureau of Indian Standards as referred to in the specifications and/ or work orders.
 - h) The 'Contract Sum' means the sum agreed, or the sum calculated in accordance with the prices accepted by the NSIC in the tender and/ or the contract/ negotiated
 - i) The 'Final Sum' means the amount payable under the Contract by the Corporation to the Contractor for the full and entire execution and completion of works, in time.
 - j) The 'Date of Completion' is the date/ date(s) for completion of the whole works, set out in the tender documents, or any subsequently amended by the Corporation.
 - k) A 'Week' means seven days without regard to the number of hours worked or not worked in any day in a week.

- l) 'Excepted Risks' are risks due to riots (otherwise than among contractor's employees) and civil commotion (in so far as both these are uninsurable) war (whether declared or not), invasion act of foreign enemies, hostilities civil war, rebellion, revolution, insurrection military or usurped power, Acts of God, such as earthquake, lightening, unprecedented floods and other causes over which the contractor has no control and accepted as such by the Competent Authority or causes solely due to use or occupation by the 'Corporation' of the part of works in respect of which a certificate of completion has been issued.
- m) 'Urgent works' shall mean any urgent measures which in the opinion of the Engineer-in-charge, become necessary during the progress of the work to obviate any risk or accident or failure or which become necessary for security.
- n) The 'Works' shall mean the works to be executed in accordance with the contract or part(s) thereof as the case may be and shall include all extra or additional, altered or instituted works or temporary and urgent works as required for performance of the contract.

4. Works to be carried out:

The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plant, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, beheld, to include wastage on materials, carriage and cartage, carrying in return of empties hoisting, setting, fitting and fixing in position and all other labour necessary in and for the full and entire execution and completion as aforesaid in accordance with good practice and recognized principles.

5. Inspection of Site:

The Contractor shall inspect and examine the Site and its surrounding and shall satisfy himself before submitting his tender as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the Site, the quantities and nature of works and material necessary for the completion of the Works and the means of access to the Site, the accommodation he may require and in general shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect this tender. No extra charges consequent on any misunderstanding or otherwise shall be allowed.

6. Sufficiency of Tender:

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which except as otherwise provided, cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the Works.

7. Discrepancies and Adjustment of Errors:

The several documents forming the contract are to be taken as mutually explanatory of one another:

7.1(A) In the case of discrepancy between Schedules of quantities, Specifications and/or the Tender Drawings, the following order of preference shall be observed.

- a. Agreement
- b. Letter of Award

- c. Amendment/ Corrigendum to the tender document
- d. Schedule of Quantities (Price Bid)
- e. Drawings
- f. Notice Inviting Tender and Instruction to Tenderers
- g. Special conditions
- h. General Condition of Contract (GCC)

7.1(B) If there are varying or conflicting provisions made in any document forming part of the Contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document.

7.2 Any error in description, quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the Works comprised therein according to tender drawings and specifications or from any of his obligations under the Contract.

7.2.1 Inconsistencies/ Ambiguities in the price bid (schedule of quantities) shall be dealt with in accordance with the following rules:-

- a) Rates quoted by the tenderer and the corresponding amount shall be accurately filled in so that there is no discrepancy in the rate and corresponding amount. However, if a discrepancy between the rate and corresponding amount is found, then the rates quoted by the tenderer shall be taken as correct
- b) In the event no rate has been quoted for any item(s), it will be presumed that the contractor has included the cost of this/ these item(s) in other items and rate for such item(s) shall be considered as zero and work will be required to be executed accordingly.

8. Performance Security Deposit:

Total performance security deposit shall be 10% of the contract value and shall be deposited by/deducted from the contractor as following: -

a) Initial Performance Security Deposit:

Contractor will initially deposit a sum five percent (5%) of the accepted tender cost as an initial performance security deposit within (21) days of receipt of the letter of award. The earnest money deposited shall be converted into initial security deposit. The initial performance deposit to be submitted in the form of demand draft or through digital payment mode after deducting the amount equivalent to the earnest money deposit.

b) Balance Performance Security Deposit

Balance performance security deposit will be deducted from the gross amount of the final bill to an extent that the total performance security deposit reaches to an amount equivalent to 10% of contract value including initial security performance deposit.

8.1 Refund of Security deposit: On expiry of the Defects Liability Period/Warranty Period, the Engineer-In-Charge shall, on demand from the Contractor, refund the total performance security subject to satisfactory performance of the Air Conditioning System till expiry of the defect liability period.

8.2 No interest shall be payable to the contractor against the Security Deposit furnished / recovered from the contractor, by the Corporation.

8.3 Security Deposit Forfeit:

The security deposit will be forfeited in following cases:

- i. If the Bidder fails to accept, the supply order issued, based on his/her offer (bid) within the prescribed time.
- ii. If the Bidder fails to supply the Machines with specifications as mentioned in the tender.
- iii. If the Bidder delays supplies beyond a reasonable time resulting in disruption of project.
- iv. Bidder for any reason whatsoever withdraws the tender after it is accepted or become unable or fails to execute the orders within stipulated delivery period.
- v. Submission of misleading/contradictory/false statement or information and fabricated/invalid documents is detected before or after the issue of order to execute the supplies.

9. Deviations/ Variations Extent & Pricing:

9.1 The Engineer-in-Charge shall have power (i) to make alteration in, omissions, from or additions to, or substitutions from the original specification, tender drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the Site or for any other reasons, and the Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by The Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the Contract as if originally provided therein and any altered, additional or substituted work which the contractor may be carrying out on the same conditions in all respects including price on which he agreed to do the main work. Any alterations, omissions additions or substitutions ordered by the Engineer-In-Charge which in the opinion of the contractor changes the original nature of the Contract, he shall carry it out and the rates for such additional, altered or substituted work shall be determined by the Engineer-in-Charge as per clause 10 (i) to (iii) here under of the tender document.

9.2 The time of completion of the works shall in the event of any deviations resulting in additional cost over the Contract Sum being ordered be extended as follows if requested by the Contractor.

- a) In the proportion which the additional cost of the altered addition or substituted work, bears to the original Contract sum; plus.
- b) 25% of the time calculated in (a) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

10. Rates for Extra/ Additional Items

- i) If the rate for additional, altered or substituted item of work specified in the Schedule of Quantities the Contractor shall carry out the additional, altered or substituted item at the same rate.
- ii) If the rate for any altered, additional or substituted item of work is not specified in the schedule of Quantities the rate for that item shall be derived from the rate for the nearest similar item specified therein.
- iii) If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub-paragraphs (i) and (ii) above, the contractor shall within 7 days of the receipt of the order to carry out the said work, inform the Engineer-in-Charge under advice to the Accepting Authority of the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed, and the Engineer-in-Charge shall, within One month thereafter, after give due consideration to the rate claimed by the Contractor determine the rate on the basis of market rate(s). In the event of the contractor failing to inform the Engineer-in-Charge within the stipulated period of time, the rate which he proposes to claim, the rate for such item

shall be determined by the Engineer-in Charge on the basis of market rate(s) and shall be final.

11. 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 reasons 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 works to the extent necessary and carryout 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. The Contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No financial compensation for such suspension shall be admissible to the contractor.

12. Time and Extension for Delay:

The time allowed for execution of the works as specified in the Appendix or the extended time as approved by NSIC in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from the 10th day after the date on which the Corporation issues written orders to commence the work or from the date of handing over of the site, whichever is earlier. If the Contractor commits default in commencing the execution of the work as aforesaid, Corporation shall without prejudice to any other right or remedy be at liberty to terminate the contract and also to de bar the contractor or for a period of three years from participating in any tender invited by the Corporation.

12.1 As soon as possible after the Contract is concluded the Engineer-in-Charge and the Contractor shall agree upon a Time and Progress Chart. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades or sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract Documents.

12.2 If the work be delayed by

- (a) Force majeure or
- (b) Abnormally bad weather or
- (c) Serious loss or damage by fire, or
- (d) Civil commotion, local combination of workmen strike or lockout, affecting any of the trades employed on the work, or
- (e) Delay on the part of other contractors or tradesmen engaged by Corporation in executing work not forming part of the contract, or
- (f) Any other cause which, in the absolute discretion of the authority mentioned in Appendix 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.

- 12.3 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay. The Contractor may also if practicable, indicate in such request the period for which extension is desired.
- 12.4 In any such case the competent authority may give a fair and reasonable extension of time for completion of the work. Such extension shall be communicated to the contractor by the Engineer-in-Charge and no compensation whatsoever for the extended period, if any shall be applicable/payable.
13. The Contractor shall arrange, at his own expense, all tools, plant and equipment here after referred to as (T&P) labour, P.O.L. & electricity required for execution of the work.

14. FORCE MAJEURE

Any delays in or failure of the performance of either party herein shall not constitute default there under or give rise to any claim for damages, if any, to the extent such delays or failure of performance is caused by occurrences such as Act of god or the public enemy, expropriation or confiscation of facilities by Government authorities, or in compliance with any order or request of any Governmental authorities or due acts of war, rebellion or sabotage or fires, floods, explosions, riots or illegal joint strikes of all the workers of all the contractors.

15. MATERIALS

1. All materials to be provided by the Contractor shall be in conformity with the specifications laid down in the contract and the Contractor shall, if requested by the Engineer-in-Charge, furnish proof to the satisfaction of Engineer-in-Charge in this regard.
2. The contractor shall indemnify the Corporation, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect to any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against the Corporation or any agent, servant or employee of the Corporation in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof.
3. All charges on account of octroi, terminal or GST and other duties on material obtained for the Works from any source shall be borne by the Contractor.
4. The Engineer-in-Charge shall be entitled to have tests carried out as specified as per relevant standard code of practice for any materials supplied by the Contractor even for those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his own expense all facilities which the Engineer-in-Charge may require for the purpose. The cost of materials consumed in tests shall be borne by the Contractor.
5. Stores and Materials required for the works, brought by the Contractor, shall be stored by the Contractor only at places approved by the Engineer-in-Charge. Storage and safe custody of material shall be the responsibility of the contractor.

- i. Corporation's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated or at any place(s) where these are lying or from where these are being procured and the contractor shall give such facilities as may be required for such inspection and examination.
- ii. All materials brought to the Site shall become and remains the property of the Corporation and shall not be removed off the Site without the prior written approval of Engineer-in-Charge of the Corporation. But whenever the works are finally completed the Contractor shall, at his own expense forthwith, but with the prior approval from the Corporation, remove from the Site all surplus materials originally supplied by him and upon such removal the same shall revert in and become the property of the contractor. However before giving any approval as aforesaid, the corporation shall be entitled to recover or adjust any amount given as advance to the Contractor.

16. Labour Laws and payment of wages to be complied:

The contractor shall comply with the Labour laws in force. No Labour below the age of eighteen years shall be employed on the works. The tenderer should make their own arrangement for the assign all Labour trained in the particular field of work preferably local.

The contractor shall obtain a valid license under the Contract Labour (R&A) Act, 1970 and the Contract Labour (R&A) Central Rules, 1971, before the commencement of the work, and continue to have a valid license till completion of work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986. The contractor shall comply with the provisions of the Payments of wages act, 1936, Minimum wages Act, 1948, Employment liability Act, 1938, Workmen's compensation act 1923, Industrial dispute Act, 1947, the factories act 1948, Maternity Benefit Act 1961 and any statutory amendments or re-amendments thereof for the time being in force.

In respect of all Labourers directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange the safety provision as per safety code framed from time to time by statutory authorities and shall at his own expense provide for all facilities in connection therewith. In case, the contractor fails to make arrangement and provide necessary facilities as aforesaid he shall be responsible for any compensation for each default and in addition the Engineer-In-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

The contractor shall be fully liable for compliance of EPF or ESI of the labours/ workmen deployed by them for carrying out the work as per prevailing Central or State government norms and the Corporation has nothing to do with the same. Corporation shall not be responsible for any liability/claims what so ever in this regard. Further as and when demanded by the Corporation, the contractor shall submit the proof of deductions/ deposits of such liabilities of their Labours/ workmen engaged in the work to the Corporation. In case of default, the Corporation may deduct the payments against these liabilities from the bills of the contractor or may stop the payment of the bill till such time the compliance is proved the contractor.

The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis, as applicable subject to submission of necessary supporting documents by the contractor to the satisfaction of the Engineer-in-Charge.

17. Liquidated Damages for Delay

- 17.1 Time is essence of the contract. In case the CONTRACTOR fails to complete the whole work within the stipulated period, and clear the site, he shall be liable to pay liquidated damages @ 0.5% (One Half of one percent only) of the value of contract per week and or part thereof of the delay subject to a maximum of 10% (ten percent only) of the value of the contract. The parties agree that this is a genuine pre-estimate loss / damage which will be suffered on account of delay on the part of the Contractor and the said amount will be payable on demand without there being any proof of the actual loss of damages caused by such delay.
- 17.2 The amount of Compensation may be adjusted or set-off against any sum payable to the Contract or under this or any other contract with the Corporation.

18. Defects Liability Period & Warranty Period:

The Bidder shall offer on-site comprehensive warranty of machine for minimum one year from the date of date of completion of the work in all respect at the designated location. The purchaser will not pay any extra charges on any account during warranty period. The Contractor shall be responsible to make good and remedy at his own expense any faulty component due to poor workmanship or due to manufacturing defect within defect liability period of one year from the date of completion of the work in all respect.

19. Contractor's Liability and Insurance

From commencement to completion of the works, the Contractor shall take full responsibility, care of and precautions to prevent loss or damage and to minimize loss or damage to the greatest extent possible and shall be liable for any damage or loss that may happen to the Works or any part thereof from any cause whatsoever (save and except the Excepted Risks) and shall at his own cost repair and make good the same so that, at completion, the works shall be in good order and conditions and in conformity in every respect with the requirements of the Contract and instructions of the Engineer-in-Charge.

- 19.1 In the event of any loss or damage to the Works or any part thereof or to any material or articles at the Site from any of the Excepted Risks the following provisions shall have effect:
- a. The Contractor shall, as may be directed in writing by the Engineer-in-Charge, remove from the site any debris and so much of the works as shall have been damaged.
 - b. The Contractor shall, as may be directed in writing by the Engineer-in-Charge, proceed with the completion of the works under and in accordance with the provisions and Conditions of the Contract, and
- 19.2 Provided always that the Contract or shall not been titled to payment under the above provisions in respect of such loss or damage as has been occasioned by any failure on his part to perform his obligations under the Contract or not taking precautions to prevent loss or damage or minimize the amount of such loss or damage.
- 19.3 The Contractor shall indemnify and keep indemnified the Corporation against all losses and claims for injuries or damage to any persons or any property whatsoever which may arise out of or in consequence of the construction and maintenance of works and against all claims, demands proceedings, damages costs, charges and expenses whatsoever in respect of or in relation there to. Provided always that nothing herein contained shall be deemed to render the Contract or not liable for or in respect of or to indemnify the Corporation against any compensation or damage caused by the Excepted Risks.

- 19.4 Before commencing execution of the work, the Contractor shall, without in anyway limiting his obligations and responsibilities under this condition, obtain and deposit with the Corporation – Contractors “All Risk Policy” and “Third Party” Insurance policy.
- 19.5 The Contractor shall at all times indemnify the Corporation against all claims, damages or compensation under the provisions of Payment of Wages Act, 1936, Minimum Wages Act.1948, Employer’s Liability Act, 1938 the Workmen’s Compensation Act, 1923, Industrial Disputes Act, 1947 and the Maternity Benefit Act.1961 or any modifications thereof or any other law relating there to and rules made there under from time to time.
- 19.6 The Contract or shall prove to the Engineer-in-Charge from time to time that he has taken all the insurance policies referred to above and has paid the necessary premiums for keeping the policies alive till completion of the work.
- 19.7. All statutory deductions as applicable like TDS, Works Contract Tax Act etc. shall be made from the due payment of the contractor.
- 19.8 No claim for interest will be entertained by the corporation in respect of any balance payments or any deposits which may be held up with the corporation due to any dispute between the corporation and contractor or in respect of any delay on the part of the corporation in making final payment or otherwise.
- 19.9 The contractor shall ensure that no materials/wastes/plant, equipment etc. are dumped at the site. In case any of the above items are dumped, the contractor shall clear the same from the site by or before completion of the work at his own cost or otherwise NSIC shall clear the same work at the contractor’s risk and cost after serving 7 days’ notice.
- 19.10 The contractor will have to make their own arrangement for facilitating movement of labour to work site and back. Facilities are to be provided to labourers as per statutory provision and the same shall not entail or attract any extra cost to NSIC.

20 Safety Code:

- 20.1 The Contractor shall at his own expense arrange for the safety provisions as appended to these conditions or as required by the Engineer-in-Charge, in respect of all labour directly or indirectly employed for performance of the works and shall provide all facilities in connection there with. In case the Contractor fails to make arrangements and provide necessary facilities as a foresaid the Engineer-in-Charge shall be entitled to do so and recover cost thereof from the Contractor.
- 20.2 The contractor shall provide and maintain at his own expenses guards, fencing and hatching when and where necessary or required by the Engineer-in-Charge for the protection of the works or for the safety and convenience of those employed on the works or the public.
- 20.3 The corporation shall not be liable for any accident, injury or for any other mishap caused to him/them/their employees/agents and labour employed by the contractor and for any kind of damage to the works during the execution of the contract or work done. For any kind of such injury or loss caused to any person/persons mentioned herein above or damages to the work, the contractor shall be exclusively liable.

21 Cancellation/ Termination of Contract in Full or in Part:

- 21.1 If the Contractor:
- At any time makes defaults in proceeding with the Works with due negligence and continues to do so even after a notice in writing of 7 days from the Engineer-in-Charge or
 - Commits default in complying with any of the terms and conditions of 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

- c. Fails to complete the works or items of work on or before the 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
 - d. Enters into a contract with the Corporation in connection with which commission has been paid to any person(s) or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the term of payment have previously been disclosed in writing to the Accepting Authority/Engineer-in-Charge; or
 - e. Offers or gives or agrees to give to any person in Corporation's service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or for bearing to do or having done any act in relation to the abstention or execution of this or any other Contract for the Corporation or
 - f. Obtains a Contract with the Corporation as a result of ring tendering or other non-bonafide methods of competitive tendering; or
 - g. Being an individual or any of its partner (in case of the Contractor is a partnership firm) at any time is adjudged insolvent or have a receiving order or order for administration 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 affective or composition or arrangement of the benefit of his creditors or purport so to do, or if any Application be make under any in solvency Act for the time being in force for these quest ration of his estate or if a trust deed be executed by him for benefit of his creditors; or
 - h. Being a company, passes a resolution or the Court makes an order for liquidation of its affairs, or a receiver or manager on behalf of the debenture holders is appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or
 - i. Assigns, transfers sublets (engagement of labour on a piece-work basis or of labour with materials not be incorporated in the work shall not be deemed to be subletting) or attempts or assign, transfer or sublet the entire works or any portion thereof without the prior written approval of the Accepting Authority.
- 21.2 The Competent Authority may, without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to the Corporation by written notice cancel/ terminate the contract as a whole or in part as it may deem appropriate.
- 21.3 The Competent Authority shall on such cancellation/termination, been titled to:
- a. Take possession of the site and any materials, construction plant, implements, stores, etc., there on; and/ or
 - b. Carryout the incomplete work by any means at the risk and cost of the Contractor.
- 21.4 On cancellation/ termination of the Contract, in full or in part, the Accepting Authority shall determine the quantum of amount, if any, recoverable from the Contractor for completion of Works or part of the works or in case the works or part of the works is not completed, the loss or damage suffered by the Corporation. In determining the amount credit shall be given to the Contractor for the value of the work, if any, executed by him up to the time of cancellation of the contract, the value of contractors material taken over and incorporated in the work and use of tools & tackle and machinery belonging to the Contractor.
- 21.5 Any excess expenditure incurred or to be incurred by the Corporation in completing the Works or part of the Works or the excess loss or damages suffered or may be suffered by the Corporation as

aforesaid after allowing such credit shall be recovered from any money due to the Contractor or any account, and if such money is not sufficient the Contractor shall be called upon in writing to pay the same within 30 days.

- 21.6 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 there after there be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the Contract.
- 21.7 Any sums in excess of the amounts due to the Corporation on unsold materials, constructional plant, etc. shall be returned to the Contractor, provided always that if cost or anticipated cost of the completion by the Corporation 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.

22. Liability for Damage, Defects or Imperfections and Rectification thereof:

- 22.1 If the Contractor or his workmen or employees shall injure or destroy any part of the building in which they may be working or any building, road, fence etc, continuous to the premises on which the work or any part of it is being executed, or if any damage shall happen to the work while in progress the Contractor shall upon receipt of a notice in writing from Engineer – in- charge in that behalf, make the same good at his own expense. If it shall appear to the Engineer- in-Charge or his Representative at any time during construction or re-construction or prior to the expiration of Defects Liability Period, that any work has been executed with unsound, imperfect or unskilled workmanship or that any materials or articles provided by the Contractor, the contractor shall, upon receipt of a notice in writing in that behalf from the Engineer-in-Charge, forth with 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, and/ or remove the materials or articles at his own expense, notwithstanding that same may have been inadvertently passed, certified and paid for and in the event of non-compliance his notice aforesaid, the Engineer-in-Charge may rectify or remove and re-execute the work and/ or remove and replace with others the materials or articles complained of as the case may be, by other means at the risk and expense of the Contractor.
- 22.2 In case of repairs and maintenance works, splashes and dropping from white washing, painting etc. shall be removed and surfaces cleaned simultaneously with completion of these items of work in individual rooms, quarters or premises etc. where the work is done, without waiting for completion of all other items of work in the contract. In case the Contractor fails to comply with the requirements of this condition, the Engineer-in-Charge shall have the right to get the work done by other means at the cost of the Contractor. Before taking such action, however, the Engineer-in-Charge shall give three days' notice in writing to the Contractor.

23. URGENT WORKS:

If any Urgent work (in respect whereof the decision of the Engineer-in-Charge shall be final and binding) becomes necessary and Contractor is unable or unwilling at once to carry it out, the Engineer-in-Charge may by his own or other workpeople carry it out, as he may consider necessary. If the urgent work shall be such as the Contractor is liable under the contract to carry out at his expenses incurred on it by the Corporation shall be recoverable from the Contractor and be adjusted or set off against any sum payable to him.

24. PAYMENTS:

- 24.1 Payment after deduction of Performance Security Deposit and Statutory Dues shall be released after completion of work with respect to BOQ and testing of plant in order to achieve the desired cooling performance upto satisfactory level with respect to capacity of air conditioning plant and submission of following:

- The copy of OEM Verification Certificate regarding the satisfactory completion of work including certification regarding supply and installation of genuine parts at the end of completion of work to the engineer in charge.
 - Submission of User Manual, Warranty Cards, and Drawing & Layout as detailed in clause no. 13 & 14 under Special Conditions.
- 24.2 Payment will be made on actual work done/measurement basis as carried out at the site. Any work executed by the contractor in violation to the tender specifications, drawings and direction of Engineer incharge shall constitute breach of agreement and shall not qualify for the measurement and payment. The measurement shall be jointly recorded by the contractor and representative of NSIC. The quantities given in the schedule of quantities are only approximate and contractor will have to carry out the work as per the increased/decreased quantity of work as per the directions of Engineer-in-Charge, for which no extra claim over and above the tender rate will be considered. For releasing the payment up-to accepted tender amount the Chief General Manager-SG (Works & Estate.) is the approving authority.
- 24.3 No escalation will be paid even in extended period, if any.
- 24.4 All statutory deductions as applicable like TDS, and other taxes as applicable shall be made from the due payment of the contractor.
- 25. MOBILISATION ADVANCE:**
No mobilization advance whatsoever shall be paid for carrying out this work.
- 26. ARBITRATION:-**
- 26.1 All questions and disputes relating to the meaning of the words, terms, specifications, operations, and instructions, mentioned in this contract and as to the quality of workmanship or performance of the contractor any other question, claim, right, matter, or thing whatsoever in any way arising out of or relating to the contract, specifications, operating instructions, orders or these conditions or otherwise concerning the performance of the contract, the execution or failure to execute the same whether arising during the existence of the contract or after the termination of the contract, the same shall be referred to the sole arbitrator to be appointed by the Chairman-Cum-Managing Director of the Corporation.
- 26.2 The Arbitrator shall have power to call for such evidence by way of affidavits or otherwise as he thinks proper and it shall be the duty of the parties here to do or cause to be done, all such things as may be necessary to enable the Arbitrator or to make the award without any delay. The Arbitrator shall give a separate award in respect of each dispute or difference referred to him. The venue of arbitration shall be at New Delhi. The Award of the Arbitrator shall be final, conclusive and binding on all parties to the contract.
- 26.3 The law under the Arbitration and Conciliation Act, 1996 as amended by the Arbitration and Conciliation (Amendment) Act, 2015 shall be applicable to such proceedings. The cost of arbitration shall be borne by the parties to the dispute, as may be decided by the arbitrator(s).
- 26.4 The Courts in the city of New Delhi shall have the exclusive jurisdiction to entertain any application or other proceedings in respect of any disputes arising under this agreement and any award or awards made by the Arbitrator here-in-before can be challenged in the concerned Courts in the aforesaid city only.

Deputy General Manager
(Contract & Procurement)
NSIC Limited,
Okhla, New Delhi

SIGNATURE OF THE CONTRACTOR

SAFETY CODE

1. 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 hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical.)
2. Scaffolding of staging more than 3.6 m (12ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3ft.) 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. 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 3.6 m (12ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.
4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3ft.)
5. 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. (30ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11½") for ladder upto and including 3 m. (10 ft.) in length. For longer ladders, this width should be increased at least $\frac{1}{4}$ " for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or 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 proceedings at law that may be brought by any 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. (a) Excavation and Trenching - All trenches 1.2 m. (4ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length or fraction thereof, Ladder shall extend from bottom of the trench to at least 90 cm. (3ft.) above the surface of the ground. The side of the trenches which are 1.5 m. (5ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m. (5ft.) 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.

(b) Safety Measures for digging bore holes:-
 - (i) If the bore well is successful, it should be safely capped to avoid caving and collapse of the bore well. The failed and the abandoned ones should be completely refilled to avoid caving and collapse;
 - (ii) During drilling, Sign boards should be erected near the site with the address of the drilling contractor and the NSIC of the work;

- (iii) Suitable fencing should be erected around the well during the drilling and after the installation of the rig on the point of drilling, flags shall be put 50m all around the point of drilling to avoid entry of people;
 - (iv) After drilling the borewell, a cement platform (0.50m x 0.50m x 1.20m) 0.60m above ground level and 0.60m below ground level should be constructed around the well casing;
 - (v) After the completion of the borewell, the contractor should cap the bore well properly by welding steel plate, cover the bore well with the drilled wet soil and fix thorny shrubs over the soil. This should be done even while repairing the pump;
 - (vi) After the borewell is drilled the entire site should be brought to the ground level.
7. Demolition - Before any demolition work is commenced and also during the progress of the work,
- (i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - (ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.
 - (iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
8. All necessary personal safety equipment as considered adequate by NSIC should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned:-

The following safety equipment shall invariably be provided.

- (i) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- (ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes, shall be provided with protective goggles.
- (iii) Those engaged in welding works shall be provided with welder's protective eye shields.
- (iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- (v) 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 to the public. In addition, the contractor shall ensure that the following safety measure 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 manhole 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 off 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. NSIC shall 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 metres 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 to work 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 stop 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 NSIC regarding the steps to be taken in this regard in an individual case will be final.
9. The Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use :

- (i) White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
 - (ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of a paint in the form of spray.
 - (iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.
 - (iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
 - (v) Overall shall be worn by working painters during the whole of working period.
 - (vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
 - (vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of NSIC.
 - (viii) NSIC may require, when necessary medical examination of workers.
 - (ix) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.
10. 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 provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
11. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions :-
- (i) (a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and 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.
 - (ii) 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 give signals to operator.
 - (iii) 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 condition 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.
 - (iv) In case of departmental machines, the safe working load shall be notified by the NSIC. As regards contractor's machines the contractors shall notify the safe working load of the machine to NSIC whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.
12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting 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 to 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 should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

13. All scaffolds, 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.
14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
15. 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 Labour Officer or NSIC or their representatives.
16. Notwithstanding the above clauses from (1) to (15), 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.



FORM OF TENDER-CUM-BID SECURITY DECLARATION

To
The Deputy General Manager
Contract & Procurement,
The National Small Industries Corporation Limited,
Okhla Industrial Estate,
New Delhi-110020

I/ We have read and examined the following documents relating to.....

.....

(Name of the Work)

- (a) Notice inviting tender.
- (b) Instructions to Tenderers
- (c) Technical Specifications
- (d) General Conditions of Contract including Contractors, Labour Regulations, and Model Rules for Labour Welfare and Safety Code appended to these conditions together with the amendments there to If any.
- (e) Special Conditions of contracts if any.
- (f) Technical Specifications, Indicative Layout
- (g) Annexure B (Manufacturer's Authorization Form)
- (g) Schedule of Quantities/ Price Bid
- (h) Corrigendum/Addendum, if any

I/ We hereby tender for execution of the works referred to in the aforesaid documents upon the terms and conditions contained or referred to there in and in accordance in all respects with the specifications, designs, tender drawings and other relevant details at the rates contained in Schedule and within the period(s) of completion as stipulated in Appendix.

In consideration of I/ We being invited to tender, I/We agree to keep the tender open for acceptance for 120 days from the due date of submission thereof and not to make any modifications in its terms and conditions which are not acceptable to the Corporation.

A sum of Rs. 27,000/- is hereby forwarded as Earnest Money Deposit in the form of Demand Draft in favour of "The National Small Industries Corp Ltd." payable at New Delhi.

If I/We withdraw or modify the tender during the period of validity as mentioned above, or if I/We are awarded the contract and I/We fail to sign the contract, or to submit a performance security before the deadline defined in the tender document (unless the said deadline is extended by the Corporation), the Corporation shall be at liberty to reject our tender/cancel the contract and debar us from participating in any tender for a period of three years.

Should this tender be accepted, I /We agree to abide by & fulfill all the terms conditions of aforesaid document after the tender is accepted, I/we fail to commence the execution of the work as provided in the conditions.

I/We agree that Corporation shall without prejudice to any other right or remedy is at liberty to forfeit the said earnest money absolutely and reject the tender.

Dated.....

Witness.....

Date.....

Address.....

Signature of Bidder.....

Duly authorized to sign the tender

APPENDIX

1. Competent Authority :	C.M.D. NSIC or his Authorized executives
2. Earnest money/Security deposit	
a) Estimated cost of the Works;	Rs. 13,42,000/- (without GST)
b) Earnest money:	Rs. 27,000/-
c) Total Performance Security Deposit:	10%
3. Time allowed for execution of work	75 days
4. Authority competent to decide if “Any other cause” of delay is beyond contractor’s control	CMD, NSIC or his authorized representative
5. Liquidated Damaged	0.5% (one half of one percent) per week subject to a Maximum 10% value of the contract
6. Defect Liability & Warranty Period	12 months from the date of Completion of work in all respect
7. Authority competent to reduce compensation	CMD NSIC or his authorized executive.

SPECIAL CONDITIONS OF CONTRACT

1. During working at site, some restrictions may be imposed by Engineer-in-Charge/Security staff of Corporation or Local Authorities regarding safety and security etc., the contractor shall be bound to follow all such restrictions/instruction & nothing extra shall be payable on this account.
2. No compensation shall be payable to the contractor for any damage caused by rains lightning, wind, storm, floods Tornado, earth quakes or other natural calamities during the execution of work. He shall make good all such damages at his own cost; and no claim on this account will be entertained.
3. No labour hutment shall be allowed in the premises. All labourers should leave the site after day's work. The security & Watch ward for safeguarding the contractor's materials/work etc. shall be arranged at his cost only.
4. All rates quoted by the Bidders shall remain firm for the contract period/extended contract period.
5. If the contractor fails to proceed with the work within the stipulated time as specified from the date of issue of letter of intent/letter to proceed with the work, the Corporation shall reject the award of the work and the contractor shall be debarred from participating in any tender invited by the Corporation for a period of three years.

6. Execution of Work at Risk & Cost of Contractor:

The balance work, if any, left to be completed after the determination/ cancellation of the contract as per clause no. 21 of the 'General Conditions of Contract' shall be got executed by the Corporation as stipulated in the said clause at the risk and cost of the contractor and the additional expenditure, if any, incurred by the Corporation in getting the work executed in the manner stated above, the same shall be recovered from the dues of contractor. In case the dues of the contractor are not sufficient, the contractor shall be liable to deposit the excess amount incurred by the Corporation as communicated by the Engineer-in-charge within 30 days of written notice.

7. The work shall be executed in accordance with the latest CPWD/IS/ Manufacturer specification mentioned in the Schedule of quantity and in case of any discrepancy, the CPWD/IS/Manufacturer specifications, as applicable with latest amendments if any, shall be followed. The decision of the Engineer-In-Charge in this regard shall be final and binding upon the contractor.
8. The materials used for carrying out the work shall be of best available quality and the contractor has to carry out the necessary testing as per CPWD/IS specification for its conformity with specifications and all testing charges shall be borne by the contractor.
9. All the civil works, if required, like fixing of load hooks, making chases in the wall, drilling of holes, fixing of doors and finishing of jambs, providing scaffolding for carrying out complete works shall be arranged by the contractor and making good the damages. Nothing extra on these account shall be considered or paid.
10. The tenderer/bidder shall be fully responsible for the any injury or damage caused to the workmen deployed by him at site for carrying out the work and Corporation has nothing to do with such happenings and in no way shall be held responsible for the same.

11. INSPECTION & APPROVAL OF THE WORK BY LOCAL AUTHORITY:

The tenderer/bidder has to obtain all clearances & approvals from any statutory authority/local bodies pertaining to whole HVAC work, if any. The tenderer/bidder shall obtain all information relating to local regulations, Bye – laws, applicable, if any and all laws relating to his work or profession and his having to execute work as required. Tenderer/bidder shall obtain approval of the installation from the relevant inspection authority at all stages and on

completion of the installation work if any. However, any statutory fees required to deposit for obtaining approvals shall be paid by NSIC.

12. **Training:** The tenderer/bidder has to provide training to the NSIC maintenance staff and also operate the system (If required) for a period of 02 days from the date of handing over free of cost.
13. **Completion Drawings:** After completion of the work, the tenderer/bidder shall have to submit the following (which pertains to the work) set of drawings to NSIC.
 - a. Four (04) sets of hard copies and 3 Set of Soft copies of the layout/installation drawings related to HVAC Works.
14. Documents to be furnished on completion of installation:
 - a. Completion drawings as per clause 13 above.
 - b. Manufacturer's catalogues of all equipments and accessories, operation and maintenance manuals of all major equipments, detailing all adjustments, operation and maintenance procedure.
 - c. Manufacturer's Guarantee / Warrantee certificates of all the equipments & material etc.
 - d. Clearances/approvals of various statutory Bodies / Authorities for this system.
 - e. Any other information the Engineer – in – Charge may deem fit.

No completion certificate will be issued until the above drawings and documents are submitted to the Engineer – in – charge.
15. The preparation of working drawing and as built drawing related to HVAC works shall be the responsibility of the tenderer/bidder.
16. All statutory deductions as applicable shall be made from the due payment of the contractor.
17. The debris/ scrap generated during the course of execution of work shall be safely disposed of by the contractor outside the NSIC campus, New Delhi or as directed by the Engineer-In-Charge. Nothing extra shall be paid on account of lead, transportation, loading, unloading charges etc. to the contractor on this account.
18. The contractor shall note that necessary insurance covers are obtained by the selected Bidder after award of work, but, before start of execution of work and submitted to NSIC. It should be clearly noted that the contractor shall be fully responsible for any injury or damage caused to the workmen deployed by him at site for carrying out the work and Corporation has nothing to do with such happenings and in no way shall be held responsible for the same.
19. The tenderer shall quote their rates exclusive of GST. GST shall be released separately on submission of documentary proof of remittance of the same.
20. The Bidder should note that similar items may appear at more than one place in the Schedule of Quantities (Price Bid) and hence Bidder should quote rates for each item carefully. In case of any mismatch in the rates quoted for same item, the lower of the rates quoted for the same item in any section shall be considered for evaluation.
21. The materials used for carrying out the work shall be the ones being followed by CPWD/other PSUs and wherever applicable as approved by Engineer-in-charge.
22. Rates quoted by the Bidder shall be inclusive of all materials, labour, transportation, loading- unloading, taxes, duties, insurance, POL etc. required for completion of finish item of work in all respect and nothing extra on any account, whatsoever, except quoted rate for the item shall be considered for payment.



23. Water & electricity, if required, shall be made available at site by NSIC for execution of work without any cost. However, the contractor shall make the necessary arrangement for extension of water/power connection to the work site from the designated points, as per his requirement.
24. All communication should be addressed to Deputy General Manager (Contract & Procurement), The National Small Industries Corporation Ltd., Okhla Industrial estate, New Delhi-110020.

Signature of Bidder

TECHNICAL SPECIFICATIONS

A - VRV / VRF System

1. General

- a. The equipment for variable refrigerant volume/flow (VRV/VRF) system shall be air-cooled consisting of Outdoor units and multiple Cassette/Indoor units for cooling the space in summer and heating in winter (whenever Heat pumps are specified).
- b. Equipment / System offered must be of the most recent series/models incorporating the latest improvements in design.
- c. The system shall consist of suitable Outdoor units, Indoor units as required, interconnecting refrigerant piping, control cabling and accessories as required.
- d. It shall be possible to connect multiple Indoor units on a single refrigerant circuit. The Indoor units on any circuit may be of different type and should allow individual control.
- e. The minimum length of Refrigerant piping in a branch circuits or all circuits shall be as per chart given later on but the total piping length shall not be more than 300 m.

2. Outdoor Unit

- a. The Outdoor unit shall be a factory assembled unit housed in a sturdy weather proof casing, constructed from rust-proofed mild steel panels complete with powder coated finish.
- b. Each module of Outdoor units shall consist of scroll compressor(s), air-cooled condenser as Heat Exchanger, high efficiency propeller fans with low noise motor, internal Refrigerant piping, safety controls, Air Inlet grilles, fan protection grille etc. all enclosed in weather proof housing.
- c. The Outdoor unit shall have multiple scroll compressors and shall be able to operate even in case of breakdown of one of the compressors. (The smallest capacity unit may have only one compressor).
- d. The Outdoor unit shall be suitable for mix and match connection of various types and capacities of Indoor units as per demand.
- e. The noise level shall not be more than 62 dB(A) under normal operation, measured horizontally, 1 m away and 1.5m above ground.
- f. The Outdoor unit shall be modular in design and shall allow for side by side installation of multiple Outdoor units, to match the requirement.
- g. All the units shall be provided with built-in microprocessor control panel, for automatic operation and capacity control.
- h. The units shall be suitable for Refrigerant R-410A.

3. Compressor

- a. Each unit shall have single/multiple hermetically sealed scroll compressor.
- b. Both the spiral disc out rotor shall be mounted on a common shaft with antifriction bearing, suitable for handling both radial and axial thrust.
- c. The compressor casing shall be fabricated from mild steel of thickness capable of withstanding the working pressures. The casing shall have built-in oil reservoir with a sump of adequate capacity.
- d. The compressor shall be complete with a suitable High efficiency motor hermetically sealed within the compressor housing.
- e. The compressor housing shall also have oil reservoir for lubrication and suitable means like an oil pump or pressure differential device shall be provided to lubricate all moving parts.
- f. One or more compressor shall be provided with suitable sine wave or equivalent DC Inverter

for capacity modulation.

4. Condenser / Heat Exchanger and Fans

- a. The condenser shall be air-cooled type, where heat exchanger shall be fabricated from copper tubes, mechanically bonded to aluminum fins to form a cross fin coil. The aluminum fins shall be given anti-corrosion treatment.
- b. This treatment shall be suitable for areas of high pollution, moisture and salt laden air.
- c. The condenser fans shall be with multi blades of aerofoil design for low noise level, high efficiency and fitted with a high efficiency fan motor.
- d. The fan outlet shall be protected by a suitable wire guard on the outside.
- e. Suitable devices and heat exchanger means shall be built-in the unit to provide maximum super-cooling of refrigerant to increase system efficiency.
- f. The unit shall be complete with safety controls and suitable microprocessor based master control module.
- g. The module should be capable of connecting to web or to other devices through common BACnet or LAN networks.
- h. All the above component shall be housed in a compact mild steel cabinet having air Inlet louvers, safety guard on the condenser fan. The ambient shall be made weather proof using suitable anti corrosion treatment and finishing point.

5. Indoor Units (IDU)

- a. The system shall permit connection of a variety of non ductable or ductable Indoor units on to single refrigerant piping circuits, as per description given later.
- b. The capacity of the IDU shall vary as per the requirement of the given area.
- c. The types of IDU which may be connected may be any of these given below:
 - i. High Wall mounted Unit.
 - ii. Cassette type of different configuration.
 - iii. Concealed Ceiling suspended units.
 - iv. Ceiling Suspended High static Unit.
 - v. Ceiling Mounted Exposed unit.
 - vi. Floor standing (exposed or concealed) units.
 - vii. Ductable ceiling mounted High Capacity units.

d. Common features of Indoor Units

- i. The cooling / heating evaporator coils of the various types of Indoor Units shall be of direct expansion type.
- ii. The coils shall be fabricated from copper tubes of min 8 mm dia. with extended aluminium fins and designed for low velocity.
- iii. The fins shall be bonded to the tube using hydraulic expansion of tubes ensuring tight bonding between tube and fins for efficient heat transfer.
- iv. The coils shall be complete with well-designed tube circuiting and liquid distributor.
- v. All types of units shall have a built in electronic expansion valve and suitable control units.
- vi. The control units shall control temperature, fan speed and features specific to each unit

such as night mode, set back, etc.

- vii. Suitable drain pan and drain arrangement shall be part of all IDUS.
- viii. The control units shall permit control from a corded or a wireless remote controller.

6. High Wall Mounted units

- a. The high wall mounted units will be complete with cross flow fan, vertical DX coil, filters, control units and plastic outer cabinet.
- b. The cross flow fan should be of generous dia. and length to deliver the required air quantity at high speed and be very quiet with Noise level below 38 dbA.
- c. The fan assembly shall be directly mounted on a low noise, high efficiency motor.
- d. The DX evaporator coil and other common features shall be as given under Clause 5 of technical specifications
- e. The air filter shall be electrostatic type to remove dust, polan and other impurities.
- f. The outer casing shall be made of high grade plastic, complete with return air grille, motorized supply air louvered opening and suitable metallic back panel for mounting all items.

7. Cassette type units

- a. The cassette type Indoor Units may be of any of the three configurations, as given below and as may be mentioned in Bills of quantity.
- b. Four way or circular air distribution arrangement whichever is specified or is available.
- c. 2-way air distribution arrangement.
- d. 1-way or corner type air distribution arrangement.
- e. The unit shall be complete with turbo fans of multi-blade type, duly statically and dynamically balanced to give the required air flow.
- f. The filter shall be of synthetic type to suit the configuration.
- g. The unit housing shall have provision for connecting fresh air duct, wherever required.
- h. The unit shall be complete with built-in high head fail-safe pump with safety cutouts.
- i. The unit shall include all items as given in Clause 5 of technical specifications
- j. Each type of unit shall be supplied complete with Air distribution panel whether specified or not.
- k. The panel shall have removable return air core for cleaning air filter and maintaining motor etc.

8. Concealed ceiling suspended unit

The concealed units shall be complete with fan assembly, DX evaporator coil, air filter, outer casing and control unit.

- a. The fan shall be centrifugal type with housing and mounted directly on the motor shaft.
- b. The air filter shall be preferably electrostatic type.
- c. The outer casing shall be of heavy gauge G.I. sheet duly treated for long life and shall be complete with 25 mm deep duly insulated drain pan.
- d. The unit shall include all other items as listed in Clause 5 of technical specifications

9. Ceiling Suspended High Static Unit

- a. The unit shall be complete as described in Clause 8 of technical specifications except for the fan section.

- b. The fans shall be selected and designed for highest air static pressure, to allow for at least 5 to 6 m of ducting with grilles.

10. Ceiling Mounted Exposed Unit

- a. The exposed type unit shall be similar to the concealed type as described in Clause 5 of technical specifications except for the outer casing.
- b. The unit shall have a decorative outer casing with built-in supply air grilles and return grilles.
- c. The casing shall be with anti-corrosive treatment and finished with powder coated paint in attractive finish.

11. Floor Standing Units

- a. The floor standing units shall be vertical in design and may be suitable for concealed furred in installation or cabinet type for exposed installation.
- b. The fans shall be centrifugal type mounted directly on the motor shaft.
- c. The air filter shall be cleanable electrostatic type.
- d. The concealed type of vertical unit casing shall be of heavy gauge galvanized sheet with anti-corrosive paint.
- e. It should be complete with deep drawn insulated drain pan and shall permit easy access for filter cleaning and maintenance of coil and fan motor.
- f. The cabinet type of exposed vertical units shall in addition have a decorative cover with built in supply and return air grilles.
- g. All other components in both type shall be as in Clause 5 of technical specifications

12. Ductable Units

- a. The ductable indoor units shall be ceiling suspended type, complete with fan assembly, DX coil, air filters, control units and outer casing.
- b. The fan shall be centrifugal suction type with fan casing and direct driven motor. The fan shall have a minimum external static pressure of 100 Pa.
- c. The air filter shall be cleanable type with mold resistant resin net fixed to an integrally moulded plastic frame. The filter shall be sliding type with frame for ease of insertion and removal.
- d. The outer casing shall be of heavy gauge galvanized duly treated for corrosion resistance and finished with powder coated paint. It should have internal insulation to prevent condensation and absorb fan noise.
- e. There shall be suitable deep drawn insulated drain pan.
- f. All other component shall be as in Clause 5 of technical specifications.

13. Indoor Control Unit

- a. All types of indoor unit shall have one of the following controllers:
 - i. Cordless Type
 - ii. Corded Type
- b. Unless otherwise specified the controller to be provided shall be as follows:
 - i. Cordless Remote: Wall units or other units which are located in an enclosed cabin.
 - ii. Corded Remote: in open offices or and areas not covered above.
- c. A Computerized DIP control shall be used to maintain room temperature.

- d. The unit shall be equipped with a self-diagnosis for easy and quick maintenance and service.
- e. The LCD (Liquid Crystal Display) remote controller shall memorize the latest malfunction code for easy maintenance.
- f. It shall be able to control up to 16 Indoor units and change fan speed individually in the group.

14. Refrigerant Piping Capabilities

- a. The unit shall be capable of long length of piping and for providing lift of Refrigerant due to level difference between the Outdoor unit and Indoor units at the highest levels.
- b. The minimum distance capability of the unit shall be as follows:

i	Total Piping length of system	Max.	300 mtr.
ii	Actual length in any circuit	Max.	150 mtr.
iii	Equivalent piping length any circuit	Max.	175 mtr
iv	Level difference between ODU and IDU	Max.	50 mtr.

c. Refrigerant Piping:

- i. All refrigerant pipes and fittings shall be type 'L' hard drawn copper tubes and wrought copper fitting suitable for connection with silver solder phos copper.
- ii. All joints in copper piping shall be sweat joints using low temperature brazing and/or silver solder. Before joining any copper pipe or fittings, its interior shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be continuously kept clean of dirt etc. while construction the joints. Subsequently, it shall be thoroughly blown out using carbon dioxide/nitrogen.
- iii. Refrigerant lines shall be sized to limit pressure drop between evaporator and condensing unit to less than 0.2 kg per Sq.cm.
- iv. Removable type combination drier and filter shall be installed in liquid line of the refrigeration system incorporating a three way valve bypass. After ninety days of operation, liquid line drier and filter cartridges must be replaced.
- v. After the refrigerant piping installation has been completed the refrigerant piping system shall be pressure tested using, Freon mixed with nitrogen/carbon dioxide at a pressure of 20 Kg per Sq. cm. (High side) and 10 Kg per Sq. cm (Low side) pressure shall be maintained on the system for a minimum of 12 hours. The system shall then be evacuated to a minimum vacuum of 70 cm. of mercury and held for
- vi. 24 hours, during which time, change in vacuum shall not exceed 12 cm of mercury. Vacuum shall be checked with vacuum gage.
- vii. All refrigerant piping shall be installed strictly as per the instructions and recommendations of air conditioning equipment manufacturers.

15. Testing & Balancing:

- a. All piping shall be tested to hydrostatic test pressure of at least two and half times the maximum operating pressure, but not less than 24 hours. All leaks and defects in joints revealed during the testing shall be rectified and gotten approved at site.
- b. Piping repaired subsequent to the above pressure test shall be retested in the same manner.

- c. System may be tested in sections and such sections shall be securely capped, then retested for entire system.
- d. The contractor shall give sufficient notice to all other agencies at site, of his intention to test a section or sections of piping and all testing shall be witnessed and recorded by Owner's site representative.
- e. The contractor shall make sure that proper noiseless circulation of fluid is achieved through all coils and other heat exchange equipment in the system concerned. If proper circulation is not achieved the contractor shall rectify the defective connection. He shall bear all expenses for carrying out the above rectifications, including the tearing up and refinishing of floors and walls as required.
- f. The contractor shall provide all materials, tools, equipment, instruments, services and labour required to perform the test.
- g. Complete certified report shall be submitted for evaluation and approval. Upon approval, four copies of the balancing report shall be submitted with complete drawings and documents.

16. Refrigerant Piping

- a. All refrigerant piping for the VRV/VRF system shall be carried out using hard drawn seamless copper pipe using either soft, half hard or hard pipes as per chart below:
- b. The piping thickness shall be as follows:

OD(Inch)	OD(mm)	Min. Wall Thickness (mm)	Soft	Half Hard or Hard
1/4"	6.35	0.80	√	√
3/8"	9.52	0.80	√	√
1/2"	12.70	0.80	√	√
5/8"	15.88	1.00	√	√
3/4"	19.05	1.00	√	√
7/8"	22.20	1.00	X	√
1.1/8"	28.58	1.00	X	√
1.3/8"	34.92	1.10	X	√
1.5/8"	41.28	1.25	X	√

- c. The branching of refrigerant piping from the main line shall be carried out using either specially designed 'Tee' connectors or 'Y' joints. These joint should ensure that each branch receives the required refrigerant flow.
- d. All pipe sizing shall be on the basis of sizing data of the concerned manufacturer and should ensure adequate oil return back up to the compressor.

17. Pipe Insulation

a. Refrigerant Pipe Insulation

- i. The whole of the liquid and suction refrigerant lines including all fittings, valves and strainer bodies, etc. shall be insulated with 19mm thick Nitrile close cell rubber, so that condensation does not occur.
- ii. The joints shall be properly sealed with synthetic glue to ensure proper bonding of the ends.

b. Drain pipe insulation

- i. Drain pipe carrying condensate water shall be insulated with 6 mm nitrile rubber insulation having K value 0.037 W/mk at a mean temperature of 20°C at min. density of 55 kg. /m³.
- ii. The joint shall be properly sealed with synthetic glue to ensure proper bonding of the ends.

18. Centralized Intelligent Touch Remote controller

- a. A multifunctional compact centralized controller shall be provided with the system.
- b. The Graphic controller shall act as an advanced air conditioning management system to give complete control of VRV/VRF air conditioning equipment. It shall have ease of use for the user through its touch screen. Icon display and colour LCD display.
- c. It shall be able to control up to 64 groups of Indoor Units with the following functions:
 - i. Starting/stopping of air-conditioning as a zone or group of individual units.
 - ii. Temperature setting for each Indoor units of zone.
 - iii. 20.3.3 Switching between temperature controls modes, switching of the fan speed and direction of airflow, enabling/disabling of individual remote controller operation.
 - iv. Monitoring of operation status such as operation mode & temperature setting of individual indoor units, maintenance information, and troubleshooting information.
 - v. Display of air conditioner operation history.
 - vi. Daily management automation through yearly schedule function with possibility of varying schedules.
 - vii. The controller shall have wide screen, user friendly colour LCD display which could be wired by a non-polar 2 wire transmission cable to a desired distance from the Indoor unit.

Deputy General Manager
(Contract & Procurement)
NSIC Limited,
Okhla, New Delhi

List of Approved 'Makes' for HVAC Works

Items	Approved Makes
EQUIPMENT/UNIT	
VRV/VRF System/Split units	Daikin/Mitsubishi Electric/Hitachi/O-General/Carrier/Equivalent
FANS	
Inline Fan/Propeller Fan	System air/Air Flow/Magneto//Equivalent
Fan Section/HRV	Edgtech/Crystal/VTS/Equivalent
PIPING	
Refrigerant Copper Pipe	Mettube/Totaline/Rajco Metals/Jindal Refrigeration/Equivalent
PVC Drain Pipe	Polypack/Supreme/Akg/BEC/Setia/Equivalent
INSULATION	
Nitrile Rubber	A-flex /Armaflex/superflex/K-flex/Supreme/Equivalent
Crossed linked Polyethylene	Torcellene/Thermobreak/Supreme/Equivalent
ELECTRICAL	
Electrical Panel Board/ Motor Control Centre (Power Coated)	EAP, Tricolite, CWS, Electra Power, RR Control/Equivalent
Power Cable	KEI/Gloster/ L&T/National/Polycab/Havells/Equivalent
Control Cable	KEI/ Gloster / L&T/National/Polycab/Havells/Equivalent
XLPE / PVC Insulated Aluminum Conductor Armored Power Cables	Skytone/Universal/Delton/NICCO/ RPG Asian/Havells/Equivalent
DUCTING & GRILLS	
Rectangular	Zeco/ Voltas/Ecoduct/Equivalent
Round	Atco/GP Spiro/Equivalent
G.I. Sheet Metal Duct	Jindal/National/Tata/Equivalent
Grilles/ Diffusers	Air Master/ Airflow/Dynamic/Ruskin-titus/Equivalent
VCD/Gravity louvers/ Exhaust & fresh air louvers	Air Flow/ Mapro/Tristar/Dynamic/Equivalent
Fire Dampers	Airflow/ Tristar/ Dynamic/Equivalent

Note:

1. The tenderer/bidder shall supply ISI marked material for the makes/brands indicated above. In case, the firm is not manufacturing ISI marked material for any of the brands, first quality material shall be accepted. The sample of the material shall in either case have to be got approved from the Engineer – in – charge.

2. Material where no make / brand has been mentioned, In this case ISI marked samples shall be submitted by the contractor for approval of Engineer – in – charge.
3. For those class of materials, where no firm exists with ISI approval, sample of the first quality material of the firm shall be submitted for the approval of Engineer – in – charge.
4. Tenderer/bidder will be responsible to ensure the quality of products listed in approved list of makes/brands. Contractor will have to replace the defective and substandard material at his own cost

MANUFACTURERS' AUTHORIZATION FORM

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.]

Date : *[insert date (as day, month and year) of Bid Submission]*

Tender No. : *[insert number from Invitation for Bids]*

To : *[insert complete name and address of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having registered office at *[insert full registered address of Manufacturer]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

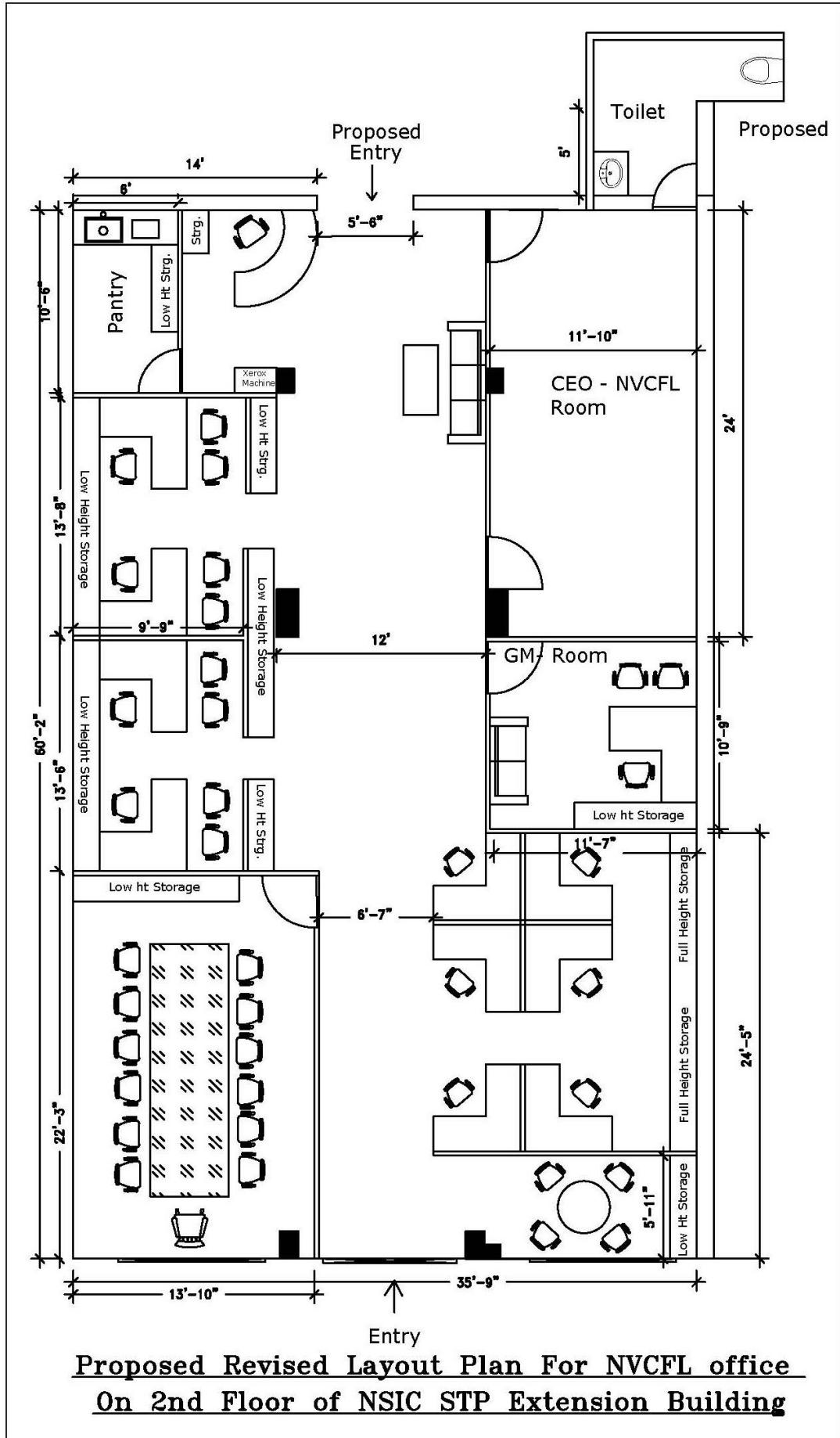
Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of Bidder]*

Dated on _____ **day of** _____ , _____ *[insert date of signing]*

INDICATIVE LAYOUT PLAN OF THE SITE



**BILL OF QUANTITY (BOQ) FOR THE WORK OF SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF
24HP VARIABLE REFRIGERANT FLOW (VRF) HVAC AT NVCFI OFFICE, NSIC HO COMPLEX, OKHLA
ESTATE, NEW DELHI – 110020**

(To be submitted in separate sealed envelope II)

S.No.	Description	Unit	Qty.	Rate	GST (in %)	GST (in Figures)	Amount (Including GST)
A	<u>Variable Refrigerant Volume System/Variable Refrigerant Flow</u>						
	Supply, Installation, testing and commissioning of AIR COOLED & INVERTER BASED VARIABLE REFRIGERANT VOLUME / VARIABLE REFRIGERANT FLOW MODULAR TYPE AIR CONDITIONING SYSTEM with R410A suitable for 415 ± 10%, 50 Hz. The unit shall consist of indoor units, external condensing units, refrigeration & drain piping, Header & required REFNET Y/T Joints, condensation water disposal mechanism, Power & Control Wiring, Central Corded Remote and Cordless Remotes and all other standard accessories required or operation of the AC Unit.						
1	<u>Outdoor Units</u>						
	Supply Installation, Testing & Commissioning of modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling and heating, having all hermetically sealed inverter type Scroll Compressor(s), minimum two compressors for above 14 HP modules, microprocessor based Controller, top discharge type condensing unit(s), with R 410 A Refrigerant, vibration isolators, with suitable foundation etc. complete as required. The unit shall deliver the rated capacity at AHRI Conditions and work even at 50°C ambient temperature without tripping. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply. The unit shall be filled with first charge of the refrigerant and ready for use as required. The COP at AHRI conditions shall not be less than 3.1 and IEER not less than 6.5. The work will include lifting/shifting of of the outdoor units from ground.						
1.1	24 HP	No.	1				
2	<u>Cassette Type Indoor Units:</u> Supply, installation, testing and commissioning of following minimum capacity 4-way flow VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration isolation, cord less remote control etc., suitable for operation on single phase 230 V ± 10%, 50Hz AC supply, complete, as required. The unit shall have automatic force shut down provision in case of fire						

	on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.						
2.1	2.0 TR	No.	3				
2.2	3.0 TR	No.	4				
2.3	1.5 TR	No.	1				
3	Installation & Allied Works						
3.1	Supply and filling of topping R410A gas for commissioning of complete system as per site requirements	KG	25				
4	Copper Refrigerant Piping						
	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 with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastometric nitrile rubber tubular sleeves sections of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required :						
4.1	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	80				
4.2	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	60				
4.3	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	60				
4.4	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	120				
4.5	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	90				
4.6	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	70				
	NOTE:-1)The Copper Piping & Piping Circuit should be with Minimum Number of joints, which shall be attained by : (i) Using One End Expanded Tubes (ii) Bending the tubes instead of using elbow joints wherever 90 degree bending is required. (2)Piping should be routed at site in such a manner, that brazed joints in the refrigeration piping are kept to a minimum. (3) The makes of tube fittings shall be same as that of tubes. (4) The thickness of fittings used shall be same as that of the pipe. (5) It is to be noted that the refrigerant & drain piping shall be done under existing false ceiling. It shall ensure that the same shall not be damaged during execution of the work. In case any damage occur to false ceiling, the same shall be replaced by the contractor without any extra charge.						
5	Perforated GI Tray with cover, supports for copper piping outside the building						
5.1	300 mm X 80 mm	Mtr.	40				
6	Drain Piping						
	Providing & fixing rigid PVC Condensate drain piping complete with fittings, supports as per specifications and insulated with 6 mm class 'O' nitrile rubber tubular type for wall only including chase cutting and rough finishing with chicken wire mesh.and Drain piping Leakage Testing to be done Horizontally and Vertically.						

6.1	40 mm dia	Mtr.	100				
6.2	32 mm dia	Mtr.	100				
6.3	25 mm dia	Mtr.	200				
7	Control & Transmission Wiring						
7.1	Supply, installation, testing and commissioning of control cum transmission wiring of 2 core x 1.5 sqmm copper in suitable PVC conduits between indoor and outdoor unit & outdoor units to central remotes controllers.	Rm	90				
8	Power Cable						
	Providing and fixing of PVC armoured copper cables from panel boards to the units through walls/ceiling with appropriate clamps and fixing arrangements etc. as per specifications and drawings.						
8.1	4 Core - 16 mm ² Cu for outdoor unit	Mtr.	20				
8.2	3 Core - 2.5 mm ² Cu for indoor unit	Mtr.	20				
9	Isolators						
9.1	Supply, Installation, Testing & Commissioning of Weather proof box with ELCCBs of suitable ratings near the outdoor units for isolations	No.	2				
9.2	Supply, Installation, Testing and Commissioning of Inline Fan 450CFM with GI Ducting and Al Grill/Diffuser	Lot	1				
10	Civil Foundation for 24 HP Outdoor Units.	Each	2				
11	ODU STAND						
11.1	Supply & installation of floor mounted Heavy Duty MS Stand for Outdoor Unit	No	2				
12	Supply and laying of 4 core x 35 sq. mm . Armoured XLPE LT Al. Cable on walls.	Mtr.	50				
13	Total Amount in Rupees (including GST)						

The Quantities may increase or decrease by +/- 10%

**Total amount in words-Rupees _____
(including GST).**

Signature of Tenderer with seal