

No. EI-B-GA/14/0011/2013-EBC

ERNET India

(An Autonomous Scientific Society Under Department of Electronics and Information Technology, GoI)
Jeevan Prakash Building, 10th Floor,
25, K.G. Marg,
New Delhi – 110 001

Subject: Supply, Installation, Commissioning and Testing of Air conditioning including all associated accessories and allied works and Fire Suppression Work at ERNET India, Bangalore

Kindly refer to our advertisement appeared in Times of India Bangalore edition dated 09.02.2014 in connection with tender for air conditioning work, fire suppression unit work to be carried out at ERNET Regional Centre, Bangalore. The tender document is attached herewith for your information.

2. All the bidders requested to submit their bids in confirmatory with tender document by the due date.

To

All Prospective bidders

Tender Document

Tender No. EI-B-GA/14/0011/2013-EBC

Dated: 11/02/2014

Supply, Installation, Commissioning and Testing of Air conditioning including all associated accessories and allied works and Fire Suppression Work at ERNET India, Bangalore

- | | | |
|---------------------------------------|---|-----------------------------------|
| a) Commencement of site visit | : | 11 th Feb 2014 onwards |
| b) Last date of submission of queries | : | 18 th Feb 2014 |
| c) ERNET responses on queries, if any | : | 25 th Feb 2014 |
| d) Due date for bids submission | : | 4 th Mar 2014, 2PM |
| e) Date of opening of bids | : | 4 th Mar 2014, 3PM |

Tender Fees	:	Rs. 2000/- (Rupees Two Thousand only)
EMD Amount	:	Rs. 25000/- (Rupees Twenty Five Thousand only)

ERNET India

(An Autonomous Scientific Society Under Department of Electronics and Information Technology, GoI)
No. 397, 13th Cross, Sadashiva nagar,
Bangalore – 560 080
Telefax: 080-23617532

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TENDER NOTICE

1. Tender documents may be purchased from the Office of ERNET India No-397,13th Cross, Sadhashiv Nagar, Bangalore – 560 080. Tender fee **Rs. 2000/-**, a non-refundable fee in the form of Demand Draft/Banker's Cheque on any Nationalized/ Scheduled bank payable at **ERNET India, New Delhi**, Interested tenders may obtain further information at the same address. The tender document can also be downloaded from the ERNET website (www.eis.ernet.in).
2. Tenders must be accompanied by earnest money deposit in form of DD in name of ERNET India, Specified for the work in the Table below. Earnest money deposit will have to be in any one of the forms as specified in the Tender document and shall have to be valid for 90 days beyond the validity of the tender.
3. Tenders must be delivered to ERNET India, No-397,13th Cross, Sadhashiv Nagar, Bangalore – 560 080 on or before **4th Mar 2014, 2 PM** and Tenders will be opened on the **4th Mar 2014, 3 PM** in the presence of the Tenderers who wish to attend. If the office happens to be closed on the date of receipt of the tenders as specified, the tenders will be received and opened on the next working day at the same time and venue.
4. Other details can be seen in the tender documents.

TABLE

No.	Name of work	Earnest Money Deposit	Cost of document (Rs.)	Period of completion
1	Supply, Installation, Commissioning and Testing of Air conditioning and General Air conditioning and Fire Suppression work @ Bangalore including all associated accessories and allied works	Rs. 25000/-	Rs. 2000/-	6 Weeks

Seal of the Office

Eligibility Criteria

I. General

1. The Bidder can be an Organization/Institute/Company/Corporation/ Society/ Trust/ Firm/ INDIVIDUAL /registered incorporated in India fulfilling at least the following criteria and must also submit documentary evidences in support of fulfilling these conditions.
2. The Bidder can be **OEM/** Company/Corporation/Society/Trust/Firm, registered in India and should be in existence prior to 01-04-2008. Consortium in any form is not allowed.
3. The Bidder must Bid for all the works mentioned in the tender documents. Partial Bidding would disqualify the bidder.
4. The bidder should have successfully completed at least two project of similar nature for a value not less than 20 Lakh in the last 3 years
5. The bidder is expected to inspect the site of the proposed work and acquaint himself with the site conditions approaches, availability of raw materials, geological and weather conditions etc. before submitting his quote. He must go through all the specifications and the tender documents. It will be deemed that the bidder is/are fully conversant with the existing site conditions.

II. Documents Establishing Bidders Eligibility:

1. In case bidder is a company – Certified copy of the Certificates of incorporations for companies and Memorandum and articles of association.
Or
In case the bidder is a registered society – Certified copy of registration deed with objects of constitution of society.
Or
In case bidder is a corporation – Authenticated copy of the parent stature.
or
In case of proprietary concern- documents authenticating the same

Certified copies of documents submitted, as above, must be signed in ink and carry the seal of the signatory.
2. The quoted products by bidder should not be the “end-of-sale” and “end-of-support” by the respective OEM/Manufacturer.
3. The bidder should submit the Manufacturing authorization form (MAF) from the OEM for the product quoted. Non-submission of MAF is liable to render their Tender non-bonafide.
4. OEM/Manufacturer should have Toll free no. to register/complaints.
5. List of present Directors / Owners/ Executives Council members/ trustees/ Board members as applicable.
6. Copy of last three years Income tax return.
7. Copy of Service Tax Registration Certificate.

8. Successful bidder must produce copy of Karnataka VAT Registration certificate before signing of contract.
9. General Power of attorney / Board of Directors resolution /Deed of Authority executed in favor of person(s) authorized to sign the Bid Document and the contract and all correspondences/document thereof.
10. Audited Balance Sheet and Income statement for three years of 2010-2011 and 2011-2012, 2012-13 duly signed in ink by the authorized signatory of the bidder and his/her auditor.
11. Any other Documentary evidence (signed in ink by authorized signatory) providing that bidder fulfills the eligibility criteria.
12. General information/profile on the bidders company

INSTRUCTIONS TO TENDERERS

The completed Tender documents including the ORIGINAL and duplicate copies of “BILL/SCHEDULE OF QUANTITIES” should be submitted to the **ERNET India, Bangalore** details given in the Tender Notice.

Preparation of Tenders

1. Documents comprising the Tender;

The bids submitted by the Tenderer shall be in two separate covers and shall contain the documents as follows:

- (a) First Sealed Cover: (Should be indicated clearly as “Cover for Technical Bids)
 - (i) Earnest Money Deposit;
 - (ii) Qualification Information as specified in the eligibility criteria.
 - (iii) All the relevant documents showing make, model, supplier/manufacturer, technical Specifications and warranty information.
- (b) Second Sealed Cover: (Should be indicated clearly as “Cover for Commercial Bids)
 - (i) Priced Bill of Quantities cover along-with tender drawings and tender document
- (c) Both sealed covers should be first sealed separately and then both the covers to be placed in a single sealed bigger cover (3rd cover). This bigger cover should be addressed to:
ERNET India, No. #397, 13th Cross, Sadashiva Nagar, Bangalore – 560080.

(d) The envelope should bear the inscription:

"Supply, Installation, Commissioning and Testing of Air conditioning and Fire Suppression Works at ERNET India, Bangalore"

"Tender Enquiry No: EI-B-GA/14/0011/2013-EBC"

"Due date & Time: 4th Mar 2014, 2 PM"

"Due date & Opening of bids: 4th Mar 2014, 3 PM"

- 2) Tenderers should ensure that their tenders are received before the date and time specified above.
- 3) Bidder/Contractors are requested to put their firm's endorsement on each page of the tender documents as a token of acceptance.
- 4) Bidder/Contractors should fill in all the relevant blanks and put their signature in the relevant places indicated in the documents.
- 5) The Schedule of Quantities should be filled as follows:
 - a. The “Rate” Column to be legibly filled in ink in both figures and words.
 - b. Amount' column to be filled for each item and the total amount for each trade to be given.
 - c. All corrections to be initialed.
 - d. Contractor's signature to be put on each page of the Schedule of quantities and in the “Abstract Sheet”.
 - e. The “Amount” column for alternative items for which the quantities are mentioned should be filled up.
 - f. The “Rate” column for "Rate only" items should be filled up.
- 6) No alterations or additions are to be made by the Contractors to the tender document. Violation of this instruction will attract rejection of the tender at the discretion of client.
- 7) The Sealed Envelopes shall be **opened at the specified time** in the presence of the tenderer's accredited representatives if they desire to attend.

- 8) The Contractor is required to check the numbers of the pages and should any be found missing or in duplicate, or the figure or writing indistinct, he must inform the client at once and have the same rectified. Should the Contractor be in doubt about the precise meaning of any item or any provision or if he wants any clarification, he must inform the client before the last date of submission of queries. No claim will be allowed in respect of errors in the Contractors tender due to any mistake in the Schedule of Quantities, which should have been but was not rectified in the manner described above.
- 9) The articles of Agreement should not be filled. This will be done at the time the contract is awarded, in the case of the successful tenderer only.
- 10) In the event of arithmetical error/errors or discrepancies being discovered in the Contractor's tender the rates mentioned in words in the tender copy marked 'Original' will be taken as bonafide. Rate in words will be taken in precedence over rate in figures. If the amount of an item does not tally with the rate quoted in words, the rate shall be taken as correct.
Contractors are forewarned that no errors whatsoever arithmetical or otherwise will be permitted in their tenders. Tenders containing many errors are liable to be considered as Non-bonafide at the discretion of client.
- 11) Tenderers should note that their tenders should remain open for consideration for a minimum period of 90 days from the date of the opening of tenders.
- 12) The client reserves the right to accept any tender or accept tenders in part or to reject any or all tenders without assigning any reasons thereof and will not be liable to offer any explanation whatsoever.
- 13) Contractors are requested to note that non-compliance of the above instructions is liable to render their Tender non-bonafide.
- 14) **Opening of First Cover of all Tenders and evaluation to determine qualified Tenderers:**
The Employer will open the First Covers of all the Tenders received (except those received late or withdrawn), in the presence of the Tenderers or their representatives who choose to attend at ERNET Bangalore on the date and the place as specified. In the event of the specified date of Tender opening being declared a holiday for the Employer, the Tenders will be opened at the appointed time and location on the next working day

CONTRACTOR

ARCHITECT/ CONSULTANT

OFFER LETTER FROM THE TENDERER TO THE CLIENT

To
Registrar & CPO,
ERNET India,
Jeevan Prakash Building,
25, K.G. Marg
New Delhi-110001.

Name of work: Supply, Installation, Commissioning and Testing of Air conditioning, General Air Conditioning and Fire Suppression Works including all accessories and allied works at ERNET India, Bangalore

Dear Sir,

1. Having examined the drawings, specifications conditions, form of item rate contract, schedule of quantities relating to the above work and having visited and examined the site of the proposed works and having acquired the requisite information relating thereto as affecting the tender invited by you on behalf of the ERNET India.
2. I/We, the undersigned, hereby offer to construct, execute and complete the above work to the satisfaction of the Client on item rate basis in strict accordance with the contract conditions and specifications for the sum of Rs._____ (Rupees_____only) or such other sums as may be ascertained in accordance with the said conditions.
3. I/We, undertake to complete and deliver the whole of the works within a period as specified in Appendix to the General Conditions of Contracts. I/We shall be under the obligation to pay the sum as stated in the said Appendix for the period that the works shall remain incomplete as compensation subject to the condition of contract relating to an extension of the time.
4. In the event of the tender being accepted
I/We further agree to the deduction of 10 % of the value of each running bill as stated in the said Appendix as Retention Money.

Yours faithfully,

CONTRACTOR.

GENERAL CONDITIONS OF CONTRACT

1. INTERPRETATION

In construing these conditions, the specifications, the schedule of quantities, tender and Agreement, the following words shall have the meaning here in assigned to them except where the subject or context otherwise requires.

Employer: The term "Employer" or shall denote **ERNET INDIA, NEW DELHI** and any of its employees or representative authorized on their behalf.

i) **Architects:** The term "Architects" or "Consultants" shall mean **M/s. VISHWANNATH ASSOCIATES**, No. 31, 2ND Cross, 8th Main, Off Palace Road, Vasanthnagar, Bangalore -52 or in the event of his/their ceasing to be the Architects for the purpose of this contract such other person/s the Employer shall nominate for the purpose.

ii) **Engineer:** The term "Engineer" shall mean authorised Engineer appointed by Architect or Clint for day to day supervision of works at site as per tender terms.

iii) **Contractors:** The term "Contractor"," Bidder" or "Tenderer" shall mean _____ (Name and address of Contractor) and his/their heirs, legal representatives, assigns and successors.

iv) **Site:** The "site" shall mean the site located at **No-397,13th Cross, Sadhashiv Nagar, Bangalore**, where the works are to be executed on the site plan including any building and erections thereon allotted by the Employer for the contractor's use.

v) **Drawings:** "Drawings" means the drawings referred to in the Specification and any modification of such drawings approved in writing by the Engineer and such other drawings as may from time to time be furnished or approved in writing by the Engineer. The work is to be carried out in accordance with drawings, specifications, the schedule of quantities and any further drawings, which may be given by the Employer/Architects/Consultants during the execution of the work.

All drawings relating to work given to the contractor together with copy of schedule of quantities are to be kept at site and the Employer/Architects/Consultants shall be given access to such drawings or schedule of quantities whenever necessary.

In case any detailed Working/Fabrication/Shop Drawings are necessary, contractor shall prepare such detailed drawings and/or dimensioned sketches thereof and have it confirmed by the Employer/Architects/Consultants prior to taking up such work.

The contractor shall ask in writing for all clarifications on matters occurring anywhere in drawings, specifications and schedule of quantities or to additional instructions at least 10 days ahead from the time when it is required for implementations so that the Employer may be able to give decision there on.

vi) "The Works" shall mean the work or works to be executed or done under this contract and shall include materials, apparatus, equipment, plant, fittings and other things for incorporation in the works.

a. "Contract " means the contract effected by the contractor's Tender and the Employer's acceptance thereof comprising (in addition to the Tender and Acceptance) the priced bill of Quantities and Schedules, Schedules of particulars (if any), Specifications and Drawings, these General Conditions of Contract, Special Conditions contained in or attached to any of the forgoing documents, any alterations agreed in writing between the parties before the formal acceptance of the Tender, all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

- b. "Specification" means the specification annexed to or issued with these conditions and includes Indian or British or other approved standard specifications where required by the specification and where such a specification is not available, the specification approved by the Architect and the Engineer.
- c. "Approved" means approved in writing including subsequent written confirmation of previous verbal approval and "approval" means approval in writing including as afore said.
- d. "Market rate" means the rate as prevailing in the market and recommended by the Engineer and Architect and as approved by the Employer on the basis of cost of materials, labour, plant etc Exclusive of any tax, duty, octroi etc. at the time of execution of work.
- e. "The Schedule of Quantities" or "Priced Schedule of Quantities" shall mean the schedule (or bill) of quantities as specified and forming part of this contract.
- f. "Act of Insolvency" shall mean any act such as defined by the Presidency Towns Insolvency Act or in Provincial Insolvency Act or any amending statutes.

2. SCOPE

The work consists of **SUPPLY, INSTALLATION, COMMISSIONING AND TESTING OF AIR CONDITIONING AND FIRE SUPPRESSION SYSTEM INCLUDING ALL ASSOCIATED ACCESSORIES AND ALIED WORKS AT BANGALORE** In accordance with the "drawings" and "Schedule of Quantities". It includes furnishing all materials, labour, tools and equipment and management necessary for and incidental to the construction and completion of the work. All work, during its progress and upon completion, shall confirm to the lines, elevations and grades as shown on the drawings furnished by the Employer/Architects/Consultants. Should any detail essential for efficient completion of the work be committed from the drawings and specifications, it shall be the responsibility of the contractor to inform the Employer/Architects/Consultants and to furnish and install such detail with Employer's/Architects'/Consultants' concurrence, so that upon completion of the proposed work the same will be acceptable and ready for use.

Employer/Architects/Consultants may in their absolute discretion issue further drawings and/or written instruction, details, directions and explanations, which are, hereafter collectively referred to as "The Employer's instructions" in regard to:

- a) The variation or modification of the design quality or quantity of works or the addition or omission or substitution of any work.
- b) Any discrepancy in the drawings or between the schedule of quantities and/or drawings and/or specification.
- c) The removal from the site of any defective material brought there on by the contractor and the substitution of any other material thereof.
- d) The demolition, removal and/or re-execution of any work executed by the contractor/s.
- e) The dismissal from the work of any persons employed there upon.
- f) The opening up for inspection of any work covered up.
- g) The rectification and making good of any defects under clauses hereinafter mentioned and those arising during the maintenance period (retention period).

The Contractor shall forthwith comply with and duly execute any work comprised in such Employer's/Architects'/Consultants' instructions, provided always that verbal instructions, directions and

explanations given to the contractors or his representative upon the works by the Employer/Architects/Consultants shall if involves a variation, be confirmed in writing to the contractor/s within seven days. No works, for which rates are not specifically mentioned in the priced schedule of quantities, shall be taken up without written permission of the Employer/Architects. Rates of items not mentioned in the priced schedule of quantities shall be fixed by the employer in consultation with the Architects as provided in Clause “variation”.

Regarding all factory made products for which ISI marked products are available, only products bearing ISI marking shall be used in the work.

3. TENDERER TO VISIT THE SITE

Intending tenderer shall visit the site and make himself thoroughly acquainted with the local site condition, nature and requirements of the works, facilities of transport condition, effective labour and materials, access and storage for materials and removal of rubbish. The tenderer shall provide in their tender for cost of carriage, freight and other charges as also for any special difficulties, including police restriction for transport etc., for proper execution of work as indicated in the drawings. The successful tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the Employer/Architects might be deemed to have reasonably been inferred to be so existing before commencement of work.

Please Note: Tenderer visit to the site is mandatory before submission of actual bids, those bidders/Tenderers visiting the site are only allowed to participate in the tendering process. Queries, if any, after site visit must be communicated to ERNET India through mail at sameer@eis.ernet.in or kesavan@eis.ernet.in with copy to registrar@eis.ernet.in or by hand to the officer signing this enquiry at ERNET India latest by 18th Feb 2014. The clarifications against the queries received shall be uploaded in our website.

4. TENDERS

1. The entire set of tender paper issued to the tenderer should be submitted fully priced and also signed at appropriate places as detailed in the Instructions to Tenderers.
2. No modifications, writings or corrections can be made in the tender papers by the tenderer, but may at his option offer his comments or modifications in a separate sheet of paper attached to the original tender papers.
3. The Employer reserves the right to reject the lowest or any tender and also to discharge any or all of the tenders for each section or to split up and distribute any item of work to any specialist firm or firms, without assigning any reason.
4. The tenderers should note that the tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct, workable and self-supporting. If called upon by the Employer/Architects/Consultants detailed analysis of any or all the rates shall be submitted. The Employer/Architects shall not be bound to recognize the contractor’s analysis.
5. The works will be paid for as “measured work” on the basis of actual work done on item rate basis and not as “lump sum” contract.

6. All items of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly, related to and reasonably detectable from the drawings, specifications and schedule of quantities and no further extra charges will be allowed in this connection. In the case of lump-sum charges in the tender in respect of any item of works, the payment of such items of work will be made for the actual work done on the basis of lump-sum rates as will be assessed to be payable by the Employer/Architects.
7. The Employer has power to add /to omit any work as shown in drawings or described in specifications or included in schedule of quantities and intimate the same in writing but no addition, omission or variation shall be made by the contractor without authorization from the Employer. No variation shall vitiate the contract.
8. The tenderer shall note that his tender shall remain open for consideration for a period of **Ninety** days from the date of opening of the tender.

5. AGREEMENT

The successful contractor may be required to sign an agreement as may be drawn up to suit local conditions and shall pay for all stamps and legal expenses, incidental thereto.

6. PERMITS AND LICENCES

Permits and Licenses for release of materials, which are under Government control, shall be arranged by the contractor. The Employer may render necessary assistance, sign any forms or applications that may be necessary but shall not be responsible for actual procurement or for any delay in procurement.

It may be clearly understood that no compensation or additional charges can be claimed by the contractor for non-receipt of any controlled materials in due time on this account or according to his own requirements.

The contractor shall at his own cost arrange for storage shed adequate for taking delivery and storing of the quantity of controlled materials released by the authorities or supplied by the Employer. The costs of storing, transporting, etc., of all materials including those under Government control are to be included by the tenderer in his quoted rates.

The Employer/Architects/Consultants shall be indemnified against all Government or legal actions for theft or misuse of controlled materials in the custody of the contractor.

7. TAXES AND DUTIES: The tenderers must include in their tender prices quoted for all duties royalties, cess and sales tax or any other taxes or local charges if applicable. All taxes are to be included

8. PROVISIONAL SUMS (P S)

All provisional sums described in the schedule of quantities as P S shall be exclusively allotted to the purchase of materials and not for any handling and fixing to be done by the contractor. Such costs of handling and fixing with profit (including transport charges if required) shall be separately included in the contract price as described in the schedule of quantities. The disposal of the amounts covered under

this head will be absolutely at the discretion of the Employer. Contractor is to make payment for these materials to the suppliers on certificate or order issued by the Employer/ Architects/Consultants and realize them through his bills from the Employer.

9. QUANTITY OF WORK TO BE EXECUTED

The quantities shown in the schedule of quantities are only approximate and are intended to cover the entire new structure indicated in the drawings but the Employer reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore.

10. OTHER PERSONS ENGAGED BY THE EMPLOYER

The Employer reserves the right to execute any part of the work included in this contract or any work, which is not included in this contract by other Agency or persons, and contractor shall allow all reasonable facilities and use of his scaffolding for the execution of such work. The main contractor shall extend all cooperation in this regard. The Quantities may increase /decrease contractor to do the work for the same quoted rate. Final bill to be as per actual measurement at site with accepted rates.

11. TENDER FEE, EARNEST MONEY DEPOSIT AND RETENTION MONEY

TENDER FEE:

The Tender document can be purchased against demand draft or bank cheque of Rs. 2000/- drawn in the favour of **‘ERNET India’ payable at New Delhi** from ERNET India, No. 397, 13th cross, Sadashiv Nagar, Bangalore or from Shri. Gulshan Kumar, Section Officer, ERNET India, New Delhi (10th Floor, Jeevan Prakash Building, 25, K.G. Marg, New Delhi-110001) during 11.02.2014 to 21.02.2014. The tender document can also be downloaded from <http://www.eis.ernet.in> in tender section. In such case, an amount Rs. 2000/- in the form of Demand draft/Banker’s cheque drawn in the favour of **ERNET India payable at New Delhi** would be required to furnish in the Technical part of the bids.

EARNEST MONEY DEPOSIT:

1. The Tenderer shall furnish, as part of his tender, earnest money deposit of **Rs. 25000/- (Rupees Twenty Five Thousand only)** for Provisioning of Air-conditioning & Fire suppression work at ERNET Bangalore. This earnest money deposit shall be in the favour of **ERNET India** and may be in the form of Banker’s cheque/ Demand draft. Instruments having fixed validity issued as earnest money deposit for the tender shall be valid **for 45 days beyond** the validity of the tender.
2. The earnest money deposit of unsuccessful tenderers will be returned within 30 days of the end of the tender validity period. The earnest money deposit of the successful tenderer will be discharged when the Tenderer has signed the Agreement and furnished the required Performance Security.
3. The earnest money deposit may be forfeited:
 - (a) If the Tenderer withdraws the Tender after tender opening during the period of tender validity;
 - (b) If the Tenderer does not accept the correction of the Tender Price,

- (c) In the case of a successful Tenderer, if the Tenderer fails within the specified time limit to Sign the Agreement;

RETENTION MONEY:

1. Retention Money shall be deducted from progressive running bills @ 10% of the gross value of each running bill.
2. The 50% of the retention amount shall be refunded to the contractor on completion subject to the following.
 - (i) Contractor's removal of his materials, equipment, and labour force, temporary sheds/ stores etc, from the site (excepting for a small presence required if any for the defect liability period and approved by the Clint).
3. The remaining 50 % of the retention amount and EMD of successful contractor will be refunded to the contractor, after deducting any sum due from the contractor on any account under this contract, 14 (fourteen) days after the end of defects liability period provided he has satisfactorily carried out all the work and attended to all defects in accordance with the conditions of the contract. No interest is allowed on retention money. Retention money will be held for 06 month from date of completion and handing over.

12. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY

1. The contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specifications taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from and if the contractor finds any discrepancies therein he shall immediately and in writing, refer the same to the Employer/ Architects whose decision shall be final and binding. The contractor shall provide himself for ground and fresh water for carrying out of the works at his own cost. The Employer shall on no account be responsible for the expenses incurred by the contractor for hired ground or fresh water obtained from elsewhere.
2. The rates quoted against individual items will be inclusive of everything necessary to complete the said items of work within the contemplation of the contract, and beyond the unit price no extra payment will be allowed for incidental or contingent work, labour and/or materials inclusive of all taxes and duties whatsoever except for specific items, if any, stipulated in the tender documents.
3. The contractor shall supply, fix and maintain at his own cost, for the execution of any work, all tools, tackle, machineries and equipments and all the necessary scaffolding boarding, watching and lighting by night as well as by day required not only for the proper execution and protection of the said work but also for the protection of the public and safety of any adjacent roads, streets, walls, houses, building, all other erections, matters and things and the contractor shall take down and remove any or all such scaffolding. As occasion shall be required or when ordered so to do, and shall fully reinstate and make good all matters and things disturbed during the execution of works to the satisfaction of the Employer/ Architects/ consultants.

4. The contractor shall at all times give access to workers employed by the Employer or any men employed on the buildings and to provide such parties with proper sufficient and if required, special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc., in any work, where directed by the employer as may be required to enable such workmen to lay or fix pipes, electrical wiring, special fittings etc. The quoted rates of the tenderers shall accordingly include all these above mentioned contingent works.

13. TIME OF COMPLETION, EXTENSION OF TIME & PROGRESS CHART

13.1 Time of completion: The entire work is to be completed in all respects within the stipulated period stated in the Appendix. The work shall be deemed to be commenced on the fourth day from the date of purchase order. Time is the essence of the contract and shall be strictly observed by the contractor.

13.2 Extension of Time: If in the opinion of the Architect/Engineer the works were delayed for reasons beyond control of the contractor, the client/architect may grant a fair and reasonable extension of time with Employer's prior approval for completion of the contract works.

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 to the Engineer/Employer. The Contractor shall also, if practicable, indicate in such a request the total period for which extension is desired, overlapping period, if any, with earlier events causing delays, net extension required.

In such case, the Employer may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the contractor by the Employer in writing, within ten months of the date of such request. Non-application by the contractor for extension of time within time schedule or happening of an event which will require extension of time will render the contractor non eligible for seeking extension of time at later date & this shall be binding to the contractor. While granting extension, the Engineer with the approval of the Employer shall notify the contractor the period of time which will not qualify for levy of liquidated damages.

For the period in excess of original stipulated period and authorised extension of time (i.e. period not qualifying for levy of liquidated damages), granted by the Employer, the provision of liquidated damages as stated under Clause here of will become applicable.

However, the contract shall remain in force even for the period beyond the due date of completion irrespective whether the extension is granted or not.

13.3 Progress of work: During the period of construction the contractor shall maintain proportionate progress on the basis of a Program Chart submitted by the contractor immediately before commencement of work and agreed to by the Employer/ Architects/Consultants. Contractor should also include planning for procurement of scarce material well in advance and reflect the same in the programme chart so that there is no delay in completion of the project.

14. LIQUIDATED DAMAGES

If the Contractor fails to complete the works within the time for completion stated in the Appendix/elsewhere or within any extended time under Clause here of, the Contractor shall pay the Employer the sum at the rate of 1%(one per cent) of the Contract Value per week of the non completed works subject to a limit of 10%(ten percent) of the Contract Value as "Liquidated damages " for the period during which the said works shall so remain incomplete or the Employer may deduct aforesaid sum towards such damages from any monies due to the Contractor.

15. REMOVAL OF IMPROPER WORK

The Employer shall during the progress of the work have power to order in writing from time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Employer/Architects/Consultants are not in accordance with specifications of instruction, the substitution or proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions. In case the contractor refuses to comply with the order the Employer shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental there to as certified by the Employer/ Architects/ Consultants shall be borne by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate, which may be given by the Architects, shall relieve the contractor from his liability in respect of unsound work or bad materials.

16. CONTRACTOR'S EMPLOYEES

1. The contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the working hours to receive and comply with instructions of the Employer/Architects/Consultants. The contractor shall engage at least one experienced Engineer as site-in charge for execution of the work. The contractor shall employ in connection with the work, persons having the appropriate skill or ability to perform and communicate in their job efficiently.
2. No laborer below the age of Eighteen years and who is not an Indian National shall be employed on the work.
3. Any labourer supplied by the contractor to be engaged on the work on day-work basis either wholly or partly under the direct order or control of the Employer or his representative shall be deemed to be a person employed by the contractor.
4. The contractor shall comply with the provisions of all labour legislation including the requirements of

The Payment of Wages Act

Employer's Liability Act

Workmen's Compensation Act

Contract Labour (Regulation & Abolition) Act, 1970 and Central Rules 1971

Apprentices Act 1981

Any other Act or enactment relating thereto and rules framed there under from time-time Indian Electricity Act (IE Act) and follow the rules.

5. The contractor shall keep the Employer saved harmless and indemnified against claims if any of the workmen and all costs and expenses as may be incurred by the Employer in connection with any claim that may be made by any workmen.
6. The contractor shall comply at his own cost with the order of requirement of any Health Officer of the State or any local authority or of the Employer regarding the maintenance of proper environmental sanitation of the area where the contractor's labourers are housed or accommodated, for the prevention of small pox, cholera, plague, typhoid, malaria and other contagious diseases. The contractor shall provide, maintain and keep in good sanitary accommodation and provide facilities for pure drinking water at all times of the use of men engaged on the works and shall remove and clear away the same on completion of the works. Adequate precautions shall be taken by the contractor to prevent nuisance of any kind on the works or the lands adjoining the same.
7. The contractor shall arrange to provide first aid treatment to the labourers engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works, report such accident to the Employer and also to the competent authority where such report is required by law.

17. MEASUREMENTS

Contractor to take the measurement and submit to the architect for verification. Architect representative shall check the measurement. During the checking contractor representative must be present.

18. PAYMENTS

1. **Initial Mobilization Advance:** An amount of 15% of contract value to be paid to contractor against bank guarantee along with purchase order.
2. **Running Bill payments:** 3 running bill of 25% of contract value each.
3. **Final bill** of 10% on completion and handing over of project.
4. Retention money-10% of contract value will be deducted in every running bill and 50% of the same shall be paid with the final bill. Balance retention amount shall be paid after 6 months of defects liability period along with the EMD amount.

19. FINAL PAYMENT

1. The final bill shall be submitted by the contractor within one month of the date fixed for completion of the work or of the date of certificate of completion furnished by the Site Engineer and payment shall be made within three months for such of those items and quantities that in the opinion of the Employer, are undisputed.
2. The final bill shall be accompanied by a certificate of completion from the Employer/ Architects. Payments of final bill shall be made after deduction of Retention Money as specified in clause of these conditions, which sum shall be refunded as stipulated in Clause. The acceptance of

payment of the final bill by the contractor would indicate that he will have no further claim in respect of the work executed.

20. VARIATION / DEVIATION

The Employer shall have powers to order additional /non-tendered items to modify the tendered items, to vary the quantities of tendered items and not to execute certain items. All such orders shall be in writing. The rate or price of all such additional items/non-tendered/modified items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required to be approved by the architect. The tender rates shall hold good for any increase or decrease in the tendered quantities.

21. SUBSTITUTION

Should the contractor desire to substitute any materials and workmanship, he/they must obtain the approval of the Employer/Architects in writing for any such substitution well in advance. For materials designated in the Schedule of Quantities and specification indefinitely by such term as "Equal", "Equivalent" or "Other approved" etc. specific approval of the Employer/Architects shall be obtained in writing. All such substitution may be subject to suitable price adjustment if considered necessary by the Architect/Employer.

22. COMPLETION OF WORK

- 1. On completion of the work the contractor shall clean all windows, doors, fittings, fixtures etc of all paint/polish/distemper splashes/dirt/dust etc,** if necessary all hardware, clean inside and outside, all floor, stair-cases, and every part of the building and the surroundings. The whole of the work will be thoroughly inspected by the contractor and deficiencies and defects set right. On completion of such inspection the contractor shall inform the Employer in writing that he has completed the work and it is ready for inspection.
2. On receipt of such written intimation from the contractor, the Employer/Architect shall arrange to inspect the work and certify completion if the work has been completed satisfactorily. If not, the Employer/Architect shall inform the Contractor the deficiencies/defects in the work and the contractor shall attend to them properly and again intimate the Employer/Architect for further inspection.
3. The work shall not be considered as complete until the Employer/Architects/ Consultants have certified in writing that it has been completed satisfactorily without any apparent defects and the Defects Liability Period shall commence from the date of such certificate
4. No such certificates shall be issued until the contractor clears away and removes from the site all constructional plant, surplus materials, rubbish temporary works of every kind and leaves the whole of the site and the works clean and in a workman like condition to the satisfaction of the Employer/Architects.

23. DEFECTS AFTER COMPLETION

The contractor shall make good at his own cost and to the satisfaction of the Employer all defects, shrinkage, settlements or other faults, which may appear within **06 months** after completion of the work. In default the Employer may employ and pay other persons to amend and make good such damages, losses and expenses consequent thereon or incidental thereto shall be made good and borne by the contractor and such damages, loss and expenses shall be recoverable from him by the Employer or may be deducted by the employer, in lieu of such amending and making good by the contractor a sum equivalent to the cost of amending such work and in the event of the amount retained being insufficient, recover that balance from the contractor from the amount retained under clause together with any expenses the Employer may have incurred in connection therewith.

24. ESCALATION

The rate quoted shall be firm throughout the tenure of the contract (including extension of time, if any, granted) and will not be subject to any fluctuation due to increase in cost of materials, labours. Any increase or decrease in government regulated state or central taxes shall be paid or deducted by the client.

25. WARRANTY

- I. The comprehensive warranty shall be for a period of 3 years from the date of acceptance of the units installed at ERNET India. The rates quoted in the price bid should include the comprehensive warranty.
2. The bidder should also quote on-site comprehensive AMC rates for the 4th and 5th Year separately, after completion of warranty period 3 years. ERNET India reserves the right to consider or not to consider the cost of AMC after expiry of warranty. The price comparative statement will be made only on the basis of the equipments price for arriving of L1. The price of the optional items (4th and 5th year AMC Charges) will not be considered for the comparison point of view.

Signature of the Contractor

APPENDIX TO GENERAL CONDITIONS OF CONTRACT

1	Period of Completion	:	Within 6 weeks after giving the purchase order
2	Defects liability Period (D.L.P)	:	06 (Six) months from the date of Completion of work /handing over site.
3	Date of Commencement	:	Within 10 days from date of PO
4	Liquidated Damages for Delay	:	As mentioned in the Clause
5	Period of final measurement	:	15 days from submission of final bill.
6	Running bill Value	:	3 running bills of 25% of contract value each
7	Adhoc payment on running bill	:	50% of Bill Value within four days
8	Period of honouring running bill	:	07(seven) days from Architects certificate.
9	Period of honouring Final bill	:	1(One) months.
10	Retention Money	:	10% of running Bill

SIGNATURE OF CONTRACTOR.

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL:

These Special conditions of Contract shall be read in conjunction with the General Conditions of contract, Specifications of work, Drawings and any other documents forming part of this contract wherever the context so requires.

Not with standing, the sub-division of the documents into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the contract so far as it may be practicable to do so.

Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, then unless a different intention appears, the provisions of the Special Conditions of Contract, shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnance, or variance, prevail.

2. WHOLE WORK TO BE COMPLETED IN THE SPECIFIED COMPLETION PERIOD:

The whole work including all extra and additional items is to be completed in the completion period stated in Appendix to conditions of contract and the Contractor will be required, if necessary to work overtime to fulfill the Architect's instruction to complete the work by the Contract date. No extra will be allowed on the Contract Sum for such overtime work.

3. INTERPRETATION OF TERMS:

Whenever the words "directed", "as required", "selected", or words like effect are used, it is to be understood that the selection, direction or requirement of the Architect are intended.

The words "approved", "satisfactory" or words of like import shall mean "approved by" or "satisfactory to" the Architect, whose approval must first be obtained before the materials ordered or the works to which the words refer to are put in hand.

The word "allow" shall mean that the contractor shall include in his rates for the particular matter referred to.

The words "as described" shall mean the description in the trade preambles, general preambles, specifications, general instructions etc.

4. ORDER OF WORK:

The Architect reserves the right to fix the order in which the various items of work involved in this contract are to be executed and contractor shall comply with the same. There shall be no extra claims on account of this.

5. SAMPLES:

Before ordering such materials, the Contractor shall get samples of the materials approved from the Architect well in time. The contractor shall furnish well in time before work commences, at his own cost, any samples of materials or workmanship that may be called for by the Architect for his

approval or rejection and any further samples in case of rejection until such samples approved. Such samples when approved shall be the minimum standard for the work to which they apply. In case of items like suspended ceiling, timber partitions, etc., typical sample panels or prototypes shall be erected in position for approval before undertaking work. Rates quoted shall cover for such preliminary work.

6. WORKMANSHIP:

The work involved calls for a high standard for workmanship combined with speed.

7. REJECTED WORKMANSHIP OR MATERIALS:

Any workmanship or materials not complying with the specific requirements or approved samples or which have been damaged, contaminated or deteriorated, must be removed immediately from the site and replaced at the contractor's expense, as directed.

8. DISCREPANCIES:

The several documents forming the contract are to be taken mutually explanatory of one another. In the event of any Errors, Omissions and Discrepancies, the same shall be dealt as under:

- a) In case of errors, omissions and /or disagreement between written and scaled dimensions on the drawings and specifications etc., the following order of precedence shall apply.
 - i) Between scaled and written dimension (or description) on a drawing, the latter shall be adopted.
 - ii) Between the written or shown dimensions in the drawings and the corresponding one in the specification, the former shall be taken as authenticated.
- b) In case of discrepancy between the schedule of quantities, the specifications and /or the drawings, the following order of preference be observed.
 - i) Description in Schedule of Quantities.
 - ii) Particular Specifications and special condition, if any
 - iii) Drawings
 - iv) Indian Standard Specifications of B.I.S.
- c) In case of difference between the rates written in figures and the rate in words shall prevail.
- d) Between the duplicate/subsequent copies of the tender and original tender, the original tender shall be taken as authenticated.
- e) In case of omissions and/or doubts or discrepancies in any of the items or specifications, a reference shall be made to the Engineer whose Elucidation, elaboration or decisions approved by the architect shall be considered as authentic.

The contractor shall be held responsible for any error that may occur in the work through lack of such reference and precaution.

9. QUOTED RATES:

The rates quoted by the Bidder/contractor shall be held to include for providing and fixing all scaffolding, conveyance and delivery, unloading, carrying in storing, hoisting, all labour, setting, fitting and fixing in position making, setting, cutting, waste, return of packing and all materials and labour and **also take care any of the damages arising due to installation**, everything else necessary for the proper completion of each item of work to the approval of Architect and for Establishment Charges, overheads and profits. The Contractor shall provide at his expense all labour, materials and things required by the Architect or his representative for testing and measuring the work, for weighing, testing the efficiency of any portion of the work, all planning gangways etc., necessary for affording access to every part of the work.

Contractor should note that unless otherwise stated the tender is strictly on item rate basis and his attention is drawn to the fact that rates for each and every item should be correct, workable and self-supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work but may vary to any extent and may even be omitted. No claim shall be entertained on this account except as provided in clause 35 of the General Conditions.

If called upon by the Architect, detailed analysis of any or of all the rates shall be submitted by the Contractor. The Architect is not bound to recognize Contractor's analysis and reserves the right to reject abnormal high rates quoted by the contractor. In case there are inconsistencies in the rates for items of same such rates shall be considered as the rate for all such items unless Architect finds that there is justification for such inconsistent rates.

Bill of Quantities

Project : ERNET, BANGALORE Bill of Quantities Summary : General and Precision Air-conditioning / Fire Suppression works				
S.NO	DESCRIPTION	I	II (Optional)	
		Charges for Installation, Commissioning, testing, including all associated accessories and allied works (with 3Yrs Warranty)	AMC Charges (4th Year)	AMC Charges (5th Year)
1	General Air conditioning			
2	Precision Air-conditioning			
3	Fire Suppression System			
	Total			

* Taxes and Duties extra as applicable

Note:

The price comparative statement will be made only on the basis of the equipments price (total of column I) for arriving of L1. The price of the optional items (4th and 5th year AMC Charges) will not be considered for the comparison point of view.

1. General Air conditioning works Bill of quantities : General Air-conditioning works					
S.N	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Supply, installation, testing and commissioning of new factory supplied air cooled ductable split units of capacities mentioned below. The indoor unit shall be suitable for ceiling suspension above the false ceiling and complete with 25 mm thick metallic and synthetic washable filter ,electric motor, blower with low noise level, vibration isolators ,cooling coils, microprocessor based control panel ,starter with starting arrangements ,thermostats ,isolators for outdoor unit , control wiring as required with interlocking arrangement. Insulated drain pan, interconnected hard drawn as required hard copper refrigerant piping with nitrile insulation, isolating valves etc. Refrigerant piping and cables in wall crossings shall be provided in suitable steel /PVC sleeve. The condenser shall be horizontal side discharge /vertical discharge type as per site conditions and shall be complete with hanger plate for suitable maintenance and with vibration isolator pads, suitable base frame ,condenser coils, scroll compressor with gas charge and oil, adequately sized fans and weather proof IP-55 motors and casing. The average horizontal distance between indoor and outdoor unit shall be presumed to be 18 running meters. No escalation is allowed after contract value is finalized. The AC equipment shall be suitable for 415+/- 10% volts, 3phase, 50 Hz 4 wire electric supply.				
	a) 8.5 TR Ductable split unit with 5 star rating and 3400 cfm 40 mm total static with min 25 mm ESP	SET	1		
	Note 1: Contractor to include necessary additional Referegent piping as required for the Equipment manufacturers with mutiple ckt systems				
	Note 2: Contractor to enclose Catalogues of all equipments with Compressor rating charts.				
	Note 3: Incoming Power supply near outdoor/indoor unit will be provided by other agencies.				
2	Installation , testing and commissioning of the following capacity 5 star rating HI-WALL multisplit /single units with one no indoor unit and one no outdoor unit with rotary / Compressors, DX cooling coil , condenser fans , vibration pads , condenser coil, with cordless remote pad and operation facility. 15 metres each circuit (average) soft refrigerant piping, vidoflex/equi insulation , cabling , control wiring , interlocking etc to make the installation complete. Civil works involved shall be part of supply. Bidders to visit site and ensure that their installed equipment can be serviced without any difficulty.				
	a) 1.0 TR	SET	1		

3	Supply , installation , testing and commissioning of the following capacity star Cassette Type split units with one no indoor unit with 5 star rating and one no outdoor unit with rotary/scroll / Compressors, DX cooling coil , condenser fans , drain pump with min 600-700 mm lift should be included. vibration pads , condenser coil, with cordless remote pad and operation facility 15 metres each circuit (average) hard for 3TR and above /soft refrigerant piping, vidoflex/equi insulation , cabling , control wiring ,interlocking etc to make the installation complete. Civil works involved shall be part of supply. Bidders to visit site and ensure that their installed equipment can be serviced without any difficulty.				
	a) 1.5 TR (1 phase units)	SET	1		
	b) 2.0 TR (1 phase units)	SET	1		
4	Wall mounted Voltage stabilizers for the above single phase units including fixing accessories stand etc .				
	a) 4 KVA	SET	2		
	b) 5 KVA	RO	1		
	Sub-total for Equipments (items 1- 4) (A)				
	Note 1: Taxes to be included in the price of equipments /accessories.				
	Note 2: All internal refrigerant piping and drain piping and exposed shall be covered with rigid PVC and flexible PVC pipes wherever necessary.				
5	Supply, laying ,and testing of 25/32mm PVC drain piping of (blue threaded pipe) ORIPLAST MAKE 3mm thick including elbows ,connectors, U traps, y connections, connections and flexible tubing if any for all 6 ceiling suspended split units to the nearest toilet /pantry drain/ or to the main shaft available as per site conditions and per directions of the Architect/Consultant/ site engineer/ consultant. All. Hardware necessary to secure the pipes shall be included.	RMT			
6	Supply, laying, and terminating the following PVC armoured aluminium conductor cables from incoming power supply to control panel of split units to respective compressor motors, condenser fans, interlocking arrangement etc. Proper clamping arrangements including supports. Cable tray if available shall be used to route the cables. PVC conduit shall be be used where necessary.				
	(a) 3 core 4 sq mm	RMT	30		
	(b) 3 core 6 sq mm	RMT	15		
	(c) 2 core 1.5 sq mm cu control cable (all units)	LOTS	1		
	(d) 2 core 2.5 sq mm (all units)	LOTS	R.O		
	(e) 6c x 1.5 Sq mm Cu control cable (all units)	LOTS	1		
7	Supply, laying and providing earthing for all control panels ,rotating motors and equipments in the project applicable to airconditioning .				
	(a) 8G GI wire (for all AC units)	L.S	1		

8	Supply, fabricating, installing, and testing of factory made sheet metal ducts including turning vanes , hangers ,splitter dampers, angle supports, rods, gaskets, MS angle flanges in accordance with the approved shop drawings, and as per specifications of IS -655 (latest edition) and IS -277 (latest edition).Painting of ducts behind grilles should be included .				
	(a) 24 gauge galvanized sheet steel.	Sqm			
	(b) 22 gauge galvanized sheet steel.	Sqm			
	(c) 20 gauge galvanized sheet steel.	Sqm			
9	Supply, installing and testing of fire resistant flexible double canvas sleeve as per approved shop drawing and specifications with zip.	SET			
10	Supply installing, and testing supply fire dampers of approved make with GI Construction with fuse links . Equivalent make with at least 1and 1/2 hours fire rating as per approved shop drawings.	Sq.M			
11	Supply , installing, testing of Al Volume control damper on ducts, and to be provided with suitable links, louvers ,and quadrant for manual control of volume of air flow and for proper balancing of the air distribution system .	Sq.M			
12	Supply, installing, testing, and balancing of Square / Rectangular/ Round supply air four way diffuser with damper as per approved shop drawings and specifications. grid. The volume control shall be removable and adjustable from below. All ceiling diffusers to match false ceiling grid of Gypsum /Armstrong or as per site.	SQ.M			
	(a)Powder coated extruded Aluminium diffusers.				
13	Supply, installing, testing and balancing of square / rectangular/Round return air four way diffuser without damper as per approved shop drawing and specifications. All ceiling grilles to match false ceiling grid as per site conditions suitable for gypsum/ Armstring (a) Powder coated extruded Aluminum diffusers.	SQ.M			
14	Supply, installing, and testing of fresh air grilles with GI inlet louvers, prefilter and bird screen and volume control damper in accordance with approved shop drawings.	SET			
15	Supply, installing, testing and balancing of linear extruded sections Aluminum Powder coated Supply / return / dummy grilles as per approved shop drawings and approved samples. End flanges to be provided as per site conditions. Deflection, shade, type and nos shall be decided after interior layouts are frozen. Site measurements shall be taken before ordering Delivery to suit and meet project schedule.				
	(a)150mm deep continuous straight/curved grilles (inside /outside curvature) with/without.	RMT			
	(b)100 mm deep St continuous with damper	RMT			
	(c)100mm deep continuous straight grilles without damper.	RMT			
16	Supply, install of external thermal insulation on G.S.S. ducting with nitrile rubber .Density shall be not less than 65-70Kg/m3. Al tape to be used in joints of 25-50mm wide				

	(a) 6mm thick nitrile rubber with adhesive and accessories.	Sq.M			
17	Supply, installing acoustic lining of ducts with 12mm thick fiberglass (48 Kg/m ³) R.P. tissue and 26g perforated Aluminum sheets using G.I. nuts and bolts./ Al pop rivets and washers .	Sq.M			
18	Supply, installing acoustic lining of trap door for the units with 50 mm thick fiberglass, RP tissue and 26 G perforated Al sheet.	SET			
19	M.S condenser frame work with channels, equal angles, chequered plate etc, with two coats of primer and paint, supply and installation including civil works for all the condenser units as per equipment section.	SET			
20	All civil works pertaining to Airconditioning like breaking, making, painting of walls, glass etc .	LS			
21	250 mm dia fibre glass insulated flexible ducting ,three ply laminated	RMT			
22	250 mm dia 22 g GI butterfly damper with clamping arrangement	SETS			
	Sub- total Cost for items (5-22) (B)				-

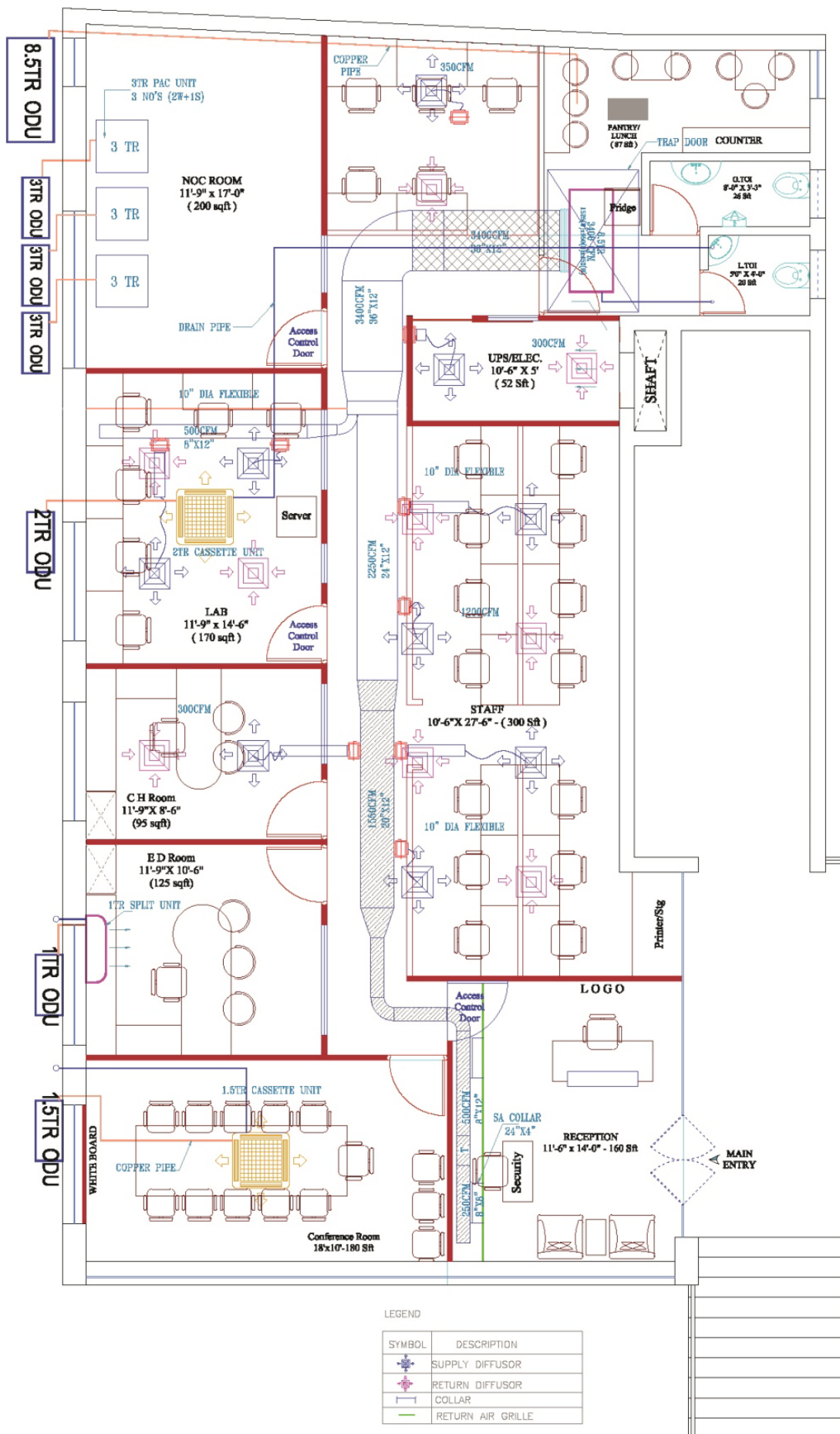
2. PRECISION AIRCONDITIONING FOR NOC Bill of quantities : General Airconditioning works					
A. High side works for Precision Air conditioners - (I)					
S.N	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
23	Supply of Uniflair make or Equivalent Bottom Discharge PAC units of 6 TR Nominal capacity with 5 star rating . DX-Air cooled PACs complete with direct drive EC motor and Fan with backward curved blades, Electronic Expansion Valve, Scroll compressor for POWER SAVINGS hydrophilic fins for IDU, fan speed controller for ODU, Heater, and Humidifier , Water leak detector, EU4 filter, Clock card and Sequencing card supplied with the system. Unit offered will be suitable for eco-friendly R407 C; Dirty filter alarm, heater, humidifier are part of the system. The PAC Units are BMS compatible (Modbus Protocol) PAC will be pre-charged with N2. Drain pump will be supplied as optional accessory. Cost to include Unloading and Handling of the precision AC Units.				
24	6 Tr PAC units as per above specs. Nominal CFM @ 3400 / unit (PAC Units with Heater & Humidifier, 2W+1S)	3	Nos		
25	Drain pump for the PAC	3	Nos		
26	RS485 Card for BMS connectivity	RO	Nos		
Sub- total Cost for items (23-26) (C)					
B. Low Side Works for High Precision AC Units (II)					
S.N	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
27	Supply of MS stand suitable for raised floor of 300mm clear height.	3	Nos		
28	Supply & Installation of Floor Insulation using 9 mm thick Nitrile rubber.	RO	SqFt		
29	Supply Air grills 600 x 600 mm with Volume Control Dampers	4	Nos		
30	Leak testing and Refrigerant filling with R 407 C	8	Kg		
31	Power cabling from indoor to outdoor units considering 15RMt per unit.	8	RMt		
32	Cables for Sequencing of units,	8	RMt		
33	Humidifier line	5	RMt		
34	Drain line with insulation	8	RMt		
35	Cu piping interconnecting indoor and outdoor	9	RMt		
36	Supply and installation of condenser stand (Outdoor)	2	Nos		
37	Supply of Cowl for underfloor supply air distribution.	RO	Nos		
38	Incoming Electrical Cable from DB /Isolator to PAC	8	RMT		
Sub- total Cost for items (27-38) (D)					
GRAND TOTAL (A+B+C+D)					

Project : ERNET, BANGALORE Bill of quantities : FM 200 Fire Suspension System					
SN	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Supply, Installation, testing & commissioning of 80 Ltrs. Cylinder with value. a) Supply & Erection	No.	1		
2	Supply, Installation, testing & commissioning of HFC 227. a) Supply & Erection	Kgs.	60		
3	Supply, Installation, testing & commissioning of Master Cylinder Comprising Below items. * Pr. Gauge + Low Pr. supervisory system *Electromagnetic Actuator *Pneumatic Actuator *Flexible discharge hose *Manual Pneumatic Actuator *Union 7/16 JIC 1/8 a) Supply & Erection	No.	1		
4	Supply, Installation, testing & commissioning of Nozzles a) Supply & Erection	Nos.	5		
5	Supply, Installation, testing & commissioning of Sch40 seamless piping with accessories. a) Supply & Erection	Lot	1		
6	Supply, Installation, testing & commissioning of 4 Zone cross zone Gas release panel. a) Supply & Erection	No	1		
7	Supply, Installation, testing & commissioning of Conventional smoke Detector. a) Supply & Erection	Nos.	10		
8	Supply, Installation, testing & commissioning of Abort Switch. a) Supply & Erection	No.	1		
9	Supply, Installation, testing & commissioning of Hooter a) Supply & Erection	No.	1		
10	Supply, Laying, testing & commissioning of 2runs x 1.5 sq.mm Cu. FRLS Wires in 19mm dia. PVC conduit with supports etc., as required a) Supply & Laying	Mtrs.	180		
	FM200 Fire Suppression System Total				

LIST OF APPROVED MAKES

SN	Description	Manufacturer
1	Precision A/C	Uniflair make or Equivalent
2	Ductable/ Hiwall/ cassette Aircooled split units with scroll/rotary compressors	Voltas /Blue Star /Carrier / LG/Samsung
3	Thermostat/Humidistat	Honeywell/Johnson
4	Ceiling hung AHUS	Stark/Airblow/caryaire / Clivet
4a	ON/ OFF Thermostats	Honeywell / Johnson /Sauter
5	G.I. Sheets	Sail / National/ Jindal
6	Fibre glass Insulation (prelaminated)	KIMMCO/U.P TWIGA/equivalent with chicken mesh strapping and hardware
7	Nitrile Insulation	Vidoflex/Armaflex/ Trocellen/Aeroflex /Kflex
8	Power cables	CCI / Gloster / Universal/Local equi
9	Control cables	NICCO / Gloster / Universal/Loacl equi
10	D.O.L starters /Star delta	Siemens / L & T
11	Fire dampers/dampers	Caryaire/Airmaster/approved equi
12	Electric motors	Siemens/crompton /GE
13	Refrigerant pipe insulation	Vidoflex/Armaflex/equivalent approved
14	Grilles / Diffusers	Airmaster/Caryaire /Ravistar/Local Equivalent
15	Control panel from package units	As per company approved
16	Cooling coils	Coils/Lloyd/equivalent
17	PVC drain piping for drain	Oriplast blue threaded pipe
18	Refrigerant pipes	Hard drawn copper tubes for 5TR and above and soft copper for 3TR
19	Refrigerant duty /Expansion valves	Sporlan /Equivalent
20	Stabilizers fro A/C equipment	Oricon or approved equivalent
21	Inline fans	Kreuger/Nicotra/Kanalflakt/equivalent
22	Centrifugal Exhaust	Kreuger/Nicotra/Kanalflakt
23	Duct supports	Hi-tech /Equivalent

DRAWING LAYOUT



PROPOSED INTERIORS FOR
M/S ERNET INDIA,
SADASHIV NAGAR,
BANGALORE.

CONTENT
AC LAYOUT PLAN

DATE : 05/07/13
SCALE : 1"= 4'-0"

REVISION



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