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UNION BANK OF INDIA  
REGIONAL OFFICE  
KARIMNAGAR  
TELANGANA

TENDER SCHEDULE FOR AIR CONDITIONING WORKS  
UNION BANK OF INDIA - MALLAPUR BRANCH  
KARIMNAGAR

FOR BANK'S EMPANELLED CONTRACTOR/VENDOR  
UNDER TELANGANA REGION  
ONLY NEED TO APPLY

**CONSULTANTS:**

**AKRITI ARCHITECTURE**

Ideas come to shape

Architecture, Interior Design, HVAC, LAN, ME&P

BHARANI COLONY, SAINIKPURI,

SECUNDERABAD -500094

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Last date for submission of Sealed Tenders: Before 3.00 PM on 08/07/2022  
Opening of Sealed Tenders: at 3.30 PM on 08/07/2022

Issued to: -----

SIGNATURE OF CONTRACTOR

(1)

**NOTICE INVITING TENDER (NIT)**

Sealed Tenders on item rate basis are invited from eligible contractors having sound, technical and financial capacity to do **AIR CONDITIONING-WORKS** for **UNION BANK OF INDIA - MALLAPUR BRANCH KARIMNAGAR.**

1	Name of the work	<b>AIR CONDITIONING WORKS - MALLAPUR BRANCH.</b>
2	Cost of application/tender document.	Rs 500/- (non refundable) by DD ONLY.
3	Date and Time where tender forms are available.	<b>From 01/07/2022 To 08/07/2022 up to 3 P.M</b> at the following address: The Dy General Manager THE UNION BANK OF INDIA, Regional Office, Karimnagar. H.NO.2-7-440/1,Opp.Prathima Multiplex Road, Beside Film Bhavan, Mukarampura, Karimnagar - 505001.
4	Time and last date of submission of Tender	<b>Up to 3.00 PM on 08/07/2022</b>
5	Place, Address for submission of tender.	The Dy General Manager THE UNION BANK OF INDIA, Regional Office, Karimnagar. H.NO.2-7-440/1,Opp.Prathima Multiplex Road, Beside Film Bhavan, Mukarampura, Karimnagar - 505001.
6	Date, Time and Place of opening of tenders	<b>On 08/07/2022 at 3:30 PM;</b> The Dy General Manager THE UNION BANK OF INDIA, Regional Office, Karimnagar. H.NO.2-7-440/1,Opp.Prathima Multiplex Road, Beside Film Bhavan, Mukarampura, Karimnagar - 505001.
7	Quantum of Earnest Money Deposit (EMD) .	Earnest Money Deposit amounting to <b><u>Rs.2100/-</u></b> (Rupees Two Thousand One Hundred Only) ) in the form of Demand Draft/ Pay Order Drawn in favour of <b>UNION BANK OF INDIA, REGIONAL OFFICE, KARIMNAGAR.</b>
8	Quantum of Security Deposit drawn in favour of Union Bank of India, RO, KARIMNAGAR.	As per terms of the tender document.

9	Terms of payment of Bills, if any (specify the minimum value of work for payment of running account bills)	SINGLE BILL UP TO Rs 1.0 LAKHS.
10	Liquidated Damages (Penalty clause)	In case of delay a penalty @ the rate of 1% of the value of the work per week subject to a maximum of 10% (as per the value of work) would be strictly imposed.
11	Stipulated time for completion of the work/supply.	<b>30 DAYS.</b>
12	Estimated value of tender/project	2,12,000/- (excluding GST)
13	Validity period of the tender.	Four (4) Months.
14	Taxes	Rates quoted should include all Taxes, Octroi, other charges like Transportation, lifting etc. However TDS will be deducted at source as applicable.
15	GST	Tenderer shall quote rates exclusive of GST. Bank shall pay GST as applicable to the Contractor along with their bills.
16	Electronic Payment	Details such as name, name of the bank, name of the branch, account number, IFSC code no. etc to be furnished to make Electronic payments.
17	Defects Liability Period	12 months

The bank is not bound to accept the lowest tender & reserves the right to accept or reject any or all the tenders without assigning any reason whatsoever.

Tenders submitted without EMD and without application fee will be rejected. In case bidders are registered with NSIC or MSME certificate, they are eligible for waiver of Tender Fee and EMD. However, they need to provide valid NSIC or MSME certificate clearly mentioning that they are registered with NSIC/MSME under single point registration scheme.

THE TENDERS SHOULD BE IN A SEALED COVER WITH THE NAME OF THE WORK AND THE BRANCH CLEARLY WRITTEN ON THE SEALED COVERS.

**DY. GENERAL MANAGER**  
**(Regional Office - KARIMNAGAR)**

SIGNATURE OF CONTRACTOR

(3)

## **Terms And Conditions:**

1. The work has to be carried out/ executed in day and night without causing any inconvenience.
2. The contractors should quote in figures as well as in the words the rates, and amount tenders by them. The amount for each item should be worked out and the requisite totals given. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates, figures and words. However, if a discrepancy is found the rates, which correspond with the amount worked out by the contractor shall be taken as correct. If the contractor does not work out the amount of an item or it does not correspond with the rate written either in figure or in words then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly the rates quoted by the contractor will be taken as correct and not the amount.
3. The tender document must be filled in English and all the entries must be made by the hand and Written in ink. If any of the documents are missing or un-signed, the tender shall be considered invalid.
4. The acceptance of a tender will rest with the Competent Authority, who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all of the tenders received, without assigning any reasons. All tenders in which any of the prescribed conditions are not fulfilled, or are incomplete in any respect are liable to be rejected.
5. All compensation or other sums of money payable by the Contractor to Clients under the terms of this contract may be deducted from the security deposit, or from any sum that may be or may become due to the Contractor on any account whatsoever and in the event of the Security Deposit being reduced by reasons of any such deductions, the Contractor shall within 10 days of being asked to do make good in cash or by cheque any sum which have been deducted from his security deposit.
6. Tender containing any condition leading to unknown/indefinite liability, are liable to be summarily rejected. If at all any rebate(s) is/are to be offered the tenderer shall first quote his rates strictly on the terms and conditions stipulated in tender document and then show separately rebate(s) offered specifying the conditions for such rebate(s). Failure to follow this procedure will render the tender liable to summarily rejection.
7. Canvassing in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
8. The tenderer should quote their (own) rates for undertaking the work.

9. Tenderers must include in their tender prices quoted for all duties, royalties, cost, sales tax, work contract tax, service tax, Labour Cess or any levies, taxes etc. GST will be paid extra as applicable.
10. Income Tax plus surcharge as applicable as per Government Rules, will be deducted.
11. Retention amount equivalent to 8% of the gross value of work done, subject to a ceiling as detailed in below, will be deducted from each running account bill and will be returned to the contractor, without any accrued interest, after one year from the date of virtual completion of the work.
12. The total security deposit on the contract, including Earnest Money Deposit, will be calculated as 10% on the value of the Contract.
13. The EMD of the contractor whose tender is accepted shall be forfeited in full in case he does not remit the Initial Security Deposit within the stipulated date mentioned in the award letter.
14. The work so completed will be under a Defect Liability Period of 12 months from the date of virtual completion.
15. Time is the essence of the contract. The work should be completed in **30 Days (Thirty Days)** from the date of the work order issued to the contractor, failing which, penalty will be strictly imposed.
16. Tenders for works shall remain open for acceptance for a period of 120 days from the date of opening of tenders. If the tenderer withdraws his tender before the expiry of the said period or makes any modifications in terms and condition of the tender which are not acceptable to the Bank, then the bank without prejudice to any other right or remedy is at liberty to forfeit the earnest money.
17. It will be obligatory on the part of the tenderer to tender and sign the tender documents for all the component parts and that, after the work is awarded, he will have to enter into an agreement for each component with the competent authority in the bank.
18. The tenderer, apart from being a competent contractor must co-ordinate himself with the all agencies appointed by the bank.
19. The tenderer should visit the site to ascertain the working conditions and local authority regulations/restrictions if any and other information required for the proper execution of the work.
20. The quantities of various items given in the schedule of quantities are approximate. The quantities of work may vary at time of allotment / execution of work. Bank reserves the right to omit / delete any item(s) of work from the schedule at the time of allotment / before. Contractor will be paid for the actual work done at the site duly verified by the the Architect.

21. In case of extra items, a record of labour charges paid shall be maintained and shall be presented regularly to the Employer's for checking. The settlement will be made based on figures arrived at jointly and taking unit price given in the contract assigned to the successful Tenderer. In case of extra items where similar or comparable items are quoted in the tender, extra rates shall be based on tender rates.
22. The work has to be started **Immediately** from the date of receipt of work order. In case of work not being started within this stipulated period, the bank reserves the right to cancel the work order duly forfeiting the Earnest deposit.
23. No employee of the Bank is allowed to work as a contractor for a period of 2 years of his/her retirement from Bank Services without previous permission of the Bank. This contract is liable to be cancelled, if either the contractor or any of his employees is any time to be such a person who had not obtained the permission of Bank as aforesaid before submission of the tender or engagement in the contractor's service.
24. No advance will be granted for the works proposed.
25. The unit price shall be deemed to be fixed price.
26. Sealed tenders are to be addressed and sent to:

The DEPUTY GENERAL MANAGER,  
UNION BANK OF INDIA,  
REGIONAL OFFICE,  
KARIMNAGAR.

Signed and delivered for and on behalf of The Contractor \_\_\_\_\_by

Shri \_\_\_\_\_his Duly authorized official.

## ADDITIONAL CONDITIONS OF CONTRACT

Tender shall sign wherever provided for. The tenders not so signed shall be rejected. The tenders shall be submitted in on or before the due date.

No tenders shall be accepted unless the full amount of the earnest money deposit is paid at the time of submission of the tender. No exemption will be entertained.

Fluctuations in the prices of any materials or equipment or labour etc., shall not be taken into account either for compensation for damages for extras.

Watch and ward in respect of all plants, machinery and materials at site for use in works shall be the contractor's sole responsibility.

The contractor shall have to make his own arrangements to house his labour and staff and for their services.

All instructions regarding the execution of works shall be received from the Architects/Bank only. Any other instructions issued directly to the contractor by anyone else shall not be binding on the employer.

During execution of works the contractor must check his work with the drawings. The contractor shall be responsible for all the errors in this connection and will have to rectify all defects at his own cost, failing which the employer reserves all right to get the same rectified at the risk and cost of the contractor.

The contractor entrusted with the work shall in indemnify the Bank and the Architects against theft, mishaps in construction and injury to workmen, damage to persons, property etc., He shall make well the damage at his own expense.

The Bank through the Architects shall have the power to omit or cancel any item of work without assigning any reason whatsoever and no claim for compensation for damage will be entertained for such omissions and cancellations.

The contractor shall maintain satisfactory progress of work as well as maintain a desired workmanship. If in the opinion of the Architects the progress is unsatisfactory and/or the workmanship is unsatisfactory, the architects shall advise the bank to take possession of the work with 7 days notice to that effect.

The Employer shall then complete the entire work and rectify all the defects at the contractor's cost and consequences.

In case the Bank/Architects are not satisfied with the quality of materials used by the contractor they reserve the right to direct the contractor to procure such supplies from agencies they deem fit.

The contractor shall submit the bills for payment along with the detail statement showing the actual works carried out under different circles of items.

The contractor shall clear of works as per instruction of the Bank/Architects. The site of works shall be cleared of all men, materials, etc., belonging to the contractor. The site shall be delivered in a broom clean and neat condition immediately after the job is completed. In case of failure by the contractor, the employer shall have the right to get the site cleared at the risk and cost of the contractor.

The contractor shall not without the written consent of the Bank/Architects assign the agreement or sublet any portion of words.

The quoted rates shall be all inclusive and cover the cost of all materials, freight, all types of taxes, duties, royalties, erection, construction, overhead, profit and any other expenditure incurred for completion of work as per drawings and specifications.

Wherever required, the Bank/Architect shall instruct erecting items sample, or mock-up as the case may be, and upon approval of the same, the items shall be fabricated and completed by the contractor(with or without modifications as the Bank/Architects shall instruct).

The final bill from the contractor shall not be entertained under any circumstances without full completion of all the items of works. Any work found defective wrongly carried out, and instructed by the Bank/Architect to be rectified or replaced shall be rectified or replaced prior to submission of final bill. It is to be expressly noted that no final bill will be held valid in the event of non-rectification of the defective or wrongly carried out items and the completion date shall not on this account be extended. Defects liability period will be effective from the day of satisfactory completion of all the items of works, as may be certified by the Architect.

In the event of the work being executed on holidays/beyond the Bank normal office working hours which might be required for the completion of the work within the stipulated time, the utmost care to be taken for not to disturb to normal working of Branch prior permission shall be obtained in the event of any night work is to be carried out.

While executing the work, considerable amount of shifting and re-shifting of several furniture items are likely to be involved. It is also likely that some of the items might be required to temporarily shift elsewhere in the premises on any other floors. Theses shall be done by the Contractor, and no payment against these works shall be separately paid for by the Bank. As the work is to be carried out and completed in the working Bank, the contractor shall be responsible for maintaining the premises in clean condition every morning for the normal functioning of the Bank.

The contractor shall acquaint himself with the site conditions, local traffic regulations, local authority regulations availability of materials, labour, tax, structure, etc., and quote rates accordingly. No extra charges/increases in rates shall be allowed on any of these or any other accounts.

The contractor shall have a component supervisor on the site at all the times. The contractor and/or his authorized representatives will attend all the meetings, whenever called for and the decisions taken in meeting will be binding on the contractor.

The contractor shall extend all necessary help to the agencies help to the agencies of associated works like Interior, A.C, Electrical works, Intercom works, Computer wiring works, fire detection works and works to be carried out by landlords agencies in such a manner that they can carry out their works smoothly and whole finished work must appear absolutely integrated. Nothing extra shall be paid on this account whatsoever. Figured dimensions are in all cases to be followed and in no case should they be scaled. Large scale details take precedence over small-scale drawings. In case of any ambiguity, conflict of interpretation shall prevail; the Bank/Architects decisions in this regard shall be final and binding.

The contractor shall be given a single electrical connection at the work site. Electrical charges for consumption by the contractors will be charged separately by the Bank.



The contractor shall be bound to carry out any extra items of work, whenever possible the rate for extra item shall be derived from the rate already quoted, otherwise the rate shall be worked out at cost of material + labour + 15% overhead wastage and profit.

The contractor shall submit his running bills for payment concerning work executed or materials delivered on the site, or work executed at his workshop which will be certified by the Architect for payment within 10 days from the date of submission of bill.

The architect will not certify any application for payment if there are:

- a. Defective items of work still uncorrected.
- b. Any claims or liens filed against the contractor for failure to pay for materials, labour or sub-contractors amount due; or reasonable evidence that includes probable filing of such claims
- c. Damage to another contractor.
- d. A reasonable doubt that the contractor can be completed for the balance then unpaid.

When the works are completed in all respects, the Contractor shall intimate in writing to the Architects and bank to enable to take possession of the same. The works shall not be considered virtually complete until the Bank/Architect have jointly inspected the works and certified in writing that this has been completed.

Contractor's Seal and Signature.

## GENERAL CONDITIONS OF CONTRACT

Except where provided for in the description of the individual items in the schedule of quantities in the specifications, conditions laid down hereinafter and in the Drawings, the work shall be carried out as per standard specifications and under the direction of Bank/Architects.

### INTERPRETATION:

In constructing these conditions, the specifications, the schedule of quantities, tender and Agreement, the following words shall have the meaning herein assigned to them except where the subject or context otherwise requires:

a. **Employer:** The term employer shall denote **UNION BANK OF INDIA, Its Regional Office Karimnagar, TS** and any of its employees representatives authorized on their behalf.

b. **Architects:** The term Architects shall mean **M/s AKRITI ARCHITECTURE, HYDERABAD** Or in the event of his/her ceasing to be the Architects for the purpose of this contract such other persons/as the Employer shall nominate for the purpose.

c. **Contractor:** The term contractor shall mean ..... (Name and address of the contractor) and his/hers legal representatives, assign and successors.

**Site:** The site shall mean the site where the works are to be executed. The site is in **UNION BANK OF INDIA, MALLAPUR BRANCH.**

d. **Site Engineer:** The site engineer shall be appointed by the Bank/Architect. The bank may also determine the number of site Engineers and the supporting staff at site office to assist them and also whether the site engineer shall be temporary or permanent. As far as possible, the site engineer should assume change of his post before the contractor reports on site of work. Where more than one site engineer appointed, one of them shall be designated as senior engineer by the Premises Department and the other Site Engineer shall be reporting to the Senior Engineer.

e. The work is to be carried out in accordance with drawings, specifications, the schedule of quantities and any further drawings which may be supplied or any other instructions, which may be given by the employer during the execution of the work. All drawings relating to work given to the contractor together with a copy of schedule of quantities are to be kept at site and the Employer/Architects shall be given access to such drawing and/or dimensional sketches therefore and have it confirmed by the Employer/Architects prior to taking up such work. The contractor shall ask in writing for all clarifications on matter occurring anywhere in drawings, specifications and schedule of quantities or to additional instructions at least 3 days ahead from the time when it is requires for implementation so that the Employer may be able to give decision thereon.

f. "The Works" shall mean the work or works to be executed or done under this contract.

g. "Act of insolvency" shall mean any act as such as defined by the Presidency Towns insolvency Act or in Provincial Insolvency Act or any amending statutes.

h. "The schedule of Quantities" shall mean the schedule of quantities as specified and forming part of this contract.

i. "Priced Schedule of Quantities" shall mean the schedule of quantities duly price with the accepted quoted rates of the contractors.

## 2. SCOPE:

The work consists of construction of Employer's Interior/Civil and Electrical works 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 completion of the work. Should any detail essential for efficient completion of the work be omitted from the drawings and specifications it shall be the responsibility of the contractor to inform the Employer/Architects and to furnish and install such detail with Employer's/Architects concurrence, so that upon completion of the proposed work the same will be acceptable and ready for use.

Employer/Architects may in their absolute discretion issue further drawings and/or written instructions, details, directions and explanations, which are hereafter collectively referred to as "The Employer's/Architect'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 thereon 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 thereupon.
- 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 Bank's/Architects' instructions, provided always that verbal instructions, directions and explanations given to the contractor's or his representatives upon the works by the Bank/Architects shall if involving a variation be confirmed in writing to the contractor 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 Bank/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 variable, only products bearing ISI marking shall be used in the work.

## 3. TENDERER SHALL VISIT THE SITE:

Intending tendered 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 cost of carriage, freight and other charges as also for any special difficulties and including police restriction for transport etc., for proper execution of work as indicated in the drawing. The successful tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred an 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.

#### 4. TENDERS:

The entire set of tender paper issued to the tenderer should be submitted fully priced and also signed on the last page together with initials on every page. Initial/Signature will indicate the acceptance of the tender papers by the tenderer. The schedule of quantities shall be filled in as follows:

- (i) The 'Rate' column to be legibly filled in ink in both English figures and English words.
- (ii) Amount column to be filled in for each item and the amount for each circle as detailed in the "Schedule of Quantities".
- (iii) All corrections are to be initialed.
- (iv) The 'Rate Column' for alternative items of which the quantities are not mentioned shall not be filled up.
- (v) In case of any errors/omissions in the quoted rates, the rates given in the tender marked 'Original' shall be taken as correct rates.

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.

The Bank 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.

The tender should note that tender is strictly on the item rate basis and their attention is drawn to the fact that the rate for each and every item should be correct, workable and self-supporting. If called upon by the Employer/Architects detailed analysis of any or any or all the rates shall be submitted. The Employer/Architects shall not be bound to recognize the contractor's analysis.

The work will be paid for the "measured work" on the basis of actual work done and not as "Lump sum" contract.

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 any 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 charges as will be assessed to be payable by the Employer/Architects.

The employer has power to add to, omit from 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.

The tenderer shall note that his tender shall remain open for consideration for a period of 90 calendar days from the date of opening of the tender.

#### 5. AGREEMENT:

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

## **6. PERMITS AND LICENSES:**

Permits and licenses for release of materials which are under Government control will be arranged by the contractor. The employer will render necessary assistance, sign any form or applications that may be necessary. The basic price of controlled materials for the purpose of valuing the tender is to be considered as stipulated below. This will also be the basis of adjustment in settling the contractor's bills.

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 will, however, be eligible to a proportionate extension of time on this account which in the opinion of the Bank/Architects is reasonable. 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 Bank. 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 Bank/Architects shall be indemnified against all government or legal actions for theft and any other controlled materials in the custody of the contractor.

## **7. GOVERNMENT AND LOCAL RULES:**

The contractor shall confirm to the provision of all local Bye-laws and Acts relating to the work and to the Regulations etc., of the government and local authorities and of any company with whose system the structure is proposed to be connected. The contractor shall give all notices required by said Act, Rules, Regulations and Bye-laws etc., and pay all fees payable to such authority/authorities for execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc., and shall indemnify the Employer against such liabilities and shall defend all actions arising such claims or liabilities.

## **8. TAXES AND DUTIES:**

Tenderers must include in their tender prices quoted for all duties, royalties, cost, sales tax, work contract tax, service tax, Labour Cess or any levies, taxes etc. GST will be paid extra as applicable.

## **9. PROVISIONAL SUMS (PS):**

All provisional sums described in the schedule of quantities as PS shall be exclusively 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 circle will be absolutely at the discretion of the Bank. Contractor is to make payments for these materials to the suppliers on certificate or order issued by the Bank/Architects and realizes them through his bills from the Bank.

**10. QUANTITY OF WORK TO BE EXECUTED:**

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

**11. 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 reasonable facilities and use of his scaffolding for the execution of such work. The main contractor shall extend all co-operations in this regard.

**12. EARNEST MONEY DEPOSIT:**

The tendered will have to deposit an amount as specified in tender notice in the form of Bank Draft drawn in favour of **The UNION BANK OF INDIA - REGIONAL OFFICE KARIMNAGAR** at the time of submission of tender as an Earnest Money. The employer is not liable to pay any interest on the Earnest Money of the unsuccessful tenderer will be refunded without any interest soon after the decision to award the work is taken or after the expiry of the validity period of the tender.

**13. INITIAL SECURITY DEPOSIT:**

The successful tendered to whom the contract is awarded will have to deposit as initial security deposit a further sum to make up 2% of the value of the accepted tender including the Earnest Money. The initial Security Deposit will have to be made within fourteen (14) days from the date of acceptance of tender, failing which the Employer at his discretion may revoke the letter of acceptance and forfeit the Earnest Money deposit furnished along with the tender. The initial Security Deposit shall be refunded to the contractor without accrued interest within fourteen days after the issue of certificate virtual completion.

**14. RETENTION MONEY:**

Apart from the initial security made as above, retention money shall be deducted from progressive running bills @ 8% of the gross value of each running bill. The retention amount will be refunded to the contractor 14(fourteen) days after the end of defects liability period of One year 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.

**15. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY:**

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 Bank/Architects whose decision shall be final and binding.

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.

The contractor shall at all times give access to workers employed by the Bank or any 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 tenderer shall accordingly include all these above mentioned contingent works.

**16. TIME OF COMPLETION EXTENSION OF TIME AND PROGRESS CHART:**

- a. **Time of Completion:** The entire work is to be completed in all respects within the stipulated period. The work shall be deemed to commence within seven days from the date of acceptance letter or date of handing over of site, whichever is earlier. Time is essence of the contract and shall be strictly observed by the contractor.

The work shall not be considered as complete until the Bank/Architects have certified in writing that this has been completed and the Defects Liability Period shall commence from the date of such certificate.

- b. **Extension of Time:** If in the opinion of the Bank/Architects the works be delayed

- (i) By reason of any exceptionally inclement weather, or
- (ii) By reason of instructions from the Bank consequence of proceedings taken or threatened by or disputed, with adjoining or neighboring owners or
- (iii) By the works, or delay, of other contractors or tradesmen engaged or nominated by the Employer and not referred to in the specification or
- (iv) By reason of authorized extra and additions or
- (v) By reason of any combination of workmen or strikes or lock-out affecting any of the building trades or
- (vi) From other causes which the Bank may consider are beyond the control of the contractor, the bank at the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect thereof. In the event of the Bank failing to give possession of the site upon the day specified above the time of completion shall be extended suitably.

In case of such strikes or lock-outs, as are referred to above, the contractor shall, immediately give the bank, written notice thereof. Nevertheless, the contractor shall use his best endeavors to prevent delay, and shall do all that may be reasonably required, to the satisfaction of the employer to proceed with the works and on his doing so that it will be ground of consideration by the employer for an extension of time as above provided. The decision of the employer as to the period to be allowed for an extension of time for completion hereunder (which decision shall be final and binding on the contractor) shall be promulgated at the consideration of such strike or lock-out and the employer shall then, in the event of an extension being granted, determine and declare the final completion date.

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

#### 17. LIQUIDATED DAMAGES:

Should the work be not completed to the satisfaction of the Employer/Architect within stipulated period the contractor should be bound to pay to the Employer a sum calculated as given below by way of liquidated damages and not as penalty during which the work remains uncommenced or unfinished after the expiry of the completion date.

- |   |   |
|---|---|
| a. For contracts having time for completion 6 months and less                               | 1% of the estimated amount shown in the tender per week subjected to 10% of the accepted contracted sum.    |
| b. For contracts having time for completion exceeding 6 months but not exceeding 24 months. | 0.5% of the estimated amount shown in the tender per week subjected to 7.5% of the accepted contracted sum. |
| c. For contracts having time for completion exceeding 24 months.                            | 0.25% of the estimated amount shown in the tender per week subjected to 5% of the accepted contracted sum   |

#### 18. TOOLS, STORAGE OF MATERIALS, PROTECTIVE WORKS AND SITE OFFICE REQUIREMENTS:

The contractor shall provide, fix up and maintain in an approved position proper office accommodation for the contractor's representative and staff which offices shall be open at all reasonable hours to receive instruction notices or communications and clear away on completion of the works and make good all distributed work.

All drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat a approved varnish. They are to be protected from ravages of termites, ants and other insects.

The contractor shall provide at his own cost all artificial light required for the work and to enable other contractors and sub-contractors to complete the work within the specified time.

The contractor shall provide a suitable temporary hut for the watchmen and clear away the same when no longer required and to provide all necessary attendance, lights, etc., required.

The contractor shall arrange for temporary latrines for the use of workers and field staff and keep the same in clean and sanitary condition to the satisfaction of the public Health Authorities and small cause such latrines and soil to be cleared away whenever necessary and shall make good all the works disturbed by these conveniences.

Every precautions shall be taken by the contractor to prevent the breeding of mosquitoes on the works during the constructions, and all receptacles, cisterns, water tanks, etc., used for the storage of water must be suitable protected against breeding of mosquitoes. The contractor shall indemnify the employer against any breach of rules in respect of anti-malarial measures.

The contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed in or upon any boarding gantry, building structure other than those approved by the Employer.

**Protective Measures:** The contractor from the time of being placed in possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on Sundays and other holidays.

**Tools:** The contractor should cover in his rates for making provisions for all reasonable facilities for the use of his scaffolding, tools etc., by sub contractors for their work.



**19. NOTICE AND PATENTS OF APPROPRIATE AUTHORITY AND OWNERS:**

The contractor shall confirm to the provisions of any Acts of the Legislature relating to the work, and to the regulations and bye-laws of any authorities, and/or any water, lighting and other companies, and/or authorities with whose systems the structures were proposed to have connection and shall before making any variations from the drawings or specification that may be associated to so conform, give the Employer/Architects written notices specifying the variations proposed to be made and the reasons for making them and apply for instruction thereon. The Employer/Architects on receipt of such intimation shall give a decision within a reasonable time.

The contractor/s shall arrange to give all notices required for by the said Acts, Regulations or Bye-Laws to be given to any authority, and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the Employer.

The contractor shall indemnify the Employer against all claims in respect of patent right, royalties, damages to building, roads or members of public in course of execution of work and shall defend all actions arising from such claims and shall keep the Employer saved harmless and indemnified in all respects from such actions, costs and expenses.

**20. CLEARING SITE AND SETTING OUT WORKS:**

The site shown on the plan shall be cleared of all obstructions. If at any time, any error shall appear during the progress of any part of the work, the contractor shall at his own expenses rectify such error if called upon to the satisfaction of the Employer. The contractor shall further set out the works to the alternative positions at the site until on is finally approved and the rates quoted in his tender should include for this and no extra on this account will be entertained.

**21. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS:**

All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workman like manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars, and instructions as may from time to time be given by the Employer/Architects during the execution of the work, and to his entire satisfaction.

If required by the Employer/Architects the contractor shall have to carry out tests on materials and workmanship in approved materials testing laboratories or as prescribed by the Employer/Architects at his own cost to prove that the materials etc., under test conform to the relevant I.S Standards or as specified in the specifications. The necessary charges for preparation of transporting, testing, etc. shall have to be borne by the contractor. No extra payment on this account should in any case be entertained.

All the materials stores and equipment required for the full performance of the work under the contract must be provided through normal channel and must include charge for import duties, sales tax, octroi and other charges and must be the best of their kind available and the contractor/s must be entirely responsible for the proper and efficient carrying out of the work. The work must be done in the best workmanlike manner. Samples of all materials to be used must be submitted to the Employer/Architects when so directed by the Engineer/Architects and written approval from Employer/Architects must be obtained prior to placement of order.

Should the work be suspended by reason of rain, strike, lock-outs or any other cause, the contractor shall take all precautions necessary for the protection of work and at his own expenses shall make good any damage arising from any of these causes.

The contractor shall cover up and protect from damage, from any cause, all new work and supply all temporary/doors, protection to windows and any other requisite protection for the extension of the work whether by himself or special tradesmen or subcontractor and any damage caused must be made good by the contractor at his own expenses.

## **22. REMOVAL OF IMPROPER WORK:**

The employer shall during the progress of the work have power to order in writing from time to 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 are not in accordance with specifications or instructions, 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 thereto as certified by the Employer/Architects 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.

## **23. SITE ENGINEER:**

The term 'Site Engineer' shall mean the person appointed and paid by the Employer to superintend the work. The contractor shall afford the Site Engineer every facility and assistance for examining the works and materials and for checking and measuring work and materials. The Site Engineer shall have no power to revoke, alter, enlarge or relax any requirements of the contractor or to sanction any day work, additions, alterations, deviations or omission any extra work whatever, except in so far as such authority may be specifically conferred by a written order of the Employer.

The site engineer shall have power to give notice to the contractor or to his foreman, of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Employer is obtained. The work will from time to time be examined by the Architects, Engineer from the premises department of the Employer and the Site Engineer. But such examination shall not in any way exonerate the contractor from the obligation to remedy any defects which may be found to exist at any stage of the work or after the same is complete. Subject to the limitation of this clause the contractor shall take instructions only from the Architects/Engineer.

## **24. CONTRACTOR'S EMPLOYEES:**

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 the instructions of the Employer/Architects. The contractor shall engage at least one experienced Engineer as site-in-charge for the execution of the work. The contractor shall employ in connection with the work person having the appropriate skill or ability to perform their job efficiently.

The contractor shall employ local labourers on the work as far as possible.

No labour below the age of 16 years and who is not an Indian National shall be employed on the work.

Any labourer applied 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.

The contractor shall comply with the provision of all labour legislation including the requirements of

- a. The payment of Wages Act
- b. Employer's Liability Act
- c. Workman Compensation Act
- d. Contract Labour (Regulation & Abolition) Act, 1970 & Central Rules 1971.
- e. Apprentices Act 1961
- f. Any other Act or enactment relating thereto and rules framed there under from time to time.

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.

The contractor shall arrange to provide first aid treatment to the labourers engaged on the works. He shall within 24 hours of 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.

## **25. DISMISSAL OF WORKMEN:**

The contractor shall on the request of the Employer immediately dismiss from works any person employed thereon by him, who may in the opinion of the Employer be unsuitable or incompetent or who may misconduct himself. Such discharge shall not be basis of any claim for compensation or damages against the Employer or any of the officer or employee.

## **26. ASSIGNMENT:**

The whole of the works included in the contract shall be executed by the contractor and the contractor shall not directly or indirectly transfer, assign or undersert the contract or any part, share or interest therein nor, shall take a new partner, without written consent of the Employer and no subletting shall relieve the contractor from the full and entire responsibility of the contract or from active superintendence of the work during their progress.

## **27. DAMAGE TO PERSONS AND PROPERTY INSURANCE ETC.,**

The contractor shall be responsible for all injury to the work or workmen to persons, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of himself or of any sub-contractor or of any of his or a sub-contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with carrying out of this contract. The clause shall be held to include inter-alia, any damage to building whether immediately adjacent or otherwise, and any damage to roads, streets, foot paths or ways as well as damages caused to the buildings and the works forming the subject of this contract by rain wind or other inclemency of the weather. The contractor shall indemnify the Employer and hold harmless in respect of all and any expenses arising from any such injury or damages to persons or property as aforesaid and also

in respect of any claim made in respect of injury or damage under any acts of compensation or damage consequent upon such claim.

The contractor shall reinstate all damage of every sort mentioned in this clause, so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the damages to the property or third parties.

The contractor shall affect the insurance necessary and indemnify the Employer entirely from all responsibility in this respect. The insurance must be place with a company approved by the Employer and must be effected jointly in the name of the contractor and the employer and the policy lodged with the later. The scope of insurance is to include damage or loss to the contract itself till this is made over in a complete state. Insurance is compulsory and must be affected from the very initial stage. The contractor shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this contract.

The employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or accruing from or in respect of any such claim or damages from any sums due or to become due to the contractor.

## **28. INSURANCE:**

Unless otherwise instructed the contractor shall insure the works and keep them insure until the virtual completion of the contractor against less or damage by fire and/or earth quake, flood. The insurance must be placed with a company approved by the Employer, in the joint names of the Employer and the contractor for such amount and for any further sum if called to do so by the employer, the premium of such further sum being allowed to the contractor as an authorized extra.

The contractor shall deposit the policy and receipt for premium paid with the Employer within 21 (twenty one) days from the date of issue of work order unless otherwise instructed. In default of the contractor insuring as provided above, the employer on his behalf may so insure and may deduct the premiums paid from any money due, or which may become due to the contractor. The contractor shall as soon as the claim under the policy is settled or the work reinstated by the Insurance company should they elect to do so, proceed with due diligence with the completion of the works in the same manner as though the fire has not occurred and in all respects under the conditions of the contract. The contractor in case of rebinding or reinstatement after fire shall be entitled to extension of time for completion as the Employer may deem fit.

## **29. ACCOUNTS RECEIPTS AND VOUCHERS:**

The contractor shall upon the request of the employer furnish them with all invoices, receipts, accounts and other vouchers that may require in connection with the work under this contract. If the contractor shall use materials less than what he is required under the contract, the value of the work difference in the quantity of the materials he was required to use and that he actually used shall be deducted from his dues. The decision of the Employer shall be final and binding on the contractor as to the amount of materials the contractor is required to use for any work under this contract.

Before taking any measurement of any work the site Engineer or a subordinate deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend at the measurements after such notice or fails to counter sign or to record the difference within a week

from the date of measurement in the manner required by the site engineer then in any such event the measurements taken by the site engineer or by the subordinate deputed by him as the case maybe is final and binding on the contractor and the contractor shall have no right to dispute the same.

### **30. PAYMENTS:**

All bills shall be prepared by the contractor in the form prescribed by the Employer/Architects. Normally one interim bill shall be prepared each month subject to minimum value for interim certificate as stated in these documents. The bills in proper forms must be duly accompanied by detailed measurements in support of the quantities of work done and must show deductions for all previous payments, retention money, etc.,

The Employer/Architects shall issue a certificate after due scrutiny of the contractor's bill stating the amount due to the contractor from the Employer and the contractor shall be entitled to payment thereof, within the period of honoring certificates named in these documents.

The amount stated in an interim certificate shall be the total value of work properly executed and 75% of invoiced value of material brought of site for permanent incorporation into the work up to the date of the bill less the amount to be retained by the Employer as retention money vide clause 12 of these conditions, provided that such certificate shall only include the value of said material and good as and from such time as they are reasonably, properly and not prematurely brought to or places adjacent to the work and then only if adequately protected against weather or other casualties.

The employer will deduct retention money as described in clause 12 of these conditions. The refund of retention money will be made as specified in the same clause.

If the Employer has supplied any materials or goods to the contractor, the cost of any such materials or goods will be progressively deducted from the amount due to the contractor in accordance with the quantities consumed in the work.

All the interim payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed, and shall not preclude the requiring of bad, unsound, and imperfect or unskilled work to be removed and taken away and reconstructed, or reelected or be considered as an admission of the due performance of the contract, or any part thereof in any respect or the accruing of any claim, nor shall, it conclude determine or affect in anyway the power of the Employer under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract. 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.

### **31. FINAL PAYMENT:**

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 14 of these conditions, which sum shall be refunded after the completion of the Defects Liability Period of Twelve (12) months after receiving the Employer's/Architects certificate that the contractor has rectified all defects to the satisfaction of the Employer/Architects. 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.

**32. VARIATION/DEVIATION:**

The price of all such additional items/non-tendered items will be worked out on the basis of rate quoted for similar items in the contract whether existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required. The tender rates, shall hold good for any increase or decrease in the tendered quantities up to variation of 10%. For variation beyond +/- 10%, the rate for the respective item may be reviewed on mutually agreed terms.

**33. 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. Materials designated in this specification indefinitely by such term as "Equal" or "Other approved" etc., specific approval of the Employer/Architects has been obtained in writing.

**34. PREPARATION OF WORKS FOR OCCUPATION & USE ON COMPLETION:**

The whole of the work will be thoroughly inspected by the contractor and deficiencies and defects put right. On completion of such inspection the contractor shall inform the Employer that he has completed the work and it is ready for inspection. On completion the contractor shall clean all windows and doors including the cleaning and oiling if necessary, of all hardware, inside and outside, all floor, staircases, and part of the building. He will leave the entire building neat and clean and ready for immediate occupation and to the satisfaction of the bank.

**35. CLEARING SITE ON COMPLETION:**

On completion of the works the contractor shall clear away and remove from the site all surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workman like condition to the satisfaction of the Employer/Architects.

**36. 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 12 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, deduct from any money due to 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 No. 12 together with any expenses the Employer may have incurred in connection therewith.

**37. CONCEALED WORK:**

The contractor shall give due notice to the Employer/Architects whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the opinion of the Employer/Architect be either opened up for measurement at the contractor's expense or no payment may be made for such materials. Should any dispute to differences arise after the execution of any work as to measurements etc., or other matters which cannot be conveniently tested or checked, the notes of the Employer/Architects shall be accepted as correct and binding on the contractor.

**38. ESCALATION:**

The rate 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, labour, sales tax, octroi, etc., unless specifically provided in these documents.

**39. IDLE LABOUR:**

Whatever the reasons may be no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

**40. SUSPENSION:**

If the contractor except on account of any legal restraint upon the Employer preventing the continuance of the work or in the opinion of the Employer shall neglect or fail to proceed with due diligence in the performance of his part of the contract or if he shall more than once make default, the Employer shall have the power to give notice in writing to the contractor requiring the work be proceeded within a reasonable manner and with reasonable dispatch, such notice purport to be a notice under this clause.

After such notice shall have been given the contractor shall not be at liberty to remove from the site of the works or from any ground contiguous thereto any plant or materials to subsist from the date of such notice being given until the fall for 7 (seven) days after such notice has been given to proceed with the works as therein prescribed, the Employer may proceed as provided in the following.

**41. TERMINATION OF CONTRACT BY EMPLOYER:**

If the contractor being a company go into liquidation whether voluntary or compulsory or being a firm shall be dissolved or being an individual shall be adjudicated insolvent or shall make an assignment or a composition for the benefit of the greater part, in number or amount of his creditors or shall enter into a Deed or arrangement with his creditors, or if the Official Assignee in insolvency, or the Receiver of the contractor in insolvency, shall repudiate the contract, or if a receiver of the contractor's firm appointed by the court, shall be unable within fourteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the employer that he is able to carry out and fulfill the contract, and if so required by the employer to give reasonable security there for, or if the contractor shall suffer execution to be issued, or shall suffer any payment under this contract to be attached by or on behalf of and of the creditors of the contractor, or shall assign, charge or encumber this contract or any payments due or which may become due to the contractor, there under, or shall neglect or fail to observe and perform all or any of the acts matters of things by this contract, to be observed and performed by the contractor within three clear days after the notice shall have been given to the contractor in manner hereinafter mentioned requiring the contractor to observe or perform the same or shall use improper materials or workmanship in carrying on the works, or shall in the opinion of the employer not exercise such due diligence and make such due progress as would enable the work to be completed within due time agreed upon and shall fail to proceed to the satisfaction of the employer after three clear days notice requiring the contractor so to do shall have been given to the contractor as hereinafter mentioned, or shall abandon the contract, then and in any of the said cases, the bank may notwithstanding previous waiver determine the contract by a notice in writing to the effect as hereinafter mentioned, but without thereby effecting the powers of the employer of the obligations and liabilities of the contractor the whole of which shall continue in force as fully as if the contract, had not been so determined and as if the works subsequently executed had been executed by or on behalf of the contractor (without thereby creating any trust in favour of the contractor) further the employer or his agent, or servants, may enter upon and take possession of the work and all plants, tools, scaffolding, sheds, machinery, steam and other power, utensils and materials lying upon premises or the adjoining lands or roads and sell the same as his own

property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other contractors or other persons or person to complete the works, and the contractor shall not in any way interrupt or do any act, matter or things to prevent or hinder such other contractors or other persons or person employed from completing and furnishing or using the materials and plants for the works when the works shall be completed, or as soon thereafter as conveniently may be, the employer shall give notice in writing to the contractor to remove his surplus materials and plants and should the contractor for the amount so realized. Any expenses or losses incurred by the employer in getting the works carried out by other contractors shall be adjusted against the amount payable to the contractor by way of selling his tools and plants or due on account of work carried out by the contractor prior to engaging other contractors or against the Security Deposit.

#### **42. ARBITRATION:**

All disputes or differences of any kind whatsoever which shall at any time arise between the parties hereto touching or concerning the works or the execution or maintenance thereof of this contract of the rights touching or concerning the execution or maintenance thereof of this contract of the construction remaining operation or effect thereof or to the rights or liabilities of the parties to arising out of or in relation thereto whether during or after determination foreclosure of branch of the contract (other than those in respect of which the decision of any person is by the contract expressed to be final and binding) shall after written notice by either party to the contract to other of them and to the Employer hereinafter mentioned be referred for adjudication to a sole Arbitrator to be appointed as hereinafter provided.

For the purpose of appointing the sole Arbitrator referred to above, the Employer will send within thirty days of receipt of the notice, to the contractor a panel of three names of persons who shall be presently unconnected with the organization for which the work is executed.

The contractor shall on receipt of the names as aforesaid, select any one of the persons name to be appointed as a sole Arbitrator and communicate his name to the Employer within thirty days of receipt of the names. The Employer shall thereupon without any delay appoint the said person as the Sole Arbitrator. If the contractor fails to communicate such selection as provided above within the period specified, the competent authority shall make the selection and appoint the selected person as the Sole Arbitrator.

If the Arbitrator so appointed is unable or unwilling to act or resign his appoint or vacates his office due to any reason whatsoever another Sole Arbitrator shall be appointed as aforesaid.

The work under the Contract shall, however continue during the arbitration proceedings and no payment due to or payable to the contractor shall be withheld on account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issued notice to both the parties fixing the date of the first hearing.

The Arbitrator shall give a separate award in respect of each dispute or difference referred to him. The Arbitrator shall decide each dispute in accordance with the terms of the contract and give a reasoned award. The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion.

The fees, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award including the fees, if any, of the Arbitrator who may direct to and by whom and in what manner, such costs or any part thereof shall be paid and may fix of settle and amount of costs to be so paid.



The award of the Arbitrator shall be final and binding on both the parties. Subject to aforesaid the provisions of the Arbitration Act 1940 or any statutory modification or reenactment thereof and the rules made there under and for the time being in force, shall apply to the arbitration proceeding under this clause.

The Employer and the contractor hereby also agree that arbitrator under clause shall be condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

I/we hereby declare that I/we read and understood the above terms and conditions and that we shall abide them if the works is awarded to us.

#### **43. SAFETY CODE:**

##### **Personal Safety Equipment's:**

All necessary personal safety equipments as considered adequate by the Engineer 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 steps to ensure proper use of equipments by those concerned. The contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken:

##### **First Aid:**

a. At every work place, there shall be maintained in readily accessible place first aid appliance including and adequate supply of sterilized dressings and sterilized cotton wool. The appliance shall be kept in good order and in large work place they shall be places under the charge of a responsible person who shall be readily available during working hours.

b. At large work places, where hospital facilities are not available within easy distance of the works, first aid posts shall be established and be run by a trained compounder.

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

**Contractor's Seal and Signature.**

## **SPECIFICATION AND WORKMANSHIP**

### **GENERAL SPECIFICATIONS:**

#### **1. GENERAL:**

These specifications are for work to be done, if item to be supplied and materials to be used in the works as shown and defined on the drawings and described herein, to the satisfaction of the Bank/Architect.

The workmanship is to be the best possible and of a high standard. The contractor shall take all steps immediately to make up deficiency if any noticed by the Bank/Architects. Use must be made up of special tradesmen in all aspects of the work and allowances must be made in the rates for the same.

The materials is to be the best possible and of a high standard. The contractor shall take all steps immediately to make up deficiency if any noticed by the Bank/Architects. Use must be made up of special tradesmen in all aspects of the work and allowances must be made in the rates for the same.

The materials to be provided by the contractor shall be accordance with the samples already got approved from the Bank/Architect by the contractor and in conformity with specifications and approved list of manufactures and brand. The contractor shall produce all invoices, vouchers or receipts for any material if called upon to do so by the Bank/Architect.

Samples of all materials are to be submitted to the Bank/Architects for their approval before the contractor's orders or deliver the material to the site. Samples together with their packings are to be provided free of charge by the contractor and should any materials be rejected they will be removed from the site at the contractor expense. All samples will be retained by the Bank/Architects for comparison with materials which will be delivered at site. Also the contractor will be required to submit specimen finished of colors, fabrics, etc., for the approval of the Bank/Architects before proceeding with the works.

The contractor shall be responsible for providing and maintaining temporary coverages required for the protection of finished work. He is also to clean out all word shavings, cuts ends and other waste from all pats of the works before covering or infilling are constructed.

Contractor shall maintain uniform quality and consistency in workmanship throughout the execution of the work.

## ARTICLES OF AGREEMENT

Articles of Agreement made at **HYDERABAD** this day of \_\_\_\_\_ between **THE UNION BANK OF INDIA, REGIONAL OFFICE, KARIMNAGAR , TS...** (Hereinafter referred to as "The Employer" which expression shall unless excluded or repugnant to the context be deemed to include its successors and assigns) of the one part, and **M/s \_\_\_\_\_** carrying on business at \_\_\_\_\_ (hereinafter referred to as the "Contractor" which expression shall unless excluded or repugnant to the context be deemed to include their heirs, executors, administrators, representatives and assigns) of the other part.

### WHEREAS

The Employer is desirous of carrying out the **AIR CONDITIONING WORKS** for The **UNION BANK OF INDIA, MALLAPUR BRANCH**. and has drawings and specifications, schedule of quantities describing the work to be done, have been prepared by the Consultant **M/s AKRITI ARCHITECTURE, HYDERABAD** , under the direction of the Employer. The Employer is desirous of completing the said work strictly and according to the said drawings and specifications.

1. The contractors in their tender dated \_\_\_\_\_ and negotiations through letter on \_\_\_\_\_ have agreed to execute the said works as per said drawings specification and schedule of quantities, rates and subject to the conditions set forth in the special conditions of contracts (all of which are collectively hereinafter referred to as "the said conditions"). The special conditions and condition of contract have been persued, examined and accepted by the contractor. Total tender value is accepted as Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only).
2. The contractor has deposited Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) with the Employer Security Deposit for performance of this agreement.

### NOW IT IS HEREBY MUTUAL AGREED AND DECLARED BETWEEN THE PARTIES HERETO AS FOLLOWS:

1. The contractor hereby agrees and undertakes to execute and complete the said works shown in the said drawings and such further detailed drawings as may be furnished to it by the Employer and described in the said specification and the said schedule of quantities upon and subject to the said conditions.
2. The Employer shall for such interior works, pay to the contractor such sums as shall become payable at time, in the manner specified in the said conditions.
3. The said tender and allied documents, drawings, specification, prices schedule of quantities, agreement and documents above mentioned, shall from the basis of this contract and the decision of the Employer as mentioned in the condition of contract with reference to the clauses of this agreement or the said conditions shall be final and binding on both the parties.
4. The contract herein contained, comprises of the said work above mentioned and all subsidiary works connected therewith in the same site may be ordered to be done from time to time by the Employer even though such works may not be shown in the said drawings or described in the said specifications or the schedule of quantities. The contractor hereby agrees and undertakes to do and perform all such works in a though and work man like manner. With best materials and within the time limit herein mentioned.
5. The employer reserved to himself the right after the drawings and nature of the work and of adding or omitting any item of work or of having portions of the same carried out departmentally or otherwise and such alterations and such alterations or variations shall be carried out without prejudice to this contract.
6. The said conditions shall be read and constructed as forming part of this agreement and parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreements on their parts respectively as such conditions contained.
7. It will be the entire responsibility of the contractor to procure all materials required for the said works.

8. The contractor shall complete the said work within **30 DAYS** from the date of commencement of work as per work order for the work and will remove from the site all plants, scaffoldings, materials, in use rubbish and leave the work site clean within the said period.

9. All disputes arising out of or in anyway connected with this agreement shall be deemed to have arisen in Hyderabad and only in courts in Hyderabad shall have jurisdiction to determine the same.

10. The several parts of this contract have been read and fully understood by us.

11. The work-order issued to the contractor shall be treated as part of this agreement.

In witness where of the parties hereto have set their respective hands on the day month and year above written.

Signed and Delivered by

Signed and Delivered by

The Bank

The Contractor

In the presence of Witness

In the presence of Witness

## **TECHNICAL SPECIFICATIONS FOR AC WORKS**

### **A. Cassette type indoor units.**

These units shall be installed between the bottom of finished slab & top of false ceiling.

The maximum allowable height for the cassette type units shall not exceed 350 mm.

The unit shall be pre charged with first charge of R 32 / R 134A / R 407 / R 410 refrigerant. Additional charge shall be added as per refrigerant piping at site.

The unit must have in built drain pump, suitable for vertical lift of 750 mm.

The unit casing shall be Galvanized Steel Plate / or as per manufacturer's specifications.

Unit must be insulated with sound absorbing thermal insulation material, Polyurethane foam. The noise level of unit at the highest operating level shall not exceed 42 dB(A), at a vertical distance of 1.5 m from the grille of the unit.

Unit shall have provision of connecting fresh air without any special chamber & without increasing the total height of the unit (288 mm maximum).

The unit shall be supplied with suitable decorative panel.

The unit shall be supplied with Resin Net filter with Mold Resistance. The filter shall be easy to remove, clean & re install.

The unit will be connected in series to a suitable outdoor unit & it must be possible to Operate the unit independently, through corded/ cordless remote specified in the "Bill of quantities". The unit will be further connected to Intelligent Building Management System (To be supplied by other vendors) & it shall be possible to operate the unit through this IBMS system.

The unit shall be supplied with following from the factory with following:

Operation Manual

Installation Manual

Paper pattern for installation

Drain hose/ Clamp metal/ Washer fixing plate/ Sealing pads/ Clamps/ Screws/Washer for hanging bracket/ Insulation for fitting

### **B. Wall Mounted Units.**

Wall mounted units must be compact & stylish design that does not detract from the Décor of the room. 44 Signature of Contractor

The unit shall be precharged with first charge of R 32 / R 134A / R 407 / R 410 refrigerant.

Additional charge shall be added as per refrigerant piping at site.

Each indoor unit must have electronic expansion valve operated by microprocessor thermostat based temperature control to deliver cooling/ heating as per the heat load of the room.

The unit must have provision of adding drain pump kit if required & specified. The drain pump must be suitable to lift drain up to 1000 mm from the bottom of the unit.

Unit must be insulated with sound absorbing thermal insulation material, polystyrene/Polyethylene foam. The noise level of unit at the highest operating level shall not exceed 46 dB(A), at a vertical distance of 1.5 m from the grille of the unit.

The unit shall be supplied with Resin Net filter with Mold Resistance. The filter shall be easy to remove, clean & re install.

The unit grille must be washable with soap solution.

It shall be possible to set minimum 5 steps of discharge angle by remote controller.

It shall be possible to fit drain pipe from either side of the unit (Left or right)

The unit will be connected in series to a suitable outdoor unit & it must be possible to Operate the unit independently, through corded/ cordless remote specified in the bill of quantities. The unit will be further connected to Intelligent Building Management System(To be supplied by other vendors) & it shall be possible to operate the unit through this IBMS system.

The unit shall be supplied with following from the factory with following:

Operation Manual

Installation Manual

Installation panel

Paper pattern for installation

Insulation tape/ Clamps/ Screws

**A - 1: COPPER TUBING.**

The parent material used for air - conditioning system refrigerant tubing should be Copper tubes, tubes and fittings conforming to following specifications:

1. Material composition should be conforming to C-1220 (JIS-H-3300) or C-12200 (ASTM).It should have a minimum Copper content of 99.9 % and 45 Signature of Contractor

Phosphorus content between 0.015 % and 0.040 %. It should have low residue ( below 0.038 gm / sq mtr ). The material should also be as per the RoHS norms specified by EU; that is, Mercury,

Chromium and Lead contents below 1000 ppm, and Cadmium content below 100 ppm.

2. Physical properties of the material should conform to JIS-H-3300 or ASTM-B-68 & B-75, should be tested for Tensile / elongation / hardness / grain size tests as per ASTM B -280.

3. Dimensional tolerance should be as per JIS-H-3300 or ASTM-B-251. The tubes should be tested using non-destructive Eddy current test before the final anneal, as per JIS-H-3300 or ASTM-E-243.

4. Heat treatment should be carried out in non-oxidizing atmosphere to ensure oxygen free and Cuprous oxide-free surface.

5. Proper certificates describing composition and results of all tests carried out must be supplied with each consignment. These certificates, along with check results for dimensional and thickness accuracy are recommended to be carried out for every delivered lot, should be maintained till handing over of the project.

6. Tubes should have 360 degree concentric wall thickness along their entire length.

7. Wall thickness for soft tubes (bright annealed mirror finish ) should be 0.8 mm for 1/4", 3/8" & 1/2" tubes, 1.0 mm for 5/8" tubes, 1.2 mm for 3/4" tubes. Wall thickness for hard tubes should be 1 mm for 7/8", 1" and 1.1/8" tubes, 1.1 mm for 1.1/4", 1.2 mm for 1.3/8" and 1.3 mm for 1.5/8" tubes.

8. Wall thickness for elbows and fittings should be minimum 0.2 mm more than corresponding tube / tube size.

9. For 1/4" to sizes up to 3/4", pulley type benders should be used for soft tubes and brazed joints should be avoided as far as possible. Similarly, for half hard tubes of size 3/4" or more, one side expanded tubes must be used and use of couplings should be avoided as far as possible.

#### **A -2 : TUBING DESIGN:**

1. Contractor should study the tender / GFC drawings carefully, and should carry out detailed survey of site, relating the drawings with site, and understand the system design and site limitations.

2. Contractor should also collect final architectural and reflected ceiling plans from client and study the drawings for any mismatches with the HVAC drawings received.

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3. Contractor should discuss any such mis- matches and any doubts regarding system design with the consultant and get all doubts clarified.
4. Before commencement of tubing work, proper shop drawings must be generated by the contractor, and same should be got approved from the consultant. The drawings must clearly indicate schematic flow diagrams for various circuits, tube sizes, description and quantities for refrigerant joints, indoor and outdoor unit models and room / block /floor names, tube routes, levels for horizontal tubes, details regarding insulation type and thickness and surface treatment for insulation, typical and critical sections and any other details to explain the entire tubing layout to the installer.
5. Tube sizing and routing must be carried out taking into consideration various site constraints and system manufacturer's recommendations.
6. Care should be taken to design tubing as per the manufacturer's recommendation for maximum tubing total length, maximum tubing length after first tapping, vertical height difference between outdoor and indoor units etc. and necessary corrections should be carried out in outdoor unit capacity if required.

**A - 3 : REFRIGERANT TUBING INSTALLATION WORK:**

1. The installer must first study the shop drawings in detail with respect to the site condition and point out any fouling / alternatives to the agency prepare shop drawing and necessary revisions must be carried out in the drawings, to be approved by consultant.
  2. The layout must be marked on the true ceiling and any civil openings required should be marked and got done from concerned agency.
  3. Supports as described in BOQ / specifications should be installed, leaving adjustable free length for supports.
  4. Before installation, the tubes and tubes must not be removed from their original packing. Proper storage of tubing is a must to maintain the temper of the tubes / tubes. Any abrasion on ends / surface, or any in grace of dirt / dust must be avoided. Proper Polyethylene sheets should be used for covering the tubes and tubes, while wooden pellets and soft expanded Polyethylene / rubber sheets should be used as floor supports.
  5. Necessary loops / slopes must be followed as recommended by system manufacturer.
  6. Tubes must be cut to required sizes using cutting tools recommended by system manufacturer.
  7. Using proper quality of brazing set, Oxygen / Acetylene and Copper brazing rods having minimum 2% Silver content.
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8. During brazing, Nitrogen must be filled in the Copper tubing at a mild positive pressure and must be kept bleeding out continuously, to prevent any oxidation of parent material.
9. After tubing work, each circuit should be pressure tested as per the system manufacturer's recommendation and as per the procedure described in the following paragraphs. A certificate mentioning the test pressure, time of first and final pressure readings, make, model, serial number, range and least count of the gauge used, along with a copy of valid calibration certificate must be maintained, duly signed by the inspecting technician, and client /PMC representative.
10. After pressure testing, insulation must be completed as per the material, make and thickness mentioned in the approved shop drawing. The joints of insulation must be sealed by minimum 50 mm wide Aluminium adhesive tape. Care should be taken to avoid any air gaps between tube / tube and insulation sleeves, and between two insulation sleeve joints.
11. Proper tagging must be carried out to trace the tubing to respective indoor and outdoor circuits.
12. The tubes exposed to sunlight must be covered / cladded / treated to prevent damage from UV radiation and bird pecks / tampering, as mentioned in the BOQ. The cladding should be made out of 26 G Aluminium sheet or G.S.S. sheet. While cladding, care should be taken to avoid penetrating the insulation by screws. Short screws Of metallic straps should be used for securing cladding sheets. Instead of cladding, glass cloth, with two coats of protective resin should be used.
13. While charging refrigerant, manufacturer's recommendations must be strictly followed, and charging must be carried out using proper charging hose, gauge manifold with calibrated gauges and electronic weigh scale. Further leak check using a gas leak detector should be carried out. Charging must be carried out after proper evacuation of the tubing. The quantity of refrigerant to be charged should be calculated by totalizing the liquid tube volume as per the manufacturer's recommendation.

**A - 4 : RECOMMENDATIONS FOR PRESSURE TESTING:**

Refrigerant tubes carry refrigerant at pressures different from atmospheric pressure. When pressure inside tubes is more than atmospheric pressure, refrigerant may escape to the atmosphere, causing commercial loss due to loss of refrigerant, inefficient system performance or even system breakdown and contamination of surroundings. When pressure inside the tubes is less than atmospheric pressure, such as in case of suction tubes of some low temperature refrigeration machines, or during pump-down cycle of normal air-conditioning systems, leakages in tubes leads to ingress of air and moisture, causing severe system damage. Therefore, it is a must that the refrigerant tubing is thoroughly tested for leakages. Pressure testing for any tubing must be carried out at a pressure higher than the maximum operating pressure within the system. It is recommended that the pressure 48 Signature of Contractor

recommended by manufacturer be followed very strictly. Testing at lower pressures may lead to non-detection of some small leakages, while testing at higher pressures may lead to damage to some factory manufactured components within the system. Generally, for R-410 systems a pressure of around 650psig is used. Nitrogen is the most common gas used for carrying out pressure testing. It has numerous advantages, some of which are listed below:

1. Nitrogen is easily available as a commercial gas packed in easy to handle cylinders.
2. Nitrogen, being the most abundant component of the atmosphere, is safe for leaking out without contaminating the atmosphere.
3. Nitrogen is less costly as compared with other gases.
4. Nitrogen is safe for handling and testing.
5. Nitrogen does not readily react with system components Pressure gauge/s used for testing must be calibrated and a calibration certificate with traceability to a Government(National) Physical Laboratory must be documented. The gauge should be capable of measuring pressure at least 10% above the reading to be recorded.

**A - 5 : PROCEDURE FOR CARRYING OUT PRESSURE TEST**

- 1) Ensure that the tubing to be tested is properly secured/supported and the openings have been sealed off as per manufacturer's recommendation.
- 2) Install pressure gauge/s at strategic location/s where it shall not be tampered with, at the same time, should be easily visible.
- 3) Install a valve and connecting tubing so that the open end of the tube reaches the cylinder outlet without moving the cylinder.
- 4) Connect the tube to the cylinder and after ensuring proper connection, crack open the cylinder valve, keeping an eye on the pressure gauge. Let the pressure rise to around 10 psig.
- 5) Check for proper sealing of all flanged / flare nut joints or valves/ valve glands looking for noise of escaping Nitrogen and seal same.
- 6) Open the cylinder valve again and raise the pressure to 200 psig.
- 7) Check the tube line for major leakages at brazed joints, elbows, valve glands, equipment end connections and tube seams with the help of soap water. Make up the leaks by tightening nuts. If the leaks are in brazed joints, flush out Nitrogen and carry out necessary re-brazing.
- 8) Open the cylinder valve again and increase the pressure to 150 psig less than the final test pressure. Repeat leak check as above.

9) Open the cylinder valve again and slowly raise the pressure to the manufacturer recommended pressure. Carry out a thorough leak check.

10) Record the pressure and time. Let the pressure stand for 24 hours without tampering. Check the pressure again after 24 hours. If pressure has dropped, the tubing should be checked very thoroughly for minor leakages. It is important to follow this 24 hours period as it gives enough time to detect minute leakages, and it removes the doubt created by thermal expansion of Nitrogen ( as after exact 24 hours, ambient conditions are generally same).

11) In case of tubing extending to lengths more than 30 m and / or having more than 20 site fabricated joints, the pressure should be recorded after 24 hours as well as after 48 hours, so that all leakages are detected and made up.

12) After detecting and making up any leak, the pressure testing must be carried out once again from beginning.

**A - 6 : DOCUMENTATION RECOMMENDED FOR ENSURING PROPER QUALITY ASSURANCE:**

1. Manufacturer's certificate with every Delivery Challan declaring composition of parent material
2. Signed and approved Shop drawings approved by Architect, prior to start of work
3. Pressure test report signed by Architect/ Client / Equipment manufacturer / PMC / Consultant.
4. False Ceiling closure check list duly signed by Architect / Client / Equipment manufacturer/ PMC /Consultant.

**GENERAL:**

**ACR GRADE COPPER TUBES AND FITTINGS : SIZES AND SPECIFICATIONS**

Tube material Specification :

( CFC- free refrigerant compatible tubes produced using Total loss lubricants )

1. De-oxidized High Phosphorized copper (DHP grade) raw material, with Chemical Composition of Copper = 99.9 % ; Phosphorus = 0.015 to 0.040 %

2. RoHS Compliant

3. 360 degree concentric Wall thickness along the entire length of the tubes 50

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4. Half hard drawn copper tubes should confirm to ASTM B75/ASTM280 ( C12200 ) / JIS H:3300( C1220 ) / BS2871 part 3 ( C106 ). Use Half Hard Temper Type for tube sizes above 19.1 mm.
5. Soft copper tubes, bright annealed (mirror finish) should confirm to ASTM B68 / JIS H:3300
6. Super clean quality with low residual content below the permissible levels of 0.038 g/m<sup>2</sup> for compatibility with use of CFC-free refrigerant.
7. 100 % Eddy Current Tested Tubes are to be used
8. Proper packaging, Storage and Traceability of the tubes.

Copper tube and Fittings Sizes and Insulation Specifications for CFC-free Refrigerant. S. No.	OUTER DIAMETER IN INCH & (MM)	WALL THICKNESS IN GAUGE & (MM)	LENGTH IN FEET & (MTRS.)	TEMPER	WEIGHT PER METER (kg.)	SOCKET AND ELBOW THICKNESS IN SWG & (MM)	RUBBER INSULATION THICKNESS
1.	1/4" (6.4 mm)	21 ( 0.8 mm)	50' (15.24)	Soft	0.1265	18 (1.2mm)	15mm
2.	3/8" (9.5 mm)	21 ( 0.8 mm)	50' (15.24)	Soft	0.199	18 (1.2mm)	15mm
3.	1/2" (12.7 mm)	21 ( 0.8 mm)	50' (15.24)	Soft	0.2714	18 (1.2mm)	15mm
4.	5/8" (15.9 mm)	19 ( 0.99 mm)	50' (15.24)	Soft	0.4241	18 (1.2mm)	15mm
5.	3/4" (19.1 mm)	19 ( 0.99 mm)	50' (15.24)	Soft	0.5147	18 (1.2mm)	20mm
6.	1/4" (6.4 mm)	21 ( 0.8 mm)	12' (3.658)	Half Hard	0.1265	18 (1.2mm)	15mm
7.	3/8" (9.5 mm)	21 ( 0.8 mm)	12' (3.658)	Half Hard	0.199	18 (1.2mm)	15mm
8.	1/2" (12.7 mm)	21 (0.8 mm)	12' (3.658)	Half Hard	0.2714	18 (1.2mm)	15mm
9.	5/8" (15.9 mm)	19 (0.99 mm)	12' (3.658)	Half Hard	0.4241	18 (1.2mm)	15mm
10.	3/4"	21 (0.8)	12'	Half	0.4164	18	20mm

	(19.1 mm)	mm)	(3.658)	Hard		(1.2mm)	
11.	7/8" (22.2 mm)	21 (0.8 mm)	12' (3.658)	Half Hard	0.489	18 (1.2mm)	20mm
12.	1.0" (25.4 mm)	20 ( 0.88 mm)	12' (3.658)	Half Hard	0.6054	18 (1.2mm)	20mm
13.	1 1/8" (28.6 mm)	19 (0.99 mm)	12' (3.658)	Half Hard	0.7865	18 (1.2mm)	20mm
14.	1 1/4" (31.8 mm)	18.5 (1.1 mm)	12' (3.658)	Half Hard	0.843	16 (1.6mm)	20mm
15.	1 3/8" (34.9 mm)	18 (1.21 mm)	12' (3.658)	Half Hard	1.155	16 (1.6mm)	20mm
16.	1 1/2" (38.1 mm)	17.5 (1.3 mm)	12' (3.658)	Half Hard	1.340	16 (1.6mm)	20mm
17.	1 5/8" (41.3 mm)	17 (1.43 mm)	12' (3.658)	Half Hard	1.594	16 (1.6mm)	20mm

Use Soft tube only for Indoor Unit Connection

**10. INSULATION TO REFRIGERANT PIPING:**

FR nitrile rubber / cross linked closed cell polyethylene tube insulation of 13mm upto 1" dia pipes and 19mm thick for 1" and above shall be used for copper piping both for suction line and liquid line. All joints shall be sealed with self-adhesive tape or with heat.

**11. COMMUNICATION CABLE AND CONTROL CABLING:**

Communication cable and control cabling: Communication cable and control cabling should be of non-polar shielded 2 core cable shall be laid in 20 mm dia PVC conduits of required size. PVC conduit should be clamped neatly maintaining a distance from power cables, Cable terminations and dressing shall be done properly and neatly.

**12. DRAIN PIPING:**

PVC drain piping shall be used for the drain piping. Proper care shall be taken to lay the drain piping with sufficient slope and should be clamped or supported at 1.5 m interval. All drain pipe joints shall be done with adhesive. Drain piping should be tested for leaks before commissioning. After testing for leaks, drain pipe shall be insulated with 9 mm thick nitrile rubber tube insulation. Insulation shall be finished with self-adhesive black cotton tape. 52 Signature of Contractor

LIST OF APPROVED MANUFACTURERS / NATURAL SOURCES OF MATERIALS TO BE USED IN

THE AC WORKS SUBJECT TO THE APPROVAL OF SAMPLES BY THE CONSULTANT. S.No.	Material Name.	Brand / Manufacturer / Recommended Make.
1.	CASSETTE AND HI WALL UNITS.	Carrier, Voltas, Blue Star, and Hitachi
2.	GI Sheets	TATA / HSL / SAIL / NIPPON DENRO or approved equivalent.
3.	Fire Damper	Caryaire / AirMaster / Air Breeze / Ravistar or approved equivalent.
4.	Vibration Isolators / FlexibleConnectors	Resistoflex / Dunlop or approved equivalent.
5.	INSULATION / Fibre glass.	UP Twiga / Kimmco / Owens corning or approved equivalent.
6.	Power Cables	CCI / ICC / Gloster / UCL or approved equivalent.
7.	Cables	Finolex / RR cables /polycab/finecab
8.	Aluminum Grilles Diffusers /Linear Grilles	Caryaire / Air Master / Air Breeze/SRIFABS or approved equivalent.
9.	Filters	Klenzaid / Airtech / Aerosol / Anfilco or approved equivalent.
10.	Cooling Coils / Heating Coils	Bluestar / Rohini / Ethos / Carrier / Jaypee / Coil Company / ZECO or approved equivalent.
11.	Nitrile rubber	Armaflex / k flex

**NOTE :** The contractor shall use only above mentioned material or equivalent make to be approved by the Consultant. All other materials shall confirm to the specifications laid down. The tenderer shall take this into account while tendering rates / prices. However the samples of every material including all fixing accessories shall be got approved by BANK / Consultant before Execution.

**DECLARATION**

I/We have inspected the site of works and have made me / us fully acquainted with the local conditions in and around the sites of works. I/We hereby declare that I/We have gone through the conditions laid down in the Notice Inviting Tender, Conditions of Contract, Technical Specifications and understood the same and on the basis of the same I/We quoted our rates in the Schedule of Quantities attached with the tender documents.

I/We shall also uniformly maintain such progress as may be directed by the Employer / Architect to ensure completion of same within the target date as mentioned in the tender document.

**Witness:**

\_\_\_\_\_

Signature of Tender

Address\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_

**SUMMARY  
FOR UNION BANK OF INDIA  
MALLAPUR BRANCH  
KARIMNAGAR**

AIR CONDITIONING WORKS  
BRANCH AND ATM

RS.....

TOTAL:

RS.....

**TAX GST:** Tenderer shall quote rates exclusive of GST, which will be paid to the Contractor as applicable along with their bills.

**NAME OF THE CONTRACTOR  
& ADDRESS:-**

DATE: -

SIGNATURE OF THE CONTRACTOR

DATE: -

SIGNATURE OF THE CONSULTANT

DATE: -

AUTHORISED SIGNATURE OF BANK

SIGNATURE OF CONTRACTOR



# SCHEDULE OF QUANTITIES FOR AIR CONDITIONING WORKS

## UNION BANK OF INDIA - MALLAPUR BRANCH - KARIMNAGAR

	AIR CONDITIONING MAKE - VOLTAS / BLUE STAR /CARRIER INVERTER MODEL				
SL. NO	DESCRIPTION	QTY	UNIT	RATE (RS.)	AMOUNT (RS.)
	BANKING LOBBY 2.0TR X 3 NOS				
	BM 1.5TR X 1 NOS				
	ATM 1.0TR X 2 NOS				
1	AC HIGHSIDE WORKS				
	Supply, installation ,testing and comissioning of the following capacity BEE Lebeled 3 star rated Hi-Wall multisplit/Single units with one no.indoor unit and one no.outdoor unit with rotary compressors,copper piping,Dx Cooling coil,condenser fans,vibration pads,condenser				
1.1	<b>2.0 ton</b> high wall split unit with inverter model BEE Lebeled 3 star rated with codless remote for Banking area ,Machine total including installetion Kit upto 3 mtrs copper piping. Excluding taxes.	3	Set		
1.2	<b>1.5 ton</b> high wall split unit with inverter model BEE Lebeled 3 star rated with codless remote for Banking area ,Machine total including installetion Kit upto 3 mtrs copper piping. Excluding Taxes.	1	Set		
1.3	<b>1.0 ton</b> high wall split unit with inverter model BEE Lebeled 3 star rated with codless remote for Banking area ,Machine total including installetion Kit upto 3 mtrs copper piping. Excluding Taxes.	2	Set		

2	<b>AC LOWSIDE WORKS</b>				
2.1	Installatton : Erection, testing and commissioning of High wall mounted Split Air Conditioner 1.5/2tr complete unit with associated civil work (chipping and plastering) for run copper and drain pipe.	6	Set		
2.2	Supply , erection , testing and commissioning of MS structure for condensing support for wall mounted Split Air Conditioner and stabilizer.	6	Set		
2.3	Provide Additional Copper Piping as per standard specification of 2tr and 1.5 tr cassatte /Wall mounted split units.	15	Mtr		
2.4	Provide Additional Drain Piping as per standard specification for Wall mounted split units.	15	Mtr		
	<b>TOTAL AIR-CONDITIONING WORKS</b>				

