Tender ID	SBI/GAO-2/20250503
Date	20/05/2025

STATE BANK OF INDIA

INVITES ONLINE E-TENDERS

FOR

PROPOSED AIRCONDITIONING WORK OF

MEHTAPURA BRANCH, HIMMATNAGAR

GROUND FLOOR AT HIMMATNAGAR.

FROM

THE AIR CONDITIONING CONTRACTORS EMPANELED FOR AHMEDABAD CIRCLE

AS PER THE LIST ENCLOSED

THE LAST DATE OF SUBMISSION OF ONLINE TECHNICAL BID AND ONLINE SEALED PRICE BID: 03-06-25 by 3:00 PM

NO PHYSICAL SUBMISSION OF DOCUMENTS REQUIRED EXCEPT PROCESS COMPLIANCE FORM.

PART – A: TECHNICAL BID

TENDER SUBMITTED BY:

NAME : _____

ADDRESS : _____

DATE : _____

Architect:
MAHESH DESAI
10-B, 11th Floor, Sumeru,
Near Parimal Under pass & Suvidha shopping centre,
Paldi, Ahmedabad 380 007
M:9825490658 maheshdesai47@gmail.com

NOTICE INVITING TENDERS

SBI invites E-tender through its Architect **M/s. MAHESH DESAI** "**Online e-tenders in two bid system I. e. online technical bid and online sealed price bids"** from the SBI Empaneled Air-conditioning contractors of Ahmedabad Circle for **Air conditioning works** of **SBI, MEHTAPURA BRANCH, HIMMATNAGAR. Please note that there will be no reverse auction.**

The details of tender are as under:

S. No.	Description	
1.	Name of work	**AIR CONDITIONING WORK OF SBI AT MEHTAPURA BRANCH, HIMMATNAGAR.**
2.	Nature of Work	**AIR CONDITIONING - VACANT PREMISES.**
3.	Time allowed for completion	**30 (THIRTY)** Days from date of acceptance of work order or handing over of site whichever is later.
4.	Tender Fees	**NA**
5.	Earnest Money Deposit	**Rs. 4,900.00** by means of Demand Draft / Pay Order (Valid for a period of 90 days from the last date of submission of the tender) from any scheduled Nationalized Bank drawn in favour of **State Bank of India, payable at GANDHINAGAR. [Those registered with MSMEUDYAM need not submitted EMD. Instead DD, Valid MSME UDHYAM certificate shall be uploaded]**
6.	Initial Security Deposit	2% INCLUDING EMD
7.	Total Security deposit	5.0% of the final bill amount
8.	Start and end date for downloading of tender documents form Bank's website	**21-05-2025 to 03-06-2025.** at www.sbi.co.inunder<Link><SBI in the news >procurement news.
9.	Last date & time for submission of on-line technical bid, EMD and online Sealed Price Bid	**03-06-2025 by 3:00 PM**
10.	Address at which EMD & Process compliance form has to be submitted.	The Assistant General Manager, Admin office,GAO-2, State Bank of India,4th floor , Sector 10B, Gandhinagar.
11	Date and time of opening of technical bid & Online sealed Price Bid at SBI address mentioned at Sr. No.10	**03-06-2025 at 3:30 PM**
12.	E-Tendering will be conducted by our approved e-tendering consultant	**M/s. Antares Systems Limited, Bangalore,** Contact No 91 80 40482000; 91-80-40482114 CELL :91 -9674758719, 9674758720
12.	Liquidated Damages	0.50% of contract amount per weeks subject to max. 5% of contract value or final bill value.
13.	Rates	**Rates quoted shall be inclusive of all existing & future (including variation) taxes, duties, levies, royalties, transportation, other incidental charges, WCT etc. PVA & PVA Clause shall not be applicable.**

		Note: GST will be paid Extra as per Applicable norms. **If any tenderer puts any condition/anything/any taxes extra over and above their quoted rates the tender shall be summarily rejected.**
14.	Defects liability period	12 Months from the date of Virtual Completion
15.	Validity of offer	90 days from the date of opening of Price-bid
16.	Value of Interim Certificate	**No Interim payment will be paid. [No advance on materials / plant / machinery or mobilization advance shall be paid under any circumstances]**
17.	**Insurance**	**The contractor shall obtain all necessary insurance policies as per the governing laws applicable at the centre & shall be required to produce the original policy of Insurance & receipt of the premium as applicable in the matter to the Architect/Bank.**
18.	**Water and Electricity**	If contractor is permitted to use SBI source of water & electricity, the SBI will recover @ 0.5% of contract amount from the final bill of contractor. **However further distribution & extension & light fixtures etc. with required MCB switches, switch boards, lamp, tube etc. shall be arranged by the contractor at their own cost within the accepted tender amount.** ***Bank will recover 0.5% of the final bill amount towards consumption of water & electricity.***
19	Tenders can be downloaded from the bank's website**www.sbi.co.in**(link)<SBI In the news<Procurement News>. It shall be responsibility of the contractor to timely submit the technical and financial bid. SBI, in no case shall be responsible for site issues/ delay in tender submission.	
20	The contractor shall read and understand each page of the tender document thereby ensuring the number and sequence of all pages.	
21	No conditions other than mentioned in the tender will be considered, and if given they will have to be withdrawn before submission of final quote; else their bid will be rejected.	
22	The SBI reserve their rights to accept or reject any or all the tenders, either in whole or in part without assigning any reason(s) for doing so and no claim / correspondence shall be entertained in this regard.	
23	Tenders received without EMD & Process compliance form shall be summarily rejected and such tenders shall not be allowed to participate in the Price bid process/ rejected/ not considered.	
24	In case the date of opening of tenders is declared as a holiday, the tenders will be opened on the next working day at the same time.	
25	SBI has the right to accept / reject any / all tenders without assigning any reasons and no correspondence shall be entertained in this regard.	
26	The Bank will place order as per its requirement and quoting minimum rate for any category does not provide any guarantee for receiving order for that item by the firm who quotes lowest rates.	
27	Bank reserves right to cancel any / all tender sat any stage without assigning any reasons.	
28	The Bank reserves the right to accept the tender in full or in part and the tenderer shall have no claim for revision of rates or other condition if his tender is accepted in parts.	
29	In case the date of online tendering is declared as a holiday, the online tendering will be conducted on the next working day at the same time.	

30	SBI reserves the right to accept or reject any or all the tenders without assigning any reason whatsoever. For any clarification regarding E-Tendering procedure, System requirements etc please contact **M/s. Antares Systems Limited, Bangalore**, whose address is mentioned in the NIT.
31	It is vendor's/supplier's responsibility to be well prepared and get ready with E-Tendering procedures & well equipped with all requirements. SBI will not take any responsibility of delay in submission due to EMD, slow internet connectivity, system failures etc.
32	~~Maximum 70% of bill amount (Certified by Architect) will be given as ad-hoc payment - if work in progress and quality of work is satisfactory on recommendation of SBI.~~

Yours Faithfully,

For and on behalf of SBI)

The Assistant General Manager,
Admin office, GAO-2,
State Bank of India, 4th floor, Sector 10B,
Gandhinagar.

LIST OF EMPANELLED AIR – CONDITIONER CONTRACTOR UPTO RS. 5.0 LAKH

SR. NO.	NAMEOF CONTRACTOR & ADDRESS	CONTACT NOS. & EMAIL ID
1.	Patel Electrical, 1/A, AStha Complex, Sanskar Mandal Chowk, Bhavnagar - 364001	9374754747 / 9825088095 Patelelectricals55@gmail.com
2.	Power Control 158, Sursarthi Complex, B/.h. Rudra Complex, Ambawadi, Ahmedabad - 6	9327030790 infor@powercontrol.com
3.	Cool Air Enterprise, Opp/ 13 Ramnathpara, Garbi Chowk, Rjkot - 360001	9426165786 Coolair52@gmail.com

LIST OF EMPANELLED AIR – CONDITIONER CONTRACTOR UPTO RS. 10.0 LAKH

SR. NO.	NAMEOF CONTRACTOR & ADDRESS	CONTACT NOS. & EMAIL ID
1	Prince Enterprise, 60 & 156, Maruti Plaza, Nr. Vijay Park, BRTS, Krishnagar, Ahmedabad - 382345	(M) 9979861449 Princeenterprise18@gmail.com
2.	Relaax Air, 9, Premier Shopping Center, Opp. Syndicate Bank, Nr. Mizapur Court, Mirazapur Road, Ahmedabad -01	9824216799, Relaxair_9824216799@yahoo.in
3.	Shaina Cooling Systems, 1759, Nr.. Shah E AlamRestarurant, Gayakwad Haveli Road, Raikhad, Ahmedabad - 380001	9898140380 Shainacs2007@hotmail.com
4.	Swastik Engineers, 91 Ajanta Commercial Centrer, Nr. Income tax Circle, Income tax, Ahmedabad 380006	9724800027 swastikhvac@gmail.com
5.	Maimoon Cooling Agent &Electrionics Appliances, 2 / 3857, Relax Aparftment, Healdiya Sheri, Nr. Mahaveer Hospital, Sangrampura, Surat	9824602152 Maimoonsales52@gmail.com
6.	S M Enterprise, 23, Central Government Housing Society, New Sama Road, Vadodara	8401497038, 9879562994 Smenterprise1014@gmail.com
7.	Shree Maruti Air Service, SB 42, Paradise Complex, Sayajigunj, Vadodara - 390020	9998486570 Shreemarutiacservice2014@gmail.com
8.	MD Aircon, A 116, Ashwamegh Complex, Opp. SayajiVihar Club, Rajmahal Road, Vadodara - 3900001	9825592980 mdaircon@gmail.com
9.	Mahadev Electric, 101, Shanti Complex Kotak Street Sanganya Chowk, Rajkot - 1	9824509312 Hirenkanabar54@yahoo.com
10.	Real Enterprise, 104, Panchshit Plaza, Kotechanagar Main Road, Nr. Kotecha School, Opp. Amin Marg, Rajkot - 360005	9825189029 / 9825386262 Realenterprise97@gmail.com
11.	Shah Associate Opp. LaxmiBhuvan, New	9825228305

	Station Road, BhujDist Kutch 370001	Shahassociate1@gmail.com

LIST OF EMPANELLED AIR – CONDITIONER CONTRACTOR UPTO RS. 25.0 LAKH

SR. NO.	NAMEOF CONTRACTOR & ADDRESS	CONTACT NOS. & EMAIL ID
1.	Pronify Trunkey Solutions, 23E, Laxmi Industrial Estate, Ne Link Ropad, Andheri (west) Mumbai - 400053	9833889913 proinfyturnkeysolutions@gmail.com
2.	CanceptMarketiing Payal Park Society, Near TVS Motors, Opp. Central Excise Building, B/.h. Subharnpura Garden, Vadodara 390023	9825041848 / 9909031848 info@concept.net.in
3.	HCP Enterprise A/B, SomeshwarTenament, Opp, NishanVidyalay, Arjun Ashram Road, Ranip Ahmedabad - 382480	8849696150 hcpenterprise@gmail.com
4.	Sharda Refrigeration 35, Surya Darshan Complex, Rubber Factory Circle, Bhavnagar	9426261853 shardarefrigeration@haoo.co.in

LIST OF EMPANELLED AIR – CONDITIONER CONTRACTOR UPTO RS. 50.0 LAKH

SR.NO.	NAMEOF CONTRACTOR & ADDRESS	CONTACT NOS. & EMAIL ID
1	System Designing, 102 Aggam Complex, Nr. Telephone Ecchange, Vasna, Ahmedabad	9825024651 Sdesign_trs@yahoo.com

LIST OF EMPANELLED AIR – CONDITIONER CONTRACTOR UPTO RS. 100.0 LAKH

SR.NO.	NAMEOF CONTRACTOR & ADDRESS	CONTACT NOS. & EMAIL ID
1	Parnam HVAC Engineering Pvt. Ltd. A405/406, Neelkanth Palace, 4th. Floor, Nr. Seema Hall, 100 Ft Anandnagar Road, Satellite, Ahmedabad 380015	9979866401 pranamhvac@gmail.com
2.	Chill Air system 1 & 2 Induchacha House, Chhani Road, Jakat Naka Baroda - 390002	9825603471 / 9825083471 chillairsystems@gmail.com

STATE BANK OF INDIA

FORM TENDER

To,
The Assistant General Manager,
Admin office, GAO-2,
State Bank of India, 4th floor, Sector 10B,
Gandhinagar.

Dear Sir,
Having examined the drawings, specification, design and schedule of quantities relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the tender, I/We hereby offer to execute the works specified in the said memorandum at the rates mentioned in the attached Schedule of Quantities and in accordance in all respects with the specifications, design, drawings and instructions in writing referred to in conditions of tender, the Articles of Agreement, Special Conditions, Schedule of Quantities and Conditions of Contract and with such materials as are provided for by, and in all other respects in accordance with such conditions so far as they may be applicable.

MEMORANDUM

Description of work	**Proposed Air conditioning works at SBI, MEHTAPURA BRANCH, HIMMATNAGAR.**
Earnest Money	The tenderer shall furnish EMD of Rs. **4,900/-.** in the form of Demand draft or bankers cheque drawn in favour of State Bank of India **payable at Gandhinagar.** on any Scheduled Bank. No tender shall be considered unless the EMD is so deposited in the required form. No interest shall be paid on this EMD. **[Those registered with MSMEUDYAM need not submitted EMD. Instead DD, Valid MSME UDHYAM certificate shall be uploaded]**,
Percentage, if any, to be deducted from Bills and total amount to be retained	~~10% from Running Bills, subject to maximum Total 3% of contract amount or actual Final Bill value.~~
Time allowed for completion of the Works from 3 dayS after the date of written order or date of handing over of the site (whichever is later) to commence the work	**30** days

Should I / We fail to execute the Contract when called upon to do so I/ We do hereby agree that suitable action shall be initiated against us by SBI. This may also include debarring of my empanelment for an year or so.

1) Our Bankers are: i) ii)

The names of partners of our firm are: i) ii)

Name of the partner of the firm Authorized to sign

Or

(Name of person having Power of Attorney to sign the Contract.)

(Certified true copy of the Power of Attorney should be attached)

Yours faithfully,

Signature of Contractors.

Signature and addresses of Witnesses i) ii)

SAMPLE BUISNESS RULE DOCUMENT

ONLINE E-TENDERING FOR PROPOSED AIR CONDITIONING WORKS AT SBI, MEHTAPURA BRANCH, HIMMATNAGAR.

Business rules for E-tendering:

1. Only AHMEDABAD CIRCLE **empanelled AIR CONDITIONING contractors** under appropriate category who are invited by the project Architect/SBI shall only be eligible to participate.
2. SBI will engage the services of an E-tendering service provider who will provide necessary training and assistance before commencement of online bidding on Internet.
3. In case of e-tendering, SBI will inform the vendor in writing, the details of service provider to enable them to contact and get trained.
4. Business rules like event date, closing and opening time etc. also will be communicated through service provider for compliance.
5. Contractors have to send by email, the compliance form in the prescribed format (provided by service provider), before start of E-tendering. Without this the vendor will not be eligible to participate in the event.
6. The Contractors will be required to submit the various documents in sealed Envelope to the office of SBI at the address mentioned hereinbefore by the stipulated date i.e. (2) Demand Draft of specified amount of EMD **.** Contractors not submitting any one or more documents shall not be eligible to participate in the on-line price bidding.
7. E-tendering will be conducted on schedule date &time.

8. **The e-tendering will be treated as closed only when the bidding process gets closed in all respects for the item listed in the tender.**

(B) Terms & conditions of E-tendering:

SBI shall finalize the Tender through e-tendering mode for which **M/s. Antares Systems Limited, Bangalore,** has been engaged by SBI an authorized service provider. Please go through the guidelines given below and submit your acceptance to the same along with your Commercial Bid.

E-tendering shall be conducted by SBI through **M/s. Antares Systems Limited, Bangalore,** on pre-specified date. While the Contractors shall be quoting from their own offices/ place of their choice, Internet connectivity and other paraphernalia requirements shall have to be ensured by Contractors themselves. In the event of failure of their Internet connectivity, (due to any reason whatsoever it may be) it is the bidders' responsibility

In order to ward-off such contingent situation bidders are requested to make all the necessary arrangements/alternatives such as back–up power supply whatever required so that they are able to circumvent such situation and still be able to participate in the E-tendering successfully. Failure of power at the premises of Contractors during the E-tendering cannot be the cause for not participating in the E-tendering. On account of this the time for the E-tendering cannot be extended and SBI is not responsible for such eventualities.

M/s. Antares Systems Limited, Bangalore, shall arrange to train you nominated person(s), without any cost to you. They shall also explain you all the Rules related to the E-tendering. You are required to give your compliance on it before start of bid process.

1. BIDDING CURRENCY AND UNIT OF MEASUREMENT: Bidding will be conducted in Indian

currency & Unit of Measurement will be displayed in Online E-tendering.

2. BID PRICE: The Bidder has to quote the rate as per the Tender Document provided by SBI their appointed Architects.

3. VALIDITY OF BIDS: The Bid price shall be firm for a period specified in the tender document and shall not be subjected to any change whatsoever.
4. Procedure of E-tendering:

i. <u>Online E-tendering:</u>

(a) The hard copy of the Technical as well as Price Bid is available on the Bank's website during the period specified in the NIT.

(b) Online e-tendering is open to the empaneled bidders who receive NIT from the Architect and qualified for participating in the price bidding as provisions mentioned hereinabove through SBI approved Service Provider.

(c) The Price-Bid shall be made available online by the Service Provider wherein the contractors will be required to fill-in rates

(d) The Contractors are advised not to wait till the last minute to submit their online item-wise quote in the price bid to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.

(e) It is mandatory to all the bidders participating in the price bid to quote their rates for each and every item.

(f) In case, contractor fails to quote their rates for any one or more tender items, their tender shall be treated as ***"Incomplete Tender***" and shall be liable for rejection.

LOG IN NAME & PASSWORD: Each Bidder is assigned a Unique User Name & Password by **M/s. Antares Systems Limited, Bangalore,** . The Bidders are requested to change the Password after the receipt of initial Password from **M/s. Antares Systems Limited, Bangalore,** . All bids made from the Login ID given to the bidder will be deemed to have been made by the bidder.

5. **BIDS PLACED BY BIDDER: Bids** will be taken as an offer to execute the work as specified. Bids once made, cannot be cancelled / withdrawn and the Bidder shall be bound to execute the work at the quoted bid price. In case the L1 Bidder backs out or fail to complete the work **as per the rates quoted,** SBI shall have the liberty to take action as deemed necessary including de-paneling such contractors and forfeiting their EMD and imposing heavy penalty to contractor to recover the losses occurred to the Bank.

6. At the end of the E-tendering, SBI will decide upon the successful bidder. SBI decision on award of Contract shall be final and binding on all the Bidders.

7. SBI shall be at liberty to cancel the E-tendering process/tender at anytime, before ordering, without assigning any reason.
8. SBI shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause.

9. Other terms and conditions shall be as per your techno-commercial offers and other correspondences till date.

10. OTHER TERMS &CONDITIONS:

- The Bidder shall not involve himself or any of his representatives in Price manipulation of any kind directly or indirectly by communicating with other suppliers/ bidders.

- The Bidder shall not divulge either his Bids or any other exclusive details of SBI to any other party.

- SBI decision on award of Contract shall be final and binding on all the Bidders.

- SBI reserve their rights to extend, reschedule or cancel any E-tendering within its sole discretion.

- SBI or its authorized service provider **M/s. Antares Systems Limited, Bangalore,** shall not have any liability to Bidders for any interruption or delay in access to the site irrespective of the cause.

  SBI or its authorized service provider **M/s. Antares Systems Limited, Bangalore,** is not responsible for any damages, including damages that result from, but are not limited to negligence.

  SBI or its authorized service **M/s. Antares Systems Limited, Bangalore,** will not be held responsible for consequential damages, including but not limited to systems problems, inability to use the system, loss of electronic information etc.

  N.B.

  -All the Bidders are required to submit the Process Compliance Statement (Annexure-II) duly signed to **M/s. Antares Systems Limited, Bangalore,**

- **All the bidders are requested to ensure that they have a valid digital signature certificate well in advance to participate in the online event.**

PROCESS COMPLIANCE STATEMENT (ANNEXURE II)

(The bidders are required to print this on their company's letter head and sign, stamp before e-mailing)

To,
M/s. Antares Systems Limited, Bangalore,
#24,3rd Stage, 4th Block, Basveshwaranagar, Bangalore- 560079, India

E-mail :kushal.b@anataressystems.com
Contact No.- 91 - 9674758719, 9674758720

AGREEMENT TO THE PROCESS RELATED TERMS AND CONDITIONS FOR THE ONLINE E-TENDERING FOR PROPOSED AIR CONDITIONING WORKS AT SBI, MEHTAPURA BRANCH, HIMMATNAGAR.

Dear Sir,

This has reference to the Terms & Conditions for the E-tendering mentioned in the Tender document
This letter is to confirm that:

1) The undersigned is authorized representative of the company.
2) We have studied the Commercial Terms and the Business rules governing the E-tendering as mentioned in RFP of SBI as well as this document and confirm our agreement to them.
3) We also confirm that we have taken the training on the E-tendering tool and have understood the functionality of the same thoroughly.
4) We confirm that SBI and M **M/s. Antares Systems Limited, Bangalore** shall not be liable & responsible in any manner whatsoever for my/our failure to access & bid on the e-E-tendering platform due to loss of internet connectivity, electricity failure, virus attack, problems with the PC, any other unforeseen circumstances etc. before or during the E-tendering event.
5) We confirm that we have a valid digital signature certificate issued by a valid Certifying Authority.
6) We, hereby confirm that we will honor the Bids placed by us during the E-tendering process.

With regards, Date:

Signature with company seal Name:

Company / Organization:

Designation within Company / Organization: Address of Company / Organization:

Scan it and send to this Document on ----------

SECTION – 1

INSTRUCTIONS TO THE TENDERERS

1.0 Scope of Work

Sealed Tenders are invited by M/s. Mahesh Desai for and behalf of State Bank of India for the work of **AIR CONDITIONING At SBI, MEHTAPURA BRANCH, HIMMATNAGAR.**

1.1 Site and Its Location

The proposed work is to be carried out at_ground floor at_**SBI, MEHTAPURA BRANCH, HIMMATNAGAR.**

2.0 Tender Documents

2.1 The work has to be carried out strictly according to the conditions stipulated in tender consisting the following documents and the most workman like manner,

- Instructions to tenderers
- General Conditions of Contract
- Special Conditions of Contract
- Additional Conditions for Electrical Installation
- Technical Specifications
- Drawings
- Priced Bid

2.2 The above documents shall be taken as complementary and mutually explanatory of one another but in case of ambiguities or discrepancies, shall take precedence in the order given below :

- Price Bid
- Technical Specifications
- Additional Conditions for Electrical Installation
- Special Conditions of Contract
- General Conditions of Contract
- Instructions to Tenderers

2.3 The tender documents are not transferable.

3.0 Site Visit

3.1 The tenderer must obtain himself on his own responsibility and his own expenses all information and data which may be required for the purpose of filling this tender document and enter into a contract for the satisfactory performance of the work. The Tenderer is requested satisfy himself regarding the availability of water, power, transport and communication facilities, the character quality and quantity of the materials, labour, the law & order situation, climatic conditions local authorities requirement, traffic regulations etc;

The tenderer will be fully responsible for considering the financial effect of any or all the factors while submitting his tender.

4.0 Earnest Money

4.1 The tenderers are requested to submit the Earnest Money of Rs.4,900/-.in the form of Demand Draft or Banker's Cheque in favour of State Bank of India drawn on any Bank in India.

4.2 EMD in any other form other than as specified above will not be accepted. Tender not accompanied by the EMD in accordance with clause 4.1 above shall be rejected.

4.3 No interest will be paid on the EMD.

4.4 EMD of unsuccessful tenderers will be refunded within 30 days of award of Contract.

4.5 EMD of successful tenderer will be retained as a part of security deposit.

5.0 Initial Security Deposit

The successful tenderer will have to submit a sum equivalent to 2% of contract value less EMD by means of D/D drawn in favour of State Bank of India within a period of 15 days of acceptance of tender.

6.0 Security Deposit

6.1 Total security deposit shall be 5% of contract value. Out of this 2% of contract value is in the form of initial security deposit which includes the EMD. Balance 3% shall be deducted from the running account bill of the work at the rate of 10% of the respective running account bill i.e. deduction from each running bill account will be 10% till total 3% of contract value is reached. 50% of the total security shall be paid to the contractors on the basis of architect's certifying the virtual completion. The balance 50% would be paid to the contractors after the defects liability period as specified in the contract.

6.2 No interest shall be paid to the amount retained by the Bank as Security Deposit.

6.3 Additional Security Deposit:- Additional Security deposit (ASD)/Additional performance Guarantee (APG) shall be

applicable if the bid price is below 10% of the estimated cost put to tender. The amount of such ASD/ APG shall be the difference between 90% of estimated cost put to tender and the quoted price. ASD in the format of DD / Banker's Cheque / Bank Guarantee shall be submitted within 15 days of intimation of award of work / work order, without which the contractor will not be allowed to start the work and failure of submission of ASD will result in forfeiture of EMD and cancellation of tender. For e.g, if a contractor is quoting 15% below the estimated cost put to tender (i.e. 85% of the estimate), then ASD of 5% of estimated cost is required to be obtained from the

contractor (90%-85%).

7.0 Signing of Contract Documents

The successful tenderer shall be bound to implement the contract by signing an agreement and conditions of contract attached herewith within 15 days from the receipt of intimation of acceptance of his tender by the Bank. However, the written acceptance of the tender by the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered into or not.

8.0 Completion Period: The time period allowed for completion of the project shall be **30** days / ~~months~~ from the date of commencement of work or 15 days from the date of issuance of work order, whichever is earlier.

9.0 Validity of Tender

Tenders shall remain valid and open for acceptance for a period of 3 (Three) months from the date of opening price bid. If the tenderer withdraws his/her offer during the validity period or makes modifications in his/her original offer which are not acceptance to the Bank without prejudice to any other right or remedy the Bank shall be at liberty to forfeit the EMD.

10.0 Liquidated Damages

The liquidated damages shall be 0.5% per week subject to a maximum of 5% of contractvalue.

11.0 Rates and Prices

11.1 In case of item rate tender

11.1.1 The tenderers shall quote their rates for individual items both in words and figures in case of discrepancy between the rates quoted in words and figures the unit rate quoted in words will prevail. If no rate is quoted for a particular item the contractor shall not be paid for that item when it is executed.

The amount of each item shall be calculated, and the requisite total is given. In case of discrepancy between the unit rate and the total amount calculated from multiplication of unit rate and the quantity the unit rate quoted will govern and the amount will be corrected.

11.1.2 The tenderers need not quote their rates for which no quantities have been given. In case the tenderers quote their rates for such items those rates will be ignored and will not be considered during execution.

11.1.3 The tenderers should not change the units as specified in the tender. If any unit is changed the tenders would be evaluated as per the original unit and the contractor would be paid accordingly.

The tenderer should not change or modify or delete the description of the item. If any discrepancy is observed he should immediately bring to the knowledge of the Architect/ Bank.

11.1.4 Each page of the BOQ shall be signed by the authorized person and cutting or overwriting shall be duly attested by him.

11.1.5 Each page shall be totaled and the grand total shall be given.

11.1.6 The rate quoted shall be firm and shall include all costs, allowances, taxes, VAT, levies, etc.

GENERAL & IMPORTANT NOTES

1 GENERAL NOTES:

~~(i) Unless otherwise~~ specified in these tender documents mode of measurements specifications etc. shall be as per relevant IS codes.

(ii) Source of materials / samples / brands / makes etc. shall be got approved from the Architects / Bank before using. In case of deviations, decision of the Bank shall be final and binding and shall not be open for arbitration.

(iii) The Architects have their specific role / duties / rights as defined in these tender documents. However, in the event of any dispute arising out of differences between the opinions of the Architects and also their role/ duties/rights, the Banks' decision shall be final & binding on the Architects and the Contractor and shall not be open to arbitration.

(vi) The Contractor will extend full co-operation, support and all required assistance to Architect / Bank for discharging their duties and responsibilities efficiently and effectively.

(vii) The contractor has to supply and adhere to the specific makes and specifications of all the items, which are mentioned in the separate list of approved makes. Any work found not as per the tender specifications and list of approved the contractor has to replace the same without any delay. The contractor is instructed of get approval of all the materials to be used on this site before starting the work. He should provide different sample of material for approval, before execution of work.

(viii) All quantities indicated in the tender are approximate & are likely to change. The contractor must take actual measurement at site and billing shall be done as per the actual measurement of the work done at site.

(ix) Work has to be got executed at site in coordination with various agencies working at site.

(x) The contractor is instructed to get the approval of the materials to be used on this site before starting the work. He shall provide different sample of materials for approval before execution of the work

(xi) All material has to be used in full size/length only. Joints should be avoided as far as possible.

(xii) Any item mentioned in the BOQ with "TO THE SHAPE" will have measurement of onsite executed to the shape area only.

(xiii) Making various levels & line out for total layout on site for the items in scope of the work shall be done by the contractor at his own cost.

(xiv) MTC (Manufacturer Test certificate) Where ever applicable shall be arranged & submitted by the contractor. Testing of wood for moisture, knot % etc. shall be carried out by the contractor at his own cost.

2. IMPORTANT NOTES:

(i) The contractor's qualified & authorized representative shall remain on site during the entire execution process for coordination with various agencies / Architect / Bank & execution of work.

(ii) If the assigned work is in running/working Branch, the contractor should have executed the site erection work in odd hours, Holidays and Sundays.

(iii) The contractor shall prepare all loose Electrical items at his workshop only & deliver the same to the site at appropriate time as instructed by the Architect/BMs/Bank Officials.

(iv) The site shall be cleaned on day-to-day basis & all debris shall be disposed away at the location beyond the limit as approved by the local authority.

(v) Hidden measurements: - It is contractor's responsibility to get the measurement checked immediately on completion of such items. This shall be done before finishing the same The Architect shall be provided with such details well in advance so that the other work is not held up due to last moment action.

(vi) Before starting the work at site, the contractor shall mark out the plan & levels of the false ceiling, partitions etc. in coordination with other agencies on site.

vii) The rates quoted shall be inclusive of all taxes, Duties, Octroi, Transportation, Delivery, Installation, Testing, Commissioning etc. complete at the site. No extra will be paid for any kind of taxes. However, the GST will be paid extra as applicable as per actual.

viii) The entire job shall be executed in total coordination with the other agencies working on the project & also with landlord, Branch Manager and Bank officials etc.

ix) Architect of the project shall be kept informed about the progress of the work at various stages.

x) The contractor shall arrange on his own for lighting & plug point with socket & electrical wiring, DB's etc. required during entire execution process. However, supply at point shall be provided by the bank / landlord

(xi) Any Hidden item MUST be photographed and need to be sent via e- mail or CD to Architect / Bank

xii) BILLING PROCESS:
The contractor/Architect should take care of the following while submitting the final Bill

The Final Bill Should Contain: -

a) Abstract in tender BOQ format only.

b) Schedules for detailed measurement sheet for all items (in detailed break up).

c) original insurance policies as per tender terms and conditions.

d) Completion certificate issued by the concerned Architect.

e) Inspection & completion certificates for all types of false ceiling.

f) Test report for Toughened Glass.

g) Copy of LOA etc.

h) All documents shall carry contractor's signature & seal with address. - All documents

shall be submitted in 1 + 1 copies.

i) The contractor shall also provide all measurement sheet in soft copy (in Excel format).

j) The contractor shall submit the purchase bill copy of major items used in the project.

k) That extension of time, if any, beyond scheduled date of completion has been granted by the Competent Authority.

l) original receipt of purchase of Corian /plywood/ Gypboard and other major materials used in the work from the original manufacturer/authorized dealers/distributors.

m) If any advances paid during the execution of the work.

n) Acceptances form the contractor that "Accepted as full and final settlement of all claims"

o) The total cost of work should be within the sanction amount, If not, revised sanction taken from the Competent Authority to be attached with the Final Bill

IMPORTANT: ALL DOCUMENTS SHALL BE SUBMITTED AT ONCE (NOT IN PIECEMEAL MANNER) ALONG WITH FULL&FINAL BILL &SHALL BE DULY SIGNED BY PUTTING COMPANY'S ADDRESS SEAL

GENERAL CONDITIONS OF CONTRACT

1.0 Definitions: -

"Contract means the documents forming the tender and the acceptance thereof and the formal agreement executed between SBI (client) and the contractor, together with the documents referred there in including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Architects / Bank and all these documents taken together shall be deemed to form one contract and shall be complementary to one another.

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

1.0.1 'SBI shall mean SBI having its Office at State Bank of India and includes the client's representatives, successors and assigns.

1.0.2 'Architects/ Consultants' shall mean **MAHESH DESAI**, Architects & Interior Designers, Ahmedabad.

1.0.3 'Site Engineer' shall mean an Engineer appointed by the SBI at site as their representative for day-to-day supervision of work and to give instructions to the contractors.

1.0.4 'The Contractor' shall mean the individual or firm or company whether incorporation, undertaking the works and shall include legal personal representative of individual or the composing the firm or company and the permitted assignees of individual or firms of company.

The expression 'works' or 'work' shall mean the permanent or temporary work description in the "Scope of work" and/or to be executed in accordance with the contract includes materials, apparatus, equipment, temporary supports, fittings and things of kinds to be provided, the obligations of the contractor hereunder and work to be done by the contractor under the contract.

1.0.5 'Engineer' shall mean the representative of the Architect/Consultant.

1.0.6 'Drawings' shall mean the drawings prepared by the Architects and issued by the Engineer and refer red to in the specifications and any modifications of such drawings as may be issued by the Engineer from time-to-time Contract value shall mean value of the entire work as stipulated in the letter of acceptance of tender subject such additions there to or deductions there from as may be made under the provide herein after contained.

1.0.7 Specifications shall mean the specifications referred to in the tender and modifications thereof as may time to time be furnished or approved by the Architect/Consultant.

1.0.8 "Month" means calendar month.
1.0.9 "Week" means seven consecutive days.
1.0.10 "Day" means a calendar day beginning and ending at 00 Hrs and 24 Hrs respectively.

1.1.11 "SBI Engineer" shall mean The Civil/Electrical Engineer in-charge of the Project, as nominated by the AGM (P&E) SBI, Ahmedabad// Competent Authority, **GANDHINAGAR**.

1.1.12 The following shall constitute the Joint Project Committee (herein under referred to as JPC) for assessing and reviewing the progress of the work on the project and to issue instructions or directions from time to time for being observed and followed by the Architects Site Engineer / PMC and other consultants / contractors engaged in the execution of the project.

i) Assist General Manager – (P &E)
ii) SBI Engineer (Furniture and Electrical) in-charge of the Project.
iii) Concerned partner of the Architects and their Resident Architect Member.

CLAUSE

1.0 Total Security Deposit:.
Total security deposit shall be 5.0% of contract value. Deduction from each running bill account (if permitted) will be @ 10% till Total Security Deposit (TSD) reaches to 5% of contract value. The 50% of the Total Security Deposit shall be paid to the contractor on the basis of Architect's certifying the virtual completion. The balance 50% would be paid to the contractors after completion Defects Liability Period as specified in the contract/WORK ORDER.

1.1 Earnest Money Deposit- 4,900/-
However, if the tenderer revokes his tender after acceptance of rate at any time the period when he is required to keep his tender open acceptance by the SBI or after it is accepted by the SBI or the contractor fails to enter into a formal agreement or fails to commence the work within the stipulated time, the bank is liable to initiate necessary action against the bidder. The action may also include debarring of bidders empanelment for an year or so.

1.2 **Initial Security Deposit (ISD**): 2% INCLUDING EMD

1.3 ADDITIONAL SECURITY DEPOSIT / PERFORMANCE GUARANTEE

Additional Security deposit (ASD)/Additional performance Guarantee (APG) shall be applicable if the bid price is below 10% of the estimated cost put to tender. The amount of such ASD/ APG shall be the difference between 90% of estimated cost put to tender and the quoted price. ASD in the format of DD / Banker's Cheque / Bank Guarantee shall be submitted within 15 days of intimation of award of work / work order, without which the contractor will not be allowed to start the work and failure of submission of ASD will result in forfeiture of EMD and cancellation of tender. For e.g, if a contractor is quoting 15% below the estimated cost put to tender (i.e. 85% of the estimate), then ASD of 5% of estimated cost is required to be obtained from the contractor (90%-85%).

1.4 Retention Money:
The Retention money shall be deducted from the running account bill at the rate of 10% of the gross value of work done by the contractor and claimed in each bill provided the Total Security Deposit plus Retention Money shall both together not exceeding 5.0% of the contract value. The 50% of the total security deposit shall be refunded to the contractor without any interest on issue of Virtual Completion certificate by the Architect/consultant. The balance 50% of the total security deposit shall be refunded to the contractors without interest within fifteen days after the end of defects liability period provided the contractor has satisfactorily attended to all defects in accordance with the conditions of contract including site clearance.

2.0 **Language:**
The language in which the contract documents shall be drawn shall be in English.

3.0 **Errors, omissions and discrepancies:**
In case of errors, omissions and/ or disagreement between written and scaled dimensions on the drawings or between the

drawings and specifications etc., the following order shall apply.

i) Between scaled and written dimension (or description) on a drawing, the latter shall be adopted.

ii) Between the written or shown description or dimensions in the drawings and the corresponding one in the specification the former shall be taken as correct.

iii) Between written description of the item in the specifications and descriptions in bills of quantities of the same item, the former shall be adopted:

a) In case of difference between rates written in figures and words, the rate in words shall prevail.

b) Between the duplicate / subsequent copies of the tender, the original tender shall be taken as correct.

4.0 **Scope of Work:**

The contractor shall carryout complete and maintain the said/awarded work in every respect strictly accordance with this contract and with the directions of and to the satisfaction Bank to be communicated through the architect/consultant. The architect/consultant at the directions of the SBI from time to time issue further drawings and / or write instructions, details directions and explanations which are here after collectively references to as Architect's / consultant's instructions in regard to the variation or modification of the design, quality or quantity of any work or the addition or omission or substitution work. Any discrepancy in the drawings or between BOQ and / or drawings and/or specifications. The removal from the site of any material brought thereon by the Contractor and any substitution of any other materials therefore the removal and/orre- execution of any work executed by him. The dismissal from the work of any person engaged the re upon.

5.0 i) **Letter of Acceptance:**

Within the validity period of the tender the SBI shall issue a letter of acceptance directly or through the architect by registered post or otherwise depositing at the of the contractor as given in the tender to enter into a Contract for the execution of the work as per the terms of the tender. The letter of acceptance shall constitute a bind contract between the SBI and the contractor.

ii) **Contract Agreement:**

On receipt of intimation of the acceptance of tender from the SBI /Architect the successful tenderer shall be bound to implement the contract and within fifteen days there of shall sign an agreement in a non-judicial stamp paper of appropriate value.

6.0 **Ownership of drawings**:

All drawings, specifications and copies thereof furnished by the SBI through its Architect / consultants are the properties of the SBI They are not to be used on other work.

7.0 **Detailed drawings and instructions:**

The SBI through its architects / consultants shall furnish with reasonable proper additional instructions by means of drawings or otherwise necessary for the execution of the work. All such drawings and instructions shall be consistent with contract documents, true developments thereof and reasonably inferable there.

The work shall be executed in conformity there with and the contractor prepare a detailed programme schedule indicating therein the date of start and completion of various activities on receipt of the work order and submit the same to the SBI through the architect/consultant

7.1 Copies of agreement:

Two copies of agreement duly signed by both the parties with the drawings shall be handed over to the contractors.

8.0 Liquidated damages:

If the contractor fails to maintain the required progress in terms of clause 6.0 of GOC or to complete the work and clear the site including vacating their office on or before the contracted or extended date or completion, without justification in

support of the cause of delay, he may be called upon without prejudice to any other right of remedy available under the law to the SBI on account of such breach to pay a liquidated damages at the rate of 0.50% of the contract value which subject to a maximum of 5% of the contract value.

9.0 Materials, Appliances and Employees:

Unless or otherwise specified the contractor shall provide and pay for all materials, labour, water, power, tools, equipment transportation and any other facilities that are required for the satisfactory execution and completion of the work. Unless or otherwise specified all materials shall be new and both workmanship and materials shall be best quality. The contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him. Workman whose work or behavior is found to be unsatisfactory by the SBI /Architect/ consultant he shall be removed from the site immediately.

10.0 Permits, Laws and Regulations:

Permits and licenses required for the execution of the work shall be obtained by the contractor at his own expenses. The contractor shall give notices and comply with the regulations, laws, and ordinances rules, applicable to the contract. If the contractor observes any discrepancy between the drawings and specifications, he shall promptly notify the SBI in writing under intimation of the Architect/ Consultant. If the contractor performs any act, which is against the law, rules and regulations he shall meet all the costs arising the reform and shall indemnify the SBI any legal actions arising there from.

11.0 Setting out Work:

The contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions, and alignment of all parts thereof and get it approved by the architect / consultant before proceeding with the work. If at any time any error in this respect shall appear during the progress of the works, irrespective of the fact that the layout had been approved by, the architect / consultant the contractor shall be responsible for the same ad shall his own expenses rectify such error, if so, required to satisfaction of the SBI

12.0 Protection of works and property:

The contractor shall continuously maintain adequate protection. of all his work from damage and shall protect the SBI's properties from injury or loss arising in connection with contract. He shall make good any such damage, injury, loss, except due to causes beyond his control and due to his fault or negligence.

He shall take adequate care and steps for protection of the adjacent properties. The contractor shall take all precautions for safety and protections of his employees on the works and shall comply with all applicable provisions of Govt. and local bodies' safety laws and building codes to prevent accidents, or injuries to persons or property on about or adjacent to his place of work. The contractor shall take insurance covers as per clause at his own cost. The policy may be taken in joint names of the contractor and the SBI and the original policy may be lodged with the SBI

13.0 Inspection of work:

The SBI / Architect / Consultant or their representatives shall at all reasonable times have free access to the work site and / or to the workshop, factories, or other places where materials are lying or from where they are obtained and the contractor shall give every facility to the SBI/Architect/consultant and their representatives necessary for inspection and examination and test of the materials and workmanship. No person unless authorized by the SBI/ Architect /Consultant except the representative of Public authorities shall be allowed on the work at any time. The proposed work either during its construction stage or its completion can also be inspected by the Chief Technical Examiner's Organization a wing of Central Vigilance commission.

14.0 Assignment and subletting:

The whole of work included in the contract shall be executed the contractor and he shall not directly entrust and engage or indirectly transfer, assign or underlet the contract or any part or share there of or interest therein without the written consent of the SBI through the Architect and no undertaking shall relieve the contractor from the responsibility of the contractor from active & superintendence of the work during its progress.

15.0 Quality of materials, workmanship &Test:

All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Architect/consultant instructions and shall be subject from time to time to such tests as the architect/consultant may direct at the place of manufacture or fabrication or on the site or an approved testing laboratory. The contractor shall provide such assistance, instruments, machinery, labor, and materials as are normally required for examining measuring sampling and testing any material or part of work before in corporation in the work for testing as may be selected and required by the architect/consultant.

ii) Samples:

All samples of adequate numbers, size, shades & pattern as per specifications shall be supplied by the contractor without any extra charges. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at the site detailed literature / test certificate of the same shall be provided to the satisfaction of the Architect/consultant before submitting the sample/literature the contractor shall satisfy himself that the material / equipment for which he is submitting the sample / literature meet with the requirement of tender specification. Only when the samples are approved in writing by the architect/consultant the contractor shall proceed with the procurement and installation of the particular material / equipment. The approved samples shall by the signed by the Architect / Consultant for identification and shall be kept on record at site office until the completion of the work for inspection / comparison at any time. The Architect/Consultant shall take reasonable time to approve the sample. Any delay that might occur in approving the samples for reasons of its not meeting the specifications or other discrepancies inadequacy in AIRCONDITIONING MATERIAL samples of best qualities from various manufacturers and such other aspects causing delay on the approval of the materials / equipment etc. shall be to the account of the contractor.

iii) Cost of tests:

The cost of making any test shall be borne by the contractor if such test is intended by or provided for in the specification or BOQ.

iv) Costs of tests not provided for:

If any test is ordered by the Architect/ Consultant which is either

a) If so intended by or provided for or (in the cases above mentioned) is not so particularized, or though so intended or provided for but ordered by the Architect / Consultant to be carried out by an independent person at any place other than the site or the place of manufacture or fabrication of the materials tested or any Government / approved laboratory, then the cost of such test shall be borne by the contractor.

16.0 Obtaining information related to execution of work:

No claim by the contractor for additional payment shall be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the work nor any misunderstanding or the obtaining incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfillment of contract.

17.0 Contractor's superintendence:

The contractor shall give necessary personal superintendence during the execution the works and as long, thereafter, as the Architect/Consultant may consider necessary until the expiry of the defects liability period, stated hereto.

18.0 Quantities:

The bill of quantities (BOQ) unless or otherwise stated shall be deemed to have been prepared in accordance with the Indian Standard Method of Measurements and quantities. The rate quoted shall remain valid for variation of quantity against individual item to any extent. The entire amount paid under Clause 19, 20 hereof as well as amounts of prime cost and provision sums, if any, shall be excluded.

19.0 Works to be measured:

The Architect/Consultant may from time to time intimate to the contractor that he requires the work to be measured and the contractor shall forthwith attend or send a quantity representative to assist the Architect in taking such measurements and

calculation and to furnish all particulars or to give all assistance required by any of them. Such measurements shall be taken in accordance with the Mode of measurements detail in the specifications. The representative of the Architect / Consultant shall take measurements with the contractor's representative and the measurements shall be entered in the measurement book. The contractor or his authorized representative shall sign all the pages of the measurement book in which the measurements have been recorded in token of his acceptance. All the corrections shall be duly attested by both representatives. No over writings shall be made in the M book should the contractor not attend or neglect or omit to depute his representative to take measurements the measurements recorded by the representative of the Architect/consultant shall be final. All authorized extra work, omissions and all variations made shall be included such measurement.

20.0 Variations:

No alteration, omission or variation ordered in writing by the Architect/consultant vitiates the contract. In case the SBI/ Architect / Consultant thinks proper at any during the progress of works to make any alteration in, or additions to or omission from the works or any. Alteration in the kind or quality of the materials to be used therein, the Architect / Consultant shall give notice thereof in writing to the contractor shall confirm in writing within seven days of giving such oral instructions the contract shall alter to, add to, or omit from as the case may be in accordance with such but the contractor shall not do any work extra to or make any alterations or additions to or omissions from the works or any deviation from any of the provisions of the contract, stipulations, specifications or contract drawings without previous consent in writing of the Architect/ Consultant and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Architect / Consultant and the same shall be added to or deducted from the contract value, as the case maybe.

21.0 Valuation of Variations:

No claim for an extra shall be allowed unless it shall have been executed under the authority of the Architect / Consultant with the concurrence of the SBI as herein mentioned. Any such extra is herein referred to as authorized extra and shall be made in accordance with the following provisions.

(i) The net rates or prices in the contract shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work price herein.
(ii) Rates for all items, wherever possible should be derived out of the rates given in the priced BOQ.

The net prices of the original tender shall determine the value of the items omitted, provided if omissions do not vary the conditions under which any remaining items of Works are carried out, otherwise the prices for the same shall be valued under sub- Clause 'c' hereunder.

Where the extra works are not of similar character and/or executed under similar conditions as aforesaid or where the omissions vary the conditions under which any remaining items or works are carried out, then the contractor shall within 7 days of the receipt of the letter of acceptance inform the Architect/ consultant of the rate which he intends to charge for such items of work, duly supported by analysis of the rate or rates claimed and the Architect/consultant shall fix such rate or prices as in the circumstances in his opinion are reasonable and proper, based on the market rate.
Where extra work cannot be properly measured or valued the contractor shall be allowed day work prices at the net rates stated in the tender, of the BOQ or, if not, so stated then in accordance with the local day work rates and wages for the district; provided that in either case, vouchers specifying the daily time (and if required by the Architect/Consultant) the workman's name and materials employed be delivered for verifications to the Architect /consultant at or before the end of the week following that in which the work has been executed.

It is further clarified that for all such authorized extra items where rates cannot be derived from the tender, the Contractor shall submit rates duly supported by rate analysis worked on the 'market rate basis for material, labour hire / running charges of equipment and wastages etc. plus 15% towards establishment charges, contractor's overheads and profit. Such items shall, not be eligible for escalation.

22.0 Final measurement:

The measurement and valuation in respect of the contract shall be completed within two months of the virtual completion of the work.

23.0 Virtual Completion Certificate (VCC):

On successful completion of entire works covered by the contract to the full satisfaction of the SBI, the contractor shall ensure that the following works have been completed to the satisfaction of the SBI:

Clear the site of all scaffolding, wiring, pipes, surplus materials, contractor's labour equipment and machinery.

Demolish, dismantle and remove the contractor's site office, temporary works, structure including labour sheds/camps and constructions and other items and things whatsoever brought upon or erected at the site or any land allotted to the contractor by the SBI not incorporated in the permanent works.

Remove all rubbish, debris etc. from the site and the land allotted to the contractor by the SBI and shall clear, level and dress, compact the site as required by the SBI

Shall put the SBI in undisputed custody and possession of the site and all land allot by the SBI

Shall hand over the work in a peaceful manner to the SBI

All defects / imperfections have been attended and rectified as pointed out by the Architects to the full satisfaction of SBI

Upon the satisfactory fulfillment by the contractor as stated above, the contractor is entitled to apply to the Architect / consultant is satisfied of the completion of work. Relative to which the completion certificate has been sought, the Architect/ consultant shall within fourteen (14) days of the receipt of the application for completion certificate, issue a VCC in respect of the work for which the VCC has applied.

This issuance of a VCC shall not be without prejudice to the SBI rights and contractor liabilities under the contract including the contractor's liability for defects liability nor shall the issuance of VCC in respect of the works or work at any site be construction as a waiver of any right or claim of the SBI against the contractor in respect of or work at the site and in respect of which the VCC has been issued.

24.0 Work by other agencies:

The SBI / Architect / consultant reserves the rights to use premises and any portion the site for execution of any work not included in the scope of this contract which it may desire to have carried out by other persons simultaneously and the contractor shall not only allow but also extend reasonable facilities for the execution of such work. The contractor however shall not be required to provide any plant or material for the execution of such work except by special arrangement with the SBI. Such work shall be carried out in such manner as not to impede the progress of the works included in the contract.

25.0 Insurance of works:

Without limiting his obligations and responsibilities under the contract the contractor shall insure in the joint names of the SBI and the contractor against all loss of damages from whatever cause arising other than the excepted risks, for which he is responsible under the terms of contract and in such a manner that the SBI and contractor are covered for the period stipulated I clause of GCC and are also covered during the period of maintenance for loss or damage arising from a cause, occurring prior to the commencement of the period of maintenance and for any loss or damage occasioned by the contractor in the course of any operations carried out by him for the purpose of complying with his obligations under clause.

The Works for the time being executed to the estimated current Contract value thereof, or such additional sum as may be specified together with the materials for incorporation in the works at their replacement value.

The constructional plant and other things brought on to the site by the contractor to the replacement value of such constructional plant and other things.

Such insurance shall be affected with an insurer and in terms approved by the SBI which approval shall not be unreasonably withheld and the contractor shall whenever required produce to the Architect / consultant the policy if insurance and the receipts for payment of the current premiums.

26.0 Damage to persons and property:

The contractor shall, except if and so far as the contract provides otherwise indemnify the SBI against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and maintenance of the works and against all claims proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation of damages for or with respect to:

a) The permanent use or occupation of land by or any part thereof.

b) The right of SBI to execute the works or any part thereof on, over, under, in or through any lands.

c) Injuries or damages to persons or properties which are unavoidable result of the execution or maintenance of the works in accordance with the contract.

d) Injuries or damage to persons or property resulting from any act or neglect of the SBI their agents, employees or other contractors not being employed by the contractor or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the SBI, their employees, or agents or other employees, or agents or other contractors for the damage or injury.

27.0 Contractor to indemnify SBI:

The contractor shall indemnify the SBI against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision sub-clause 26.0 of this clause.

28.0 Contractor's superintendence:

The contractor shall fully indemnify and keep indemnified the SBI against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect to any article or part thereof included in the contract. In the event of any claim made under or action brought against SBI in respect of such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expenses to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the SBI if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Architect / consultant in this behalf.

29.0 Third Party Insurance:

Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under clause 25.0 of GCC shall insure against his liability for any material or physical damage, loss, or injury which may occur to any property including that of SBI, or to any person, including any employee of the SBI, by or arising out of the execution of the works or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to clause 25.0 thereof.

30.0 Minimum amount of Third Party Insurance:

Such insurance shall be affected with an insurer and in terms approved by the SBI which approval shall not be reasonably withheld and for at least the amount stated below. The contractor shall, whenever required, produce to the. Architect / consultant the policy or policies of insurance cover and receipts for payment of the current premiums.

The minimum insurance cover for physical property, injury, and death is Rs.5 Lakh per occurrence with the number of occurrences limited to four. After each occurrence contractor will pay additional premium necessary to make insurance valid for four occurrences always.

31.0 Accident or Injury to workman:

The SBI Shall not be liable for or in respect to any damages or compensation payable at law in respect or inconsequence of any accident or injury to any workmen or other person in the employment of the contractor or any sub-contractor, save and except an accident or injury resulting from any act or default of the SBI or their agents, or employees. The contractor shall indemnify and keep indemnified SBI against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

32.0 Insurance against accidents etc. to workmen:

The contractor shall insure against such liability with an insurer approved by the SBI During the whole of the time that any persons are employed by him on the works and shall, when required, produce to the architect / consultant such policy of insurance and receipt for payment of the current premium. Provided always that, in respect of any persons employed by any sub-contractor the contractor's obligation to insured as aforesaid under this sub-clause shall be satisfied if the sub-contractor shall have insured against the liability in respect of such persons in such manner that SBI is indemnified under the policy but the contractor shall require such sub-contractor to produce to the Architect /consultant when such policy of insurance and the receipt for the payment of the current premium.

33.0 Remedy on contractor's failure to insure:

If the contractor fails to effect and keep in force the insurance referred to above or any other insurance which he may be required to effect under the terms of contract, then and in any such case the SBI may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the SBI as aforesaid from any amount due or which may become due to the contractor, or recover the same as debt from the contractor.

Without prejudice to the others' rights of the SBI against contractors. In respect of such default, the employer shall be entitled to deduct from any sums payable to the contractor the amount of any damage's costs, charges, and other expenses paid by the SBI And which are payable by the contractors under this clause. The contractor shall upon settlement by the Insurer of any claim made against the insurer pursuant to a policy taken under this clause, proceed with due diligence to rebuild or repair the works destroyed or damaged. In this event all the monies received from the Insurer in respect of such damage shall be paid to the contractor and the Contractor shall not be entitled to any further payment in respect of the expenditure incurred for rebuilding or repairing of the materials or goods destroyed or damaged.

34.0 Commencement of Works:

The date of commencement of the work will be reckoned from the date of award of letter by the SBI

35.0 Time for completion:

Time is essence of the contract and shall be strictly observed by the contractor. The entire work shall be completed within the stipulated period from the date of commencement. If required in the contract or as directed by the Architect / consultant. The contractor shall complete certain portions of work before completion of the entire work. However, the completion date shall be reckoned as the date by which the whole work is completed as per the terms of the contract.

36.0 Extension of time:

If, in the opinion of the Architect/consultant, the work be delayed for reasons beyond the control of the contractor, the Architect/consultant may submit a recommendation to the SBI to grant a fair and reasonable extension of time for completion of work as per the terms of contract. If the contractor needs an extension of time for the completion of work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion as stipulated in the contract, the contractor shall apply to the SBI Through the Architect' Consultant in writing at least 30 Days before the expiry of the scheduled time and while applying for extension of time he shall furnish the reason in detail and his justification if an', for the delays. The architect/consultant shall submit their recommendations to the SBI in the prescribed format for granting extension of time. While granting extension of time the contractor shall be informed the period extended time which will qualify for levy of liquidated damages. For the balance period in excess of original stipulated period and duly sanctioned extension of time by the provision of liquidated damages as stated under clause 10.0 shall become applicable. Further the contract shall remain in force even for the period beyond the due date of completion irrespective

whether the extension is granted or not.

37.0 Rate of progress:

Whole of the materials, plant and labour to be provided by the contractor and the mode, manner and speed of execution and maintenance of the works are to be of a kind and conducted in a manner to the satisfaction of the Architect/consultant should the rate of progress of the work or any part thereof be at any time be in the opinion the. Architect / consultant too Slow to ensure the completion of the whole of the work the prescribed time or extended time for completion the Architect/consultant shall the re upon take such steps as considered necessary by the Architect / consultant to expedite progress so as to complete the works by the prescribed time or extended time. Such communications from the Architect / consultant neither shall relieve. The contractor from fulfilling obligations under the contract nor he will be entitled to raise any claims arising out of such directions.

38.0 Work during nights and holidays:

Subject to any provision to the contrary contained in the contract no permanent work shall save as herein provided be carried on during the night or on holidays without the permission in writing of the Architect/consultant, save when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the work in which case the contractor shall immediately advise the Architect / consultant. However the provisions of the clause shall not be applicable in the case of any work which becomes essential to carry by rotary or double shifts in order to achieve the progress and quality of the part of the works being technically required / continued with the prior approval of the Architect / consultant at no extra cost to the SBI

All work at night after obtaining approval from competent authorities shall be carried out without unreasonable noise and disturbance.

39.0 No compensation or restrictions of work:

If at any time after acceptance of the tender SBI shall decide to abandon or reduce the scope of work for any reason whatsoever and hence not required the whole or any part of the work to be carried out. The Architect / consultant shall give notice in writing that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise what so ever on account of any profit or advantage which he might have derived from the execution of the Work fully but which he did not derive in consequence of the fore closure of the whole or part of the work.

Provided that the contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the site of the work by the contractor and rendered surplus as a result of the abandonment, curtailment of the work or any portion thereof and then taken back by the contractor, provided however that the Architect/Consultant shall have in such cases the option of taking over all or any such materials at their purchase price or a local current rate whichever is less.

In case of such stores having been issued from SBI stores and returned by the contractor to stores, credit shall be given to him at the rates not exceeding those at which were originally issued to the contractor after taking into consideration and deduction for claims on account of any deterioration or damage while in the custody of the contractor and in this respect the decision of Architect / consultant shall be final.

40.0 Suspension of work:

The contractor shall, on receipt of the order in writing of the Architect / consultant (whose decision shall be final and binding on the contractor) suspend the progress of works or any part the offer such time and in such manner as Architect/consultant may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of following reasons:

a) On account any default on the part of the contractor, or
b) For proper execution of the works or part thereof for reasons other than the default the contractor, or
c) For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works the extent necessary and carry out the instructions given in that behalf by the Architect / consultant.

i)If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:

The contractor shall be entitled to an extension of time equal to the period of every such suspension. No compensation whatsoever shall be paid on this account.

41.0 Action when the whole security deposit is forfeited:

In any case in which under any clause or clauses of this contract, the Contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit the Architect / consultant shall have the power to adopt any of the following course as they may deem best suited to the interest of the SBI:

To rescind the contract (of which rescission notice in writing to the contractor by - Architect / consultant shall be conclusive evidence) and in which case the security, deposit of the contractor shall be forfeited and be absolutely at the disposal of SBI.

To employ labor paid by the SBI and to supply materials to carry out the work, or part of the work, debiting the contractor with the cost of the labor and materials cost of such labor and materials as worked out by the Architect / consultant shall final and conclusive against the contractor) and crediting him with the value of the work done, in all respects in the same manner and at the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract certificate of architect /consultant as to the value of work done shall be final conclusive against the contractor.

To measure up the work of the contractor, and to take such part thereof as shall unexecuted, out of his hands, and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (The amount of which excess the certificates in writing of the Architects / consultant shall final and conclusive) shall be borne by original contractor and may be deducted any money due to him by SBI under the contract or otherwise, or from his security deposit or the proceeds of sale thereof, or sufficient part thereof.

In the event of any of above courses being adopted by the SBI the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any material or entered into any engagements or make any advances on account of, or with a view to the execution of the work or the performance of the contract and incase the contract shall be rescind under the provision aforesaid, the contractor shall not be entitled to recover or to be paid any sum or any work thereto for actually performed under this contract, unless, and until the Architect / consultant will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only been titled to be paid the value so certified.

42.0 Owner's right to terminate the contract:

If the contractor being an individual or a firm commit any 'Act of insolvency' or shall be adjusted an insolvent or being an incorporated company shall have an order for compulsory winding up voluntarily or subject to the supervision of Govt. and of the Official Assignee of the liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him to do so, to show to the reasonable satisfaction of the Architect / Consultant that he is able to carry out and fulfill the contract, and to dye security therefore if so required by the Architect /Consultant.

Or if the contractor (whether an individual firm or incorporated Company) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of the contractor.

Or shall assign or sublet this contract without the consent in writing of the SBI through the Architect/Consultant or shall charge or encumber this contract or any payment due to which may become due to the contractor there under:

has abandoned the contract; or

has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 14 days after receiving from the SBI through the Architect / consultant written notice to proceed, or

has failed to proceed with the works with such diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or has failed to remove the materials from the site or to pull down and replace work within seven days after written notice from the SBI through the Architect / Consultant that the said materials were condemned and rejected by the Architect/ consultant under these conditions; or has neglected or failed persistently to observe and perform all or any of the acts matters or things by this contract to be observed and performed by the contactor for seven days after written notice shall have been given to the contractor to observe or perform the same or has to the detriment of good workmanship or in defiance of the SBI or Architect's / consultant's instructions to the contrary subject any part of the contract. Then and in any of said cases the SBI and or the Architect / consultant, may not withstanding any previous waiver, after giving seven days' notice in writing to the contractor, determine the contract, but without thereby affecting the powers of the SBI or the Architect/consultant or the obligation and liabilities of the contractor the whole of which shall continue in force as fully as if the contract had not been determined and as if the works subsequently had been executed by or on behalf of the contractor. And, further the SBI through the Architect / consultant their agents or employees may enter upon and take possession of the work and all plants, took scaffoldings, materials, sheds, machineries lying upon the premises or on the adjoining lands or roads use the same by means of their own employees or workmen in carrying on and completing the work or by engaging any other contractors or persons to the work and the contractor shall not in any was interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for complement and finishing or using the materials and plant for the works.

When the works shall be completed or as soon thereafter as convenient the SBI Or architect/consultant shall give a notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within 14 days after receive thereof by him the SBI sell the same by publication, and after due publication, and shall, adjust the amount realized by such tender. The contractor shall have no right to question any of the act of the SBI incidental to the sale of the materials etc.

43.0 Certificate of payment:

The contractor shall be entitled under the certificates to be issued by the Architect / consultant to the contractor within 10 working days from the date of certificate to payment from SBI From time to time SBI shall recover the statutory recovering other dues including the retention amount from the certificate of payment. Provided always that the issue of any certificate by the Architect / consultant during progress of works or completion shall not have effect as certificate of satisfaction relieve the contractor from his liability under clause.

The Architect / consultant shall have power to withhold the certificate if the work or in part thereof is not carried out to their satisfaction. The Architect/consultant may by any certificate make any corrections required previous certificate. The SBI shall modify the certificate of payment as issued by the architect/ consultant from time to time while making the payment. The contractor shall submit interim bills only after taking actual measurements and properly recorded in the Measurement books. The Contractor shall not submit interim bills when the approximate value of work done by him up to 70%.The final bill may be submitted by contractor within a period of one month from the date of virtual completion and Architect / consultant shall issue the certificate of payment within a period of two months. The SBI Shall pay the amount within a period of three months from the date of issue of certificate provided there is no dispute in respect of rates and quantities.

The contractor shall submit the interim bills in the prescribed format with all details.

44.0 Settlement of Disputes and Arbitration:

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or the execution or failure to execute the same, whether arising during the progress of the work or after the cancellation,termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter :

i) If the contractor considers that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the Architect or in case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract or raise any dispute, the Contractor shall forthwith give notice in writing of his claim, or dispute to the Assistant General Manager (Premises& Estate)/Dy. General Manager (Premises)and endorse a copy of the same to the Architect, within 30 days from the date of disallowance thereof or the date of deduction or recovery. The said notice shallgive full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the Bank be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the Assistant General Manager (Premises& Estate)/Dy. General Manager (premises) in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claim not notified to the Assistant General Manager (Premises & Estate) / Dy. General Manager(Premises) in writing in the manner and within the time aforesaid.

ii) The Assistant General Manager (Premises & Estate) / Dy. General Manager (Premises) shall give his decision in writing on the claims notified by the contractor. The contractor may within 30 days of the receipt of the decision of the Assistant General Manager (Premises& Estate) / Dy. General Manager (Premises) submit his claims to the conciliating authority namely the Circle Development Officer/General Manager (Official Language & Corporate Services) for conciliation along with all details and copies of correspondence exchanged between him and the Assistant General Manager (Premises& Estate)/Dy. General Manager (Premises)

iii) If the conciliation proceedings are terminated without settlement of the disputes, the contractorshall, within a period of 30 days of termination thereof shall give a notice to the concerned ChiefGeneral Manager/Dy. Managing Director (HR) & Corporate Development Officer of the Bank for appointment of an arbitrator to adjudicate the notified claims failing which the claims of the contractor shall be deemed to have been considered absolutely barred and waived.

iv) Except where the decision has become final, binding and conclusive in terms of the contract, all disputes or differences arising out of the notified claims of the contractor as aforesaid and all claims of the Bank shall be referred for adjudication through arbitration by the Sole Arbitratorappointed by the Chief General Manager at LHO /Dy. Managing Director &Corporate Development Officer at CC/CCEs. It will also be no objection to any such appointment that theArbitrator so appointed is a technically competent person not below the rank of Superintending Engineer or equivalent position in Public Sector Banks / CPSEs, CPWD, LIC, RBI etc. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid by the said Chief General Manager/ Dy. Managing Director (HR) & Corporate Development Officer. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

v) It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.

vi) It is also a term of this contract that no person other than a person appointed by such Chief General Manager aforesaid should act as arbitrator.

vii) The conciliation and arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made there under.

viii) It is also a term of the contract that if any fees are payable to the arbitrator these shall be paidequally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statementof claims and counter statement of claims. The venue of the arbitration shall be such place asmay 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) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and **45.0 Water supply:**

The contractor shall make his own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following condition.

i) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the Architect /consultant's.

ii) The contractor shall make alternative arrangements for the supply of water if the arrangement made by the contractor for procurement of water in the opinion of the Architect / consultant is unsatisfactory.

iii) In case contractor is permitted to use SBI source of water i.e., Municipal connection, bore well (existing or new) etc., the SBI will recover as per clause **51.0** of this document form the final bill of contractor.

The contractor shall construct temporary well / tube well in SBI land for taking water for construction purposes only after obtaining permission in writing from the SBI The contractor has to make his own arrangements for drawing and distributing the water at his own cost. He has to make necessary arrangements. To avoid any accidents or damages caused due to construction and subsequent maintenance of the wells. He has to obtain necessary approvals from local authorities, if required, at his own cost. He shall restore the ground to its original condition after wells are dismantled on completion of work or hand over the well to the SBI without any compensation as directed by the architect /consultant.

45.0 Water supply:

The contractor shall make his own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following condition.

iv) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the Architect /consultant's.

v) The contractor shall make alternative arrangements for the supply of water if the arrangement made by the contractor for procurement of water in the opinion of the Architect / consultant is unsatisfactory.

vi) In case contractor is permitted to use SBI source of water i.e., Municipal connection, bore well (existing or new) etc., the SBI will recover as per clause **51.0** of this document form the final bill of contractor.

The contractor shall construct temporary well / tube well in SBI land for taking water for construction purposes only after obtaining permission in writing from the SBI The contractor has to make his own arrangements for drawing and distributing the water at his own cost. He has to make necessary arrangements. To avoid any accidents or damages caused due to construction and subsequent maintenance of the wells. He has to obtain necessary approvals from local authorities, if required, at his own cost. He shall restore the ground to its original condition after wells are dismantled on completion of work or hand over the well to the SBI without any compensation as directed by the architect /consultant.

46.0 Power supply:

The contractor shall make his own arrangements for power and supply / distribution system for driving plant or machinery for the work and for lighting purpose at his own cost, the cost of running and maintenance of the plants are to be included in his tender prices, He shall pay all fees and charges required, by the power supply and include the same in his tendered rates and hold the owner free from all such costs. He has to obtain necessary approval from the appropriate authorities, if required.

In case contractor is permitted to use Bank's source of power supply provided at one point, the SBI will recover as per clause **51.0** of this document from the final bill of contractor.

47.0 Treasure trove etc.

Any treasure trove, coin or object antique which may be found on the site shall be the property of SBI and shall be handed over to the bank immediately.

48.0 Method of measurement:

Unless otherwise mentioned in the schedule of quantities or in mode of measurement, the measurement will be on the net quantities or work produced in accordance with up to date rules laid down by the Bureau of Indian Standards. In the event any dispute/ disagreement the decision of the Architect / consultant shall be final and binding on the corrector.

49.0 Maintenance of registers:

The contractor shall maintain the following registers as per the enclosed perform at site of work and should produce the same for inspection of SBI /Architect / consultant whenever desired by them. The contractor shall also maintain the records / registers as required by the local authorities / Govt. from time to time.

i) Register for secured advance
ii) Register for hindrance to work
iii) Register for running account bill
iv) Register for labour

50.0 Force Majeure:

Neither contractor nor SBI shall be considered in default in performance of the obligations if such performance is prevented or delayed by events such as but not war, hostilities revolution, riots, civil commotion, strikes, lockout, conflagrations, epidemics, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of or for any other cause beyond the reasonable control of the party affected or prevents or delayed. However, a notice is required to be given within 30 days from the happening of the event with complete details, to the other party to the contract, if it is not possible to serve a notice, within the shortest possible period without delay.

As soon as the cause of force majeure has been removed the party whose ability perform its obligations has been affected, shall notify the other of such cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.

From the date of occurrence of a case off or force majeure obligations of the party affected.

51.0 Water power and other facilities:

The rate quoted by the contractor shall include all expenses that are required for providing all the water required for the work and the contractor shall make his own arrangements for the supply of good quality water suitable for the construction and good quality drinking water for their workers If necessary the contractor has to sink a tube well/open well and bring water by means of tankers at his own cost for the purpose The SBI will not be liable to pay any charges in connection with the above

The rate quoted in the tender shall include the expenses for obtaining and maintaining power connections and shall pay for the consumption charges

The contractors for other trades directly appointed by the SBI shall be entitled to take power and water connections from the temporary water and power supply obtained by the contractor However, the concerned contractor shall make their own arrangements to draw the supply and pay directly the actual consumption charges at mutually agreed rates between them. All municipal charges for drainage and water connection for Construction purposes shall be borne by the contactor and charges payable for permanent connections, if any, shall be initially paid by the contactor and the SBI will reimburse the amount on production of receipts.

The SBI as well as the Architect / consultant shall give all possible assistance to the Contractor's to obtain the requisite Permission from the various authorities, but the responsibility for obtaining the same in time shall be of the contractor.

In case contractor is permitted to use Bank's source of water and power supply provided at one point, the SBI will recover @ 0.50% of final bill amount for water and electricity (Combined) from the bill of contractor.

52.0 Facilities for contractor's employees:
The contractor shall make his own arrangement for the housing and welfare of his staff and workmen including adequate drinking water facilities. The contractor shall also make the arrangements at his own cost for transport where necessary for his staff and workmen to and from site of work at his own cost.

53.0 Lighting of works:
The contractor shall at all times provide adequate and approved lighting as required for the proper execution and supervision and inspection of work.

54.0 Firefighting arrangements:
The contractor shall provide suitable arrangement for firefighting at his own cost. This purpose he shall provide requisite number of fire extinguishers and adequate number of buckets, some of which are to be always kept filled with sand and some with water this equipment shall be provided at suitable prominent and easily accessible place and shall be properly maintained.

Any deficiency in the fire safety or unsafe conditions shall be corrected by the contractor at his own cost and, to the approval of the relevant authorities. The contractor makes the following arrangements at his own cost but not limited the following:

a) Proper handling, storage and disposal of combustible materials and waste.
b) Work operations which can create fire hazards.
c) Access for fire-fighting equipment.
d) Type, number and location of containers for the removal of surplus materials and rubbish.
e) Type, size, number and location of fire extinguishers or other tire fighting equipment.
f) General housekeeping.

55.0 Site order book:
A site order book shall be maintained at site for the purpose of quick communication between the Architect / Consultant. Any communication relating to the work may be conveyed through records in the site order book. Such a communication from one party to the other shall be deemed to have been adequately served in terms of contract Each site order book shall have machine numbered pages in triplicate and shall carefully maintained and preserved by the contractor and shall be made available to the architect/consultant as and when demanded- Any instruction which the architect/consultant may like to issue to the contractor or the contractor may like to bring to the architect / consultant two copies of such instructions shall be taken from the site order book and one copy will be handed over to the party against proper acknowledgment and the second copy will be retained for their record.

56.0 Temporary fencing/barricading:
The contractor shall provide and maintain a suitable temporary fencing/barricading and gates at his cost to adequately enclose all boundaries of the site for the protection of the public and for the proper execution and security of the work and in accordance with the requirement of the architect/consultant and regulations of local authorities. These shall be altered, relocated and adopted from time to time as necessary and removed on completion of the work.

57.0 Site meetings:
Site meetings will be held to review the progress and quality evaluation. The contractor shall depute a senior representative along with the site representative and other staff of approved sub-contractors and suppliers as required to the site meetings and ensure all follow up actions. Any additional review meetings shall he held if required by the architect/ consultant.-

58.0 Disposal of refuse:
The contractor shall cart away all debris, refuse etc. arising from the work from the site and deposit the same as directed by the architect / consultant at his own cost. It is the responsibility of the contractor to obtain from the local authorities concerned to the effect that all rubbish arising out of contractor's activities at the construction site or any other off-site

activities borrow pits has been properly disposed off.

59.0 Contractor to verify site measurement:

The contractor shall check and verify all site measurements whenever requested other specialists contractors or other sub-contractors to enable them to prepare the own shop drawing and pass on the information with sufficient promptness as will in any way delay the works.

60.0 Displaying the name of the work:

The contractor shall put up a name board of suitable size as directed by the architect/ consultant indicating there in the name of the project and other details as given by the architect/consultant at his own cost and remove the same on completion of work.

61.0 As built drawings:

For the drawings issued to the contractor by the Architect / Consultant. The architect Consultant will issue two sets of drawings to the Contractor for the items for some changes have been made. From the approved drawings as instructed by the SBI / Architect / Consultant. The contractor will make the changes made on these copies and return these copies to the architect / Consultant for their approval. In cases revision is required or the corrections are not properly marked the architect/Consultant will point out the discrepancies to the contractor. The contractor will have to incorporated these corrections and / or attend to discrepancies either on copies as directed by the architect / consultant and resubmit to him for approval. The architect / consultant will return one copy duly approved by him.

For the drawings prepared by the contractor:

The contractor will modify the drawing prepared by him wherever the changes made by the SBI / architect / consultant. And submit two copies of such modified drawings to the architect/ consultant for approval. The architect / consultant will return one copy of the approved drawing to the contractor.

62.0 Approved make:

The contractor shall provide all materials from the list of approved makes at his own cost and also appoint the specialized agency for the waterproofing, anti-termite treatment, aluminum doors and windows and any other item as specified in the tender. The architect/consultant may approve any make / agency within the approved list as given in the tender after inspection of the sample/mockup.

63.0 Procurement of materials:

The contractor shall make his own arrangements to procure all the required materials for the work. All wastages and losses in weight shall be to the contractors account

64.0 Excise duty, taxes, levies etc.;

The contractor shall pay and be responsible for payment of all taxes, duties, levies, royalties, fees, cess or charges in respect of the works including but not limited to sales tax, tax on works contract excise duty, and Octroi, payable in respect of materials, equipment plant and other things required for the contact. All of the aforesaid taxes, duties, levies, fees and charges shall be to the contractor's account and the SBI Shall not be required to pay any additional or extra amount on this account. Variation of taxes, duties, fees, levies etc. if any, till completion of work shall be deemed to be included in the quoted rates and no extra amount on this account. Variation of taxes, duties, fees, levies etc. if any, till completion of work shall be deemed to be included in the quoted rates and no extra claim on this account will in any case be entertained. If a new tax or duty or levy or cess or royalty or Octroi is imposed under as statutory law during the currency of contract the same shall be borne by the contractor. However, GST will be paid extra.

65.0 Acceptance of tender:

The SBI shall have the right to reject any or all tenders without assigning any reason. They are not to bind to accept the lowest or any tender and the tenderer or tenderers shall have no right to question the acts of the SBI. However adequate transparency would be maintained by the SBI

66.0 Photographs:

The Contractor shall at his own expense supply to the Architects with duplicate hard copies of large photographs not less than 25 cm. x 20 cm. (10" x 8") of the works, taken from two approved portions of each building, at intervals of not more than one month during the progress of the work or at every important stage of construction.

In addition to above, the contractor shall be bound to submit adequate no. of site photographs along with each Running Bill for the project clearing showing major progress of work measured and claimed therein failing which the Architect/ SBI may consider returning the Bill to the contractor and no claim for delay on this account will be entertained.

67.0 Safety Codes:

1. First aid appliances including adequate supply of sterilized dressing and cotton wool shall be kept in a readily accessible place.

2. An injured person shall be taken to a public hospital without loss of time, in cases when the injury necessitates hospitalization.

3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from the ground.

4. No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm. (clear) and the distance between two adjacent running's shall not be more than 30 cm. When a ladder is used an extra labor shall be engaged for holding ladder.

5. The excavated material shall not be placed within 1.5 meters of the edge of the trench half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.
6. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one meter.

7. No floor, roof or other part of the structure shall be so overloaded with debris or material as to render it unsafe.

8. Workers employed on mixing and handling material such as asphalt, cement, mortar, concrete and lime shall be provided with protective footwear and rubber hand gloves.

9 Those engaged in welding works shall be provided with welders' protective eye shield and gloves.

10. (i) No paint containing lead or lead products shall be used except in the form of paste readymade paint.
(ii)Suitable face masks should be supplied for use by the workers when the paint applied in the form of spray or surface having lead paint dry rubbed and scrapped.

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

12 Hoisting machines and tackle used in the works including their attachments anchor and supports shall be in perfect condition.

13. The ropes used in hoisting or lowering material or as a means of suspension shall be durable quality and adequate strength and free form defects.

ANNEXURE - 4.9 BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT

Place: …….

Date:……..

(On non-judicial stamp paper of Rs ----------/-)

BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT

B.G.No._____ Value Rs._____

State Bank of India,

(Address)

Sub: Bank Guarantee of Rs .....towards Security Deposit for the work offer State Bank **of India.**

(Name of Branch/Office)

Dear Sir,

WHEREAS (Name and address of contractor/ vendor) (hereinafter called the Contractor) have entered into contract for (Name of Work) with State Bank of India (SBI) as mentioned in the letter of SBI's Consultants (Name & address of consultants) vide their letter No…….. dated ..... and the correspondence and tender relating thereto which is hereinafter referred to as "the said contract" the Contractor has now agreed to produce a Bank Guarantee amounting to 2% of the contract value less earnest money deposit of Rs ..... (Rupees only), to State Bank of India for performing their part of the contract obligations.

AND WHEREAS in terms of said contract, the contractor is required to furnish to State Bank of India a Guarantee of a Scheduled Bank for a value of Rs… ..... to be valid upto (date).

AND WHEREAS (Name of Bank and its branch) having their office at (address) the Guarantor, at the request of the contractor hereby furnishes a PBG in favour of State Bank of India and Guarantees in the manner hereinafter appearing.

In consideration of the premise, we (name of Bank and its branch) having our office at (address)here after called the "Guarantor" (which expression shall include its successors and assigns) here by expressly, irrevocably &unreservedly undertake and guarantee under that if the Contractor fails to execute the work according to his obligations under the said contract, then not withstanding any dispute between State Bank of India and the contractor the Guarantor shall, on demand without demur and without reference to the contractor pay to State Bank of India immediately any sum claimed by State Bank of India under the said contract up to a maximum amount of Rs._____(Rupees only).

In case the amount demanded by State Bank of India is not paid within 48 hours of receipt of demand, the Guarantor agrees to pay the aforesaid amount of Rs. _____/- (Rupees _____only).

(i) Such payment shall be notwithstanding any right the contractor may have directly against State Bank of India or any disputes raised by the Contractor with State Bank of India or any suits or proceedings pending in any competent court or before any arbitrator. State Bank of India's written demand shall be conclusive evidence to the Guarantor that such payment is

payable under the terms of the Contract and shall be binding in all respect on the guarantor.

(ii) The Guarantor shall not be discharged or released from the the undertaking and Guarantee, byany arrangement, variations made between SBI and the Contractor and or indulgence shown to the contractor by SBI, with or without the consent and knowledge of the guarantor or by alterations in the obligations of the contractor by any forbearance, whether as to payment, time performance or otherwise.

(iii) This guarantee shall remain valid until or as may be caused to be extended by the contractor or until discharged by SBI in writing whichever is earlier.

(iv) This guarantee shall be a continuing guarantee and shall not be revocable during its currency except with the previous written consent of SBI.

(v) This guarantee shall not be affected by any change in the constitution of the contractor, by absorption with any other body or corporation or dissolution or otherwise and this guarantee will be available to or enforceable against such body or corporation.

(vi) In order to give effect to this guarantee SBI will be entitled to act as if the Guarantor were the Principal debtor and the Guarantor hereby waives all and any of its rights or surety ship.

(vii) This guarantee shall continue to be in force notwithstanding the discharge of the contractor by operation of law and shall cease only on payment of the full amount by the Guarantor to SBIof the amount hereby secured.

(viii) This guarantee shall be in addition to and not in substitution for any other guarantee or security for the contractor given or to be given to SBI in respect of the said contract.

(ix) Any notice by way of request and demand or otherwise here under may be sent by post or any other mode or communication to the guarantor addressed as aforesaid and if sent by post it shall be deemed to have been given at the time when it would be delivered in due course of post and in providing such notice when given by post it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of SBI that the envelope was so posted shall be conclusive.

(x) These presents shall be governed by and constructed in accordance with Indian Law.

Notwithstanding anything contained hereinbefore the liability of the guarantor under this guarantee is restricted to a sum of Rs._____.

This guarantee will remain valid upto_____unless a demand or claim under this guarantee is made in writing on or before_____the guarantor shall be discharged from all liability under the guarantee thereafter.

Dated the ……

For (Name of Bank)

(Signature/s with designation/s of signatory/ies)
(Name and Stamp of Bank)

ANNEXURE-4.31: DETAILS OF INSURANCE POLICIES

Type of policies	Name of Insurance	Amount Rs.	Policy No.	Validity
CAR policy including 3rd party liability				
Workmen's Compensation				

Remarks :

1. This is only an 'on-account' payment and is not to be interpreted either as approval of work, materials brought or affixed at site or for that matter approval of any sort.

2. The quantum of work done and materials delivered at site have been certified by…….

3. should you wish to audit such work, kindly contact the undersigned and oblige.

Architects_____

ANNEXURE-4.32: SAFETY CODE

SAFETY MEASURES AT SITE:

1. All personnel at site should be provided with Helmets and Safety Boots with some Identification Mark. Visitors also should be provided with Helmets. It should be ensured that these are used properly.

2. First Aid Box should be kept at site with all requisite materials.

3. No one should be allowed to inspect / work at a height without Safety Belt.

4. Suitable scaffolds should be provided for workmen for all Works that cannot safely be done from the ground, or from solid construction except such short period Work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well as suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (¼ horizontal and 1 vertical).

5. Scaffolding or staging more than 3.5 meters above the ground or floors, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 Meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

6. Working platforms, Gangways, and Stairways should be so constructed that they do not sag unduly or unequally, and if the height of the platform or the Gangway or the Stairway is more than 3-5 Meters above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fenced, as described.

7. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 Meter.

8. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 Meters in length while the width between side rails in rung ladder shall in no case be less than 30cms for ladder up to and including Meters in length. For longer ladders this width should be increased at least 6mm for each additional 30 cms. Uniform step spacing shall not exceed 30 cms.

9. Adequate precautions shall be taken to prevent danger from electrical equipments. For electrical on line works gloves, rubber mats, and rubber shoes shall be used.
10. All trenches 1.2 Meters or more in depth shall at all times be supplied with at least one ladder for each 30 Meters length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1 Meter above the surface of the ground. The sides of the trenches, which are 1.5 Meters or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 Meters of the edge of the trench or half of the depth of the trench whichever is more cuttings shall be done from top to bottom. Under no circumstances

undermining or under cutting shall be done.

11. Before any demolition work is commenced and also during the process of the work :-

    a) All roads and open areas adjacent to the Work Site shall either be closed or suitably protected;

    b) No electrical cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.

    c) All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.

    d) All necessary personal safety equipment as considered adequate by the Site Engineer should be kept available for the use of the persons employed on the Site and maintained in a condition suitable for immediate use; and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.

    e) Workers employed on mixing Asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

    f) Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.

    g) Those engaged in welding works shall be provided with Welder's protective eye-shields.

    h) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

    i) When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into the manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals and boards to prevent accident to the Public.

12. Use of hoisting machines and tackle including their attachments, anchorage and support shall conform to the following standard or conditions:-

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

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

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

d) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or lowering or as means of suspension the safe working load shall be ascertained by adequate means.

e) Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

f) Motor, Gearing, Transmission, Electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should beprovided with such means as will reduce to the minimum the risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced.

g) When workers are employed on electrical installation, which are already energized, insulating mats, wearing apparel such as gloves, sleeves, and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

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

ANNEXURE-4.33: SAMPLE AGREEMENT WITH CONTRACTORS

ARTICLES OF AGREEMENT

This agreement made the ……day of .....between AGM/ DGM
(),State Bank of India,---------- (hereinafter called the Bank or SBI) which expression shall include
the successors and assigns) of the one part and M/s. ……... company / partnership for registered under the Indian Companies Act/ Partnership Act having its registered office…….……. (hereinafter called 'the Contractors' which expression shall include the present directors / partners and also the directors / partners from time to time as also their respective heirs, legal representatives, administrators and assigns) of the other part.

WHEREAS the employer is desirous of execution of_____**(Name of work)**_____

and has caused drawings and specifications describing the works to be done prepared by Project **Architects M/s**_____having their offices at_____(hereinafter called "the Architect")

AND WHEREAS THE SAID Drawings numbered as mentioned in the tender documents hereinafter mentioned and to be issued from time to time, the specifications and the Schedule of items and quantities have been signed by or on behalf of the parties hereto.

AND whereas the contractors have agreed to execute upon and subject to the condition set forth herein and Schedule of items and quantities, General & special Conditions of Contract, specification etc. contained in the tendered documents including all correspondences exchanged by or between the parties from the submission of tender till the award of work, both letters inclusive, (all of which are collectively hereinafter referred to as "the said conditions"). The works shown upon the said drawing and /or described in the said specification and included in the schedule of Items and Quantities at therespective rates therein set forth amounting to the sum of _____**Rs** _____(Rupees_____

inwords_____) as there in arrived at or such other sum as shall become payable there under (hereinafter referred to as " the said Contract Amount".

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said Contract amount to be paid at the times and the manner set forth in the said Conditions, the Contractors shall upon and subject to the said conditions execute and complete the work shown upon the said drawings and described in the said specifications and the schedule of items and quantities.

2. The employer shall pay the Contractors the amount or such other sum as shall

become payable, atthe times and in the manner specified in the said conditions.

3. The term “the Architect” in the said condition shall mean the said “M/s_” or in the event of their ceasing to be the Architect for the purpose of this contract for whatever reason, such other person or persons as shall be nominated for that purpose by the Employer, not being a person to whom the Contractor shall object for reasons considered to be sufficient by the Employer provided always that no person or persons subsequently appointed to be Architect under this contract shall be entitled to disregard or over rule any previous decisions or approval or direction given or expressed in writing bythe architect for the time being.

4. The said conditions and appendix thereto shall be read and construed as forming part of this agreement, and the parties hereto shall respectively abide by / submit themselves to the said conditions and perform the agreements on their part respectively in the said conditions contained.

5. The plans, agreement and documents mentioned herein shall form the basis of this contract.

6. This contract is neither a fixed Lump sum contract nor a piece work contract but is a contract to carry out the work in respect of the entire project on item rate basis to be paid for according to actualmeasured quantities at the rates contained in the schedule of quantities and rates or as provided in the said conditions.

7. The Bank / Employer reserves to itself the rights of altering the specifications and nature of work byadding to or omitting any item of work or having portions of the same carried out without prejudice to the contract.

8. Time shall be considered as the essence of this contract and the contractor here by agrees to commence the work soon after the site is handed over to him or from the 14th day after date of issue of formal work order as provided for in the said conditions of contractor whichever is later and to complete the entire work within (period of contract) months subject never the less to the provisions for extension of time.

9. All payments by the Employer under this contract will be made only at_____.

10. Any dispute arising under this Agreement shall be referred to arbitration in accordance with the stipulations laid down in the tender.

11. That all the parts of this contract have been read by the contractor and fully understood by the contractor. They further agree to complete the said work to fullest satisfaction of architect / Employer.

12. IN WITNESS WHEREOF the Employer and the contractors have set their respective hands to these present through their duly authorized official and the said two duplicates hereof to be executed on its behalf of the day and year first herein above written.

Signed on behalf of the	Signed on behalf of the
STATE BANK OF INDIA	CONTRACTORS
In the presence of :	In the presence of :

1. Signature :
Name :
Address :

In the presence of :
2. Signature :
Name :
Address :

1. Signature :
Name :
Address :

In the presence of :
2. Signature :
Name :
Address :

APPENDIX HEREIN BEFORE REFERRED TO

1) Name of the organization Offering Contract	: The Assistant General Manager, Admin office, GAO-2, State Bank of India, 4th floor, Sector 10B, Gandhinagar.
2) Consultants	: **ARCHITECT M/s. Mahesh Desai**
3) Site Address	: Admin office, Gandhinagar
4) Scope of Work	**:** Proposed Air conditioning Work of **MEHTAPURA BRANCH, HIMMATNAGAR.**
5) Name of the Contractor	:
6) Address of the Contractor	: **MEHTAPURA BRANCH, HIMMATNAGAR.**
7) Period of Completion	: within the stipulated period from the date of Issue of work order.
8) Earnest Money Deposit	: 4,900/-
9) Retention Money	: As per clause no. 1.4 of General Conditions
10) Defects Liability Period	: Twelve Months from the date of Virtual Completion.
11) Insurance to be undertaken by the	: 125% of Contract Value Contractor at his cost (Contractor's all risk policy)
12) Liquidated damages	: 0.5% of the Contract amount shown in the tender per week subject to max. 5%of the contract value or actual final bill value.
13) Value of Interim Bill (Min.)	**: NIL**
14) Date of Commencement	: From the date of work order issued to the contractor/ or the day on which the Contractor is instructed to take possession of the site whichever is earlier .
15) Period of Final Measurement	: 2 Months from the date of Virtual Completion Certificate (VCC) issued by

the project Architect

16) Initial Security Deposit : 2% including EMD

17) Total Security Deposit : 5.0% of the final bill amount or contract value

18) Refund of Total Security Deposit : 50% of the Security Deposit shall be refunded to the Contractor on completion of the work/along with the final bill and balance refunded only after the Defect Liability Period is over.

19) Period for Honoring Certificate : **7 days for R.A. Bills**

20) The final bill will be submitted by the Contractor within one month of the date fixed for completion work and the Bill shall be certified within 3 Months from the date of receipt of final bill provided the bills are submitted with all pre-requisite documents/test reports etc. prescribed in the tender.

_____

Signature of Tenderer.

Date:

LETTER OF DECLARATION

To,
The Assistant General Manager,
Admin office,GAO-2,
State Bank of India,4th floor , Sector 10B,
Gandhinagar.

Dear Sir,

PROPOSED AIR CONDITIONING WORKS FOR SBI, MEHTAPURA BRANCH, HIMMATNAGAR.

Having examined the terms & conditions, drawings, specifications, design relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of the works specified in the said memorandum and having acquired the requisite information relating thereto and affecting the quotation, I/We hereby offer to execute the works specified in the said memorandum within the time specified in the said memorandum on the item rate basis mentioned in the attached schedule and in accordance in all respect with the specifications, design, drawings and instructions in writing referred to in conditions of Tender, the articles of agreement, conditions of contract and with such conditions so far as they may be applicable.

MEMORANDUM

(a)	Description of work	Proposed Air conditioning works for **SBI, MEHTAPURA BRANCH, HIMMATNAGAR.**
(b)	Earnest Money	**4,900/-**
(c)	Time allowed for completion of work from the date of issue of work order.	**30** days from the date of commencement as per tender

Should this tender be accepted, I/we hereby agree to abide by and fulfill the terms and provisions of the said conditions of Contract annexed hereto so far as they may be applicable or in default thereof to forfeit and pay to SBI, the amount mentioned in the said conditions.

Should I / We fail to execute the Contract when called upon to do so I/ We do hereby agree that suitable action shall be initiated against us by SBI. This may also include debarring of my empanelment for a year or so.
We understand that as per terms of this tender, the SBI may consider accepting our tender in part or whole or may entrust the work of various jobs/buildings proposed (i.e. Institute Building, Staff Qtrs. And Director's Bungalow/ work) in phases. We, therefore, undertake that we shall not raise any claim/compensation in the eventuality of Bank deciding to drop any of the work/building/buildings from the scope of work of this tender at any stage during the contract period. Further, we also undertake to execute the work entrusted to us in phases as per L-1 rates/standard rates accepted by us/on our approved rates and within the stipulated time limit without any extra claim for price escalation as provided for in Clause 9.0.1 "Instructions to Tenderers" of this tender.
We, hereby, also undertake that, we will not raise any claim for any escalation in the prices of any of the material during the currency of contract/execution/completion period.

Yours faithfully,

Signature of contractor With Seal

PROFORMA FOR RUNNING A/C BILL

TABLE - XIII

i. Name of Contractor/ Agency :

ii. Name of Work :

iii. Sr. No. of this Bill:

iv. No. & Date of previous Bill:

v. Reference to Agreement No. :

vi. Date of Written order to commence:

vii. Date of Completion as per Agreement :

SN	Item Description	Unit	Rate (Rs.)	As per Tender		Up to Previous R.A. Bill		Up to Date (Gross)		Present Bill		Remarks
				Qty	Amount (Rs.)	Qty	Amount (Rs.)	Qty	Amount (Rs.)	Qty	Amount (Rs.)	
1	2	3	4	5	6	7	8	9	10	11	12	13

Note:

1. If part rate is allowed for any items, it should be indicated with reasons for allowing such a rate.

CERTIFICATE

The measurements on the basis of which the above entries for the Running Bill No. ---------- ---------- were made have been taken jointly on ---------- and are recorded in Excel format. Excel sheet enclosed

----------	----------	----------
Signature and date of Contractor	Signature and date of Architects Representative (Seal)	Signature and date of Site Engineer

The work recorded in the above-mentioned measurements has been done at the site satisfactorily as per tender drawings, conditions and specifications.

----------	----------
Architect	Signature and date of Site Engineer

TABLE – XV

MEMORANDUM FOR PAYMENT

R/A BILL NO.

1.	Total value of work done since previous bill (A)	Rs.....
2.	Total amount of secured advance due since Previous Bill (B)	Rs.....
3.	Total amount due since Previous Bill (C) (A+B)	Rs.....
4.	~~PVA on account of declaration in price of Steel, Cement and other materials and labor as detailed in separate statements enclosed.~~	~~Rs.....~~
5.	Total amount due to the Contractor	Rs.....
	OBJECTIONS;	
i)	Secured Advance paid in the previous R/A	Rs.....
ii)	Retention money on value of works as	Rs.....

	per accepted tenders up to date amount Rs.	
	Less already recovered	Rs.....
	Balance to be recovered	Rs.....
iii)	Mobilization Advance, if any	Rs.....
(a)	Outstanding amount (principal + interest) as on date	Rs.....
(b)	To be recovered in this bill	Rs.....
iii.	Any other Departmental materials cost to be recovered as per contract, if any	Rs.....
iv.	Any other Departmental service charges to be recovered if any, as per contract (water, power etc.) enclose statement.	Rs.....

The bill amount to Rs. ---------- (both figures and words) has been scrutinized by us after due checking of the measurements of work as required and is recommended for payment.

Date:----------

Signature of Architect with Seal

The bill amount to Rs.----------certified by Consultants has been scrutinized by me after due test checking of measurements of works as required and is recommended for payment for an amount of Rs.....

Date : ----------

STATUTORY DEDUCTION:

i)	Total Amount due (E)	Rs. ----------
ii)	Less I.T. Payable	Rs. ----------
iii)	Less S.T. Payable	Rs. ----------
	Net Payable	Rs. ----------

figures given in the Memorandum for payable has been verified and bill passed for payment ---------- (in words and figures)

Date:----------

----------Signature of CM (GB)

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS FOR VRF(Variable refrigerant Flow), HIGH WALL (SPLIT) AC UNITS & CASSATTE UNITS

2101	UNITARY REFRIGERATION EQUIPMENT	2101 / 01 - 03
2102	AIR DISTRIBUTION	2102 / 01 - 06
2103	THERMAL INSULATION	2103 / 01 - 08
2104	MAKES OF MATERIAL	2104 / 01 - 02M
2105	REFERENCE DRAWINGS	2105 / 01
3101	PRICE SUMMARY	3101 / 01
3102	SCHEDULE OF WORK	3102 / 01 - 05

2101 UNITARY REFRIGERATION EQUIPMENTS

01.00.00 **SCOPE**

01.00.01.1 The scope under this section shall cover the unitary refrigeration equipments such as window air conditioners, split units and packaged units.

02.00.0 STANDARDS

02.00.01 The following standards shall be applicable

a) IS : 4283 Hot air fans
b) IS : 8272 Industrial cooling fans
c) IS : 1391 Room Air conditioners
d) IS : 8148 Packaged Air conditioners
e) IS : 2997 Air circulator type electrical fan and regulator

03.00.00 **GENERAL REQUIREMENTS**

03.00.01 The unitary air conditioners shall include refrigeration compressor, drive motor, air cooled condensing unit, evaporator, refrigeration piping automatic control system enclosure etc.

03.00.02 The equipment assembly shall be well balanced to achieve minimum vibration and noise. The condensing unit mounted outdoor shall be suitable for the climate and atmosphere condition prevailing to avoid / minimize corrosion. Necessary anti corrosive treatments shall be provided for the metallic components.

03.00.03 The equipments shall meet the requirements indicated in the equipment data and shall meet the cooling load specified at the outdoor design data furnished and the distance / static head between the outdoor and the indoor units.

04.00.00 **EQUIPMENTS**

04.01.00 Assembled Units

04.01.01 The unitary air-conditioning units shall be of factory assembled and tested and of the following category as indicated on the drawing and bill of materials.

a) Window air conditioners having single unit to house compressor, condenser, evaporator refrigerant piping and control system.

b) Split air conditioners having compressor and condenser housed in one unit located outdoor evaporator and controls house in another unit located indoor.

Refrigerant piping and power / control wiring interconnecting condensing unit and evaporators laid externally.

c) Packaged air conditioners having compressor and control evaporated houses in one unit and located indoor and condenser housed in another unit located outdoor. The refrigerant piping and power/control cabling interconnecting condenser and the indoor unit laid externally.

04.01.02 The components for the various equipment assembly shall be as specified in the following section.

04.02.00 **COMPRESSORS**

04.02.01 The compressors shall preferably be hermetically sealed scroll / rotary permanently lubricated.

04.03.00 **CONDENSERS**

04.03.01 The condenser shall be air cooled consisting of copper coils with aluminum fins, propeller fan with motor, sheet steel enclosure with air inlet and exhaust louvers mounting frame, platform/ brackets etc.

04.03.02 The condenser and all its components shall be provided with suitable anticorrosive treatment. The enclosure shall be GI /Aluminum powder coated.

04.04.01 EVAPORATOR

04.04.02 The evaporators shall be ducted or non-ducted concealed or exposed as indicated in the drawing and bill of materials. The evaporators shall include copper coils with aluminum fins, expansion valve, centrifugal fan with motor return air filter, supply and return air grilles and louvers, automatic control panel with thermostat and enclosure. The enclosure for concealed unit shall be of GI powder coated whereas that for exposed units shall be of ABS plastic.

04.04.03 The filters shall be antibacterial washable and shall be of minimum 20 micron filtration. The filters shall be easily removable for cleaning without.

04.05.00 **CONTROLS**

04.05.01 The controls shall be automatic digital electronic LCD display having the following minimum requirements.

a) Automatic capacity control
b) Temperature and fan speed control with digital display
c) Timer control
d) Corded /corded remote control wherever specified.

04.05.02 The control system features shall be as shown below :

Sr. No.	Feature	Standard	Regular	Deluxe
1	Type of control	Unit Mounted	Remote	Remote
2	Type of Remote Control	Corded	Cordless	
3	Temperature Setting	Yes	Yes	Yes
4	Fan Speed Selection	Yes	Yes	Yes
5	Timer Control	Yes	Yes	Yes
6	Digital Display	Yes	Yes	Yes
7	Delayed Starting	Yes	Yes	Yes
8	Filter Cleaning Indicator	No	Yes	Yes
9	In built – ON /OFF	No	No	Yes
10	Quick Cooling Mode	No	Yes	Yes
11	Auto reset	No	No	Yes
12	Auto fan speed	No	No	Yes
13	Night set mode	No	Yes	Yes
14	Self Diagnosis	No	No	Yes

05.00.00 **SUPPORTS & PIPING**

05.01.00 **SUPPORTS & BRACKETS**

05.01.01 The equipment's shall be properly supported with brackets, hangers, platforms base frame etc. depending upon the type, location and capacity of the unit.

05.01.02 The supports shall be MS fabricated duly treated and painted for anticorrosion. The outdoor condensing units shall be properly supported on MS frame work/ platform properly grouted to the RCC Slab / brick walls using bracket.

05.01.03 The floor mounted packaged unit shall be provided with base frame and pedestals with necessary ant vibration pads. The ceiling suspended evaporator shall be supported using anchor fasteners and suspension rods. The wall-hung evaporators shall have GI stenciled back plate for mounting the unit, grouted to the wall/beam using anchor fasteners.

05.02.0 REFRIGERANT PIPING

05.02.01 The refrigerant piping shall be of half – hard copper RS 250 conforming to EN .1057 Table Y. The fittings shall be of shot end capillary brazing conforming to EN 1254. The pipes shall be supplied on coils and cut to required length to achieve fall length without joints between the condenser and evaporator.

05.02.02 The fittings for connection to the condenser evaporator expansion valve etc shall be through copper – brass composite fitting. The brazing / soldering material shall conform to EN. 29453.

05.02.03 Refrigerant copper piping SUCTION / IIQUID LINE to be insulated with 13mm electrometric Nitrite Rubber insulation. Aluminum foil membrane shall be applied to provide resistance against breakdown due to UV radiation for exposed portion of the Rubber Insulation. DISCHARGE LINE to be painted with epoxy / anticorrosive paint.
Refrigerant piping running along the partition wall shall be concealed in the wall with necessary chasing in the wall and closing the same with sand cement plastic with chicken wire mesh.

05.03.00 **DRAIN PIPING**

05.03.01 Providing and fixing in position the following pipes cut to required lengths with necessary drain trap and fittings with 6 mm nitrite insulation terminated at nearest drain point available for each Indoor unit - gravity flow

05.03.02 32 mm dia. Rigid (ISI marked) **CPVC** pipe. Duly Insulated with 6 mm elastomeric nitrite rubber

2102 AIR DISTRIBUTION

01.00.0 **SCOPE**

01.00.01 The scope under this section covers air distribution system consisting of:
a) Sheet metal ducting
b) Dampers & Air balancing
c) Grilles and diffusers

02.00.00 **STANDARDS**

02.00.01 The following standards shall be applicable:

a)	IS: 655	Metal air ducts
b)	IS: CP352	Mechanical ventilation and air conditioning in buildings
c)	IS: 2629	Recommended practice for hot-dip galvanizing of iron & steel
d)	SMACNA	Standard for low-pressure duct construction

03.00.00 **MATERIAL**

03.00.01 The material for sheet metal ducting shall be cold rolled sheets continuous galvanize with Zinc coating of total ***120*** gm per SQ.MT for conforming to IS: 277.

03.00.02 The gasket for duct joints shall be 3mm formed rubber or expanded polyethylene.

The bonding material shall be mastic sealant.

03.00.03 The duct flanges and supporting material shall be mild steel structure steel section.

03.00.04 All duct hangers shall be mild rod with full threaded with adjustable/lock nuts for leveling.

03.00.05 The material for various applications shall be as follows.

APPLICATION	**MATERIAL**
1. Ducting for Air-conditioning	Cold rolled sheets continuous galvanized with a zinc coating of ***120*** g/ sq.m conforming to IS : 277 a) Indoor – Class 4 b) Outdoor insulated-Class 4 c) Outdoor UN insulated-Class 3
2. Duct for ventilation & exhaust	– do –
3. Kitchen exhaust	C.R.C.A sheet
4. Supports & duct flanges	Galvanized Mild steel structural steel sections
5. Gasket	Nearopin rubber 3.2mm (1/8")
6. Bonding	Master sealant

03.00.06 All galvanized plain sheets shall be reasonably flat and free from twist. The zinc coating shall be clean, even and free from un galvanized spots. Sheets shall not crack or peel during bending or fabrication. All sheets shall be procured from approved manufactures.

04.00.00 **GENERAL REQUIREMENTS**

04.00.01 The sheet metal ducting shall be done for the proper distribution of air in air-conditioned/ventilated space. The ducting shall be designed on the basis of equal pressure drop and shall incorporate necessary accessories like reducers, bends, splitters, dampers and guide vanes for proper control and smooth air flow.

04.00.02 The selection of air diffusing attachments and their location shall be done to achieve uniform air distribution. The grilles and diffusers shall be painted M.S or aluminum as specified and shown on the drawing.

04.00.03 The ducting shall be supported by means of hangers from the ceiling slab using anchor bolts and shall not rest on the false ceiling.

04.00.04 Duct crossing walls and slabs shall be encased in wooden frame work and the openings shall be closed properly unless indicated on the drawing for the purpose of return air.

04.00.05 Volume control dampers of splitter or louvered type shall be provided as shown on the drg. Additional dampers if req. shall be provided for proper balancing of the air distribution system.

04.00.06 Fire dampers shall be provided at the AHU outlet and return air inlet to the Air Handling Equipment/room Additional fire dampers shall be provided as per the codes of local fire authorities.

04.00.07 Access door shall be provided adjacent to the fire, splitter and louvred dampers.

04.00.08 Air outlets shall be selected based on the air quantity, throw and aerodynamic noise power not exceeding NC 30.The location size and shape of the air outlets shall be co-ordinate with interior and false ceiling scheme.

05.00.00 **DUCT FABRICATION**

06.00.01 Duct shall be rectangular or circular as indicated on the drawings. The Duct shall be made of either galvanized steel sheet as specified in the BOQ and conform to IS:655. The galvanized steel sheet shall conform to IS:277. Aluminum sheet shall confirm to IS:737. The duct construction shall be as follow:

(A) Rectangular Duct Construction:

MAX.SIDE Mm	**THICK.GSS sheet**	**TYPE OF JOINT**	**BRACKING**	**BRACKIN (S.W.G)**
Up to 750	24G	25mm GSS Flanges		

751 To 1500	22G	25mm X 3mm Ms angle flange	25mm X 3mm Ms Angle
1501 To 2250	20G	40mm X 3mm ms angle flange	40mm X 3mm ms angle at 1.24 center
2251 & above	18G	50mm X 3mm ms angle flange	50mm X 3mm ms angle at 1.24 center

(B) Hanger for Duct:

Duct Size Mm	Spacing Not exceeding m	Size of ms angle mm X mm	Size of Rod Dia. mm
Up to 750	2.5	25X25X3	**8**
751 to 1500	2.5	40X40X3	**10**

05.00.04 The companion flanges and girth angles shall be metered and Welded at corners and riveted to the duct at 75mm centers. The longitudinal seams shall be inside groove or pits burg type. The Flanged joints shall be made air tight with 3mm rubber or 6mm felt gasket and secured with10mm GI bolts at 150mm centers. Ducts shall not be cross-broken, if insulated. The seams and joints shall be rendered air tight with mastic sealant.

05.00.05 The elbows shall have a minimum R/D ratio of 1:3. The elbows of R/D rate of less than 1:3 and square elbows wherever provided due to Site condition, shall be with equally spaced guide vanes for smooth flow. Splitter dampers shall be provided for all branch splits. All branches, feeding More than two outlets shall be provided with control dampers.

05.00.06 Capped airflow connections shall be provided, wherever shown, for testing and balancing of air distribution.

06.00.0 DAMPERS & GUIDE VANES

06.00.01 The GUIDE VANES shall be provided as shown below:

a) At every non-split branch take off
b) At every bend/elbow of less than 1.3 R/D ratio
c) At first 4 collars after the fans and first two collar after every bends.

The vanes shall be double walled and properly curved for smooth air flow and change indirection of flow and shall be fabricated out of 0.8 mm GI sheets. The vanes shall be fixed to the side runners at equidistant and riveted/bolted to the ducts.

06.00.02 The SPLITTER DAMPERS shall be double walled aerofoil blade fabricated out 1.6mm (16 SWG) GI sheet. The damper shall be complete with flanged sheet metal enclosure to suit the upstream and downstream duct connections, hinge at the downstream and operating road at the upstream end. The GI enclosure shall be one size thicker than the upstream duct.

06.00.03 The LOUVRED DAMPERS shall be multi blade aerofoil construction with opposed/parallel blades of maximum 250 x 1200 mm size. The blades shall be mounted on 50mm channel with suitable gang operated linkage and operating rod. The operation rod shall be terminated in a locking quadrant with position indicator.

06.00.04 The FIRE DAMPERS shall be rated for 2 hrs. fire resistance conforming to BS : 476-1 and CP-413 and shall be housed in a GI sheet enclosure flanged at both ends and shall include the damper blades, fusible link, holding spring, manual adjustable handle etc.

The material for fabrication of fire dampers shall be as shown below:

a) Damper blades - 3mm (10 SWG) Galvanized sheet steel
b) Casing - 2mm (14 SWG)
c) Bearing – Sintered
d) Spring - SS 304
e) Fusible link - Set for 7 deg C fusing temperature

06.00.05 All dampers larger than 1200 mm width shall be fabricated in multiple sections.

The damper rods shall be MS epoxy coated with bronze bushes at one end and locking quadrant with damper position indicator at the other end. The damper rods shall extend beyond the enclosure frame and insulation wherein provided.

06.00.06 The access doors for dampers shall be 400 x 400mm steel bolted with rubber gasket.

07.00.00 **AIR OUTLETS**

07.00.01 The air outlets shall be grille or diffuser type as indicated on the drawing. The grilles and diffusers shall be MS painted, aluminum or aluminum powder coated as shown on the drawing and schedule of material.

07.00.02 Supply air grilles shall be double deflection type with horizontal face bars and vertical rear bars placed in a rigid marginal frame. Bars shall be shaped and spaced at 18mm centers with swaged pivot pins positively holding the defections setting under all conditions of velocity and pressure. All grilles shall be provided with integral opposed blade, grille face kept-operated dampers.

07.00.03 Return grilles shall have fixed face bars shaped and set at 18mm centers. Bars shall be set at 5degree deflection for vision proof installation. The grilles shall be complete with rigid marginal frames and shall be matching with the supply grilles.

07.00.03.1 Ceiling diffusers shall be round/square/rectangular face flush type horizontal air Diffusion pattern. Diffusers shall have ample margins to minimize ceiling smudge.

Half diffusers shall be provided with face operated volume control dampers. Half diffusers shall be similar to full diffusers.

07.00.03.2 All MS grilles and diffusers shall be fabricated out of 1.0mm mild steel and painted with two coats of red oxide. All duct collars terminating on to a grille or diffuser shall be given two coats of black paint for a length of 300mm.

07.00.06 GSS Aluminum grilles and diffusers wherever specified shall be of extruded aluminum with margins & butterfly dampers. Grilles shall have horizontal face bars only.

07.00.04 Linear diffusers/grilles shall be die formed, flush mounted type with single or double directional airflow. The diffuser/grille shall be in a frame with minimum 20mm margin. All linear air diffusing equipment shall be fitted with a distribution sheet metal plenum as shown on the drawings.

08.00.00 **AIR INTAKES & EXHAUST OUTLETS**

08.00.01 The outside air intakes and exhaust air outlets shall consists of louvers, bird screen and enclosure, the total assembly fitted into wall with clear opening and the edges sealed with mastic sealant.

08.00.02 The sheet metal enclosure shall be made out of 1.25mm GI sheets flanged at both ends and with minimum 4 hold fast. The enclosure shall be minimum 250mm long or 100mm more than the width of the wall.

08.00.03 The louvers shall be 100mm wide mounted at 45 deg. and spaced at 100mm centers and shall be fabricated out of 1.25mm GI sheets.

08.00.04 The bird screen shall be made out of 15 x 15mm 1.0 mm GI wire mesh inset with 0.8mm GI frame & bolted to the enclosure flange at 150mm centers using 12mm MS brass bolts and nuts.

09.00.00 **INSTALLATION**

09.00.01 The ducts shall be supported at the traverse joints as indicated below :
a) Up to 1800 mm 40 x 40 x 3mm M.S angle with 10mmtie rod
b) 1850 to 2500 mm 40 x 40 x 6mm M.S angle with 10mmtie rod
c) 2550mm and above 50 x 50 x 6mm M.S angle with 10mmtie rod

09.00.02 Additional supports wherever considered necessary by the Engineer - in-charge shall be provided. Supports shall be taken from steel members grouted in the
RCC work and fixing of steel members shall involve minimum damage. The entire supporting system shall be meet with the approval of the Engineer-in-charge.

09.00.03 All duct supports, flanges; hanger shall be given two coats of red-oxide before installation and one coat of aluminum paint after erection.

09.00.04 Where ducts are connected to the wall, such connections shall be made through mild steel frame fixed to the wall through suitable shear fasteners.

10.00.00 **INSTALLATION**

10.00.01 The ducts shall be routed as shown on the drawing or as instructed. Working drawing shall be got approved before taking up the fabrication and erection.

10.00.02 Ducts connecting to air moving apparatus shall be through 15 OZ mildew resistant double canvases directed by the Engineer. On all circular spigots the flexible material is to be screwed or clip band with adjustable screw or toggle fitting. For rectangular ducts the material is to be flanged and bolted with a backing flat or bolted to mating flange with backing flat. The flexible connection shall not be less than 75mm and not more than 200mm.

11.00.00 **TESTING & BALANCING**

11.00.01 The entire air distribution shall be adjusted and balanced for delivery of design air quantities or as required for achieving design space conditions. After all adjustments are made, the air readings shall be recorded on the drawings vis-à-vis the space conditions. All dampers after adjustment shall be set and locked in position. All air and static pressure measurements shall be done through problem type meters. Vane type meter readings are not considered reliable.

2103 THERMAL INSULATION

01.00.0 SCOPE

01.00.01 The scope under this section covers thermal insulation of pipes, ducting, roof and walls.

02.00.0 STANDARDS

02.00.02 The following standards shall be applicable:

a) IS: 7240 COP for application and finishing of thermal insulation material at temp. between 80degree C to 40 degree C.
b) IS: 7413 COP for application and finishing of thermal insulation material at temp. between 40degree C to 700-degree C
c) IS: 10556 COP for storage and handling of insulation material
d) IS: 3346 Method of determination of thermal conductivity of thermal insulation material
e) IS: 3690 Specification for glass wool mats for thermal insulation
f) IS: 4671 Specification for expanded polystyrene for thermal insulation purposes
f) IS: 8183 Specification for bonded mineral wool
g) IS: 702 Specification for industrial bitumen

03.00.01 GENERAL REQUIREMENTS

03.00.02 The material and thickness for insulation shall be as specified and shown on the bill of material.

The thermal conductivity and the equivalent thickness of insulation shall be as shown below:

SL.NO.	MATERIAL	DENSITY	K VALVE	EQUIVALENT THICKNESS			
		Kg/ cum	w/ mk	mm	mm	mm	mm
1.	Resin bonded glass wool	32	0.037	125	100	50	30
2.	Expanded polystyrene TF-quality	18	0.0326	100	75	50	25
3.	Expanded polyurethane	32	0.025	80	40	40	20
4.	Rigid phenol foam	32	0.022	70	50	25	20
5.	Resin bonded mineral wool	48	0.041	125	100	60	30
6.	Expanded	30	0.035	100	75	80	30

polyethylene foam

03.00.03 The insulation, bonding and the vapor barrier shall be suitable for the temperature of the surface to be insulated and the location.

03.00.04 All wooden bittern and plug used shall be teak wood ant termite treated with 3 coats of Shalimar clear liquid. All screws shall be of GI, brass or powder coated.

03.00.04 All surfaces to be insulated shall be thoroughly cleaned and dusted before applying the insulation and bonding material. The bonding material shall applied to both surfaces to be bonded.

03.00.05 The pipe insulation shall be carried out using performed circular/semicircular pipe sections of internal diameter matching the external diameter of the pipe.

03.00.07 Air pocket between the surface and insulation or between insulations shall not be acceptable. All joints shall be staggered and filled with bonding material.

03.00.08 Minimum 50mm overlapping shall be provided for joints in vapor barrier and cladding.

04.00.00 **MATERIAL**

04.00.01 The material for cold insulation shall be as shown below:

a) Fire inhibiting expanded polystyrene of density 18 kg/cum having thermal Conductivity not exceeding 0.035 w/mk at 10 deg. C mean temperature conforming to IS : 4671
b) Expanded polyurethane foam of density 32 kg/cum having thermal conductivity not exceeding 0.025 w/mk at 10 deg. C mean temperature conforming to Specification.
c) Rigid phenol foam of density 32 kg/cum having thermal conductivity not 0.022 w/mk at 10 deg. C mean temperature conforming to BS: 3927 with 50 micron aluminum foil fixing.
d) Expanded polyethylene foam of density 30 kg/cum having thermal conductivity not exceeding 0.035 w/mk at 10C mean temperature.

04.00.02 The material for hot insulation shall be as shown below:

a) Resin bonded glass wool of density 32 kg/cum having thermal conductivity not exceeding 0.037 w/mk 60 deg C mean temperature

b) Expanded polyurethane foam of density 32 kg/cum having thermal conductivity not exceeding 0.025 w/mk at 10 deg. C mean temperature conforming to BS specification.

c) Rigid phenol foam of density 32 kg/cum having thermal conductivity not exceeding 0.022 w/mk at 10 deg. C mean temperature conforming to BS: 3927 with 50 micron aluminum foil fixing.

d) Resin bonded mineral wool of density 48 kg/cum having thermal Conductivity not exceeding 0.041 at 10 deg C mean temperature conforming to IS : 8183 with 50mm.

04.00.03 The material for fixing vapor barrier and other material shall be as shown below

a) BONDING MATERIAL
I) Industrial bitumen-85/40 and 85/25 conforming to IS:702.
ii) GI chicken wire mesh - 20 mm 24 SWG
iii) PRX compound
iv) 18 SWG GI binding wire

b) VAPOUR BARRIER
I) Aluminum foil 50 micron.
ii) Aluminum cladding 28 SWG for pipe and 6 SWG for wall
iii) 2mm PYPKOTE with aluminum foil finish for surface exposed to the weather.
vii) 4mm PYPKOTE polymeric corrosion tape for anticorrosion treatment for underground.

c) FIXING MATERIAL
I) Bituminous wood balk 50 x 50mm thick insulation and50 x 100 up to 150mm th. insulation
ii) GI brass or powder coated.

05.00.01 INSULATION THICKNESS

05.00.02 The thickness of insulation and the cladding material for various utilities shall be as specified under each section.

1. REFRIGERANT PIPING

05.02.01 The refrigerant piping shall be of half – hard copper Rs 250 conforming to EN .1057 Table Y. The fittings shall be of shot end capillary brazing conforming to EN 1254. The pipes shall be supplied on coils and cut to required length to achieve fall length without joints between the condenser and evaporator.

05.02.02 The fittings for connection to the condenser evaporator expansion valve etc shall be through copper – brass composite fitting. The brazing / soldering material shall conform to EN. 29453.

05.02.03 The refrigerant lines shall be insulated with 9mm Nitride rubber tubing to prevent heat loss and condensation.

Refrigerant piping running along the partition wall shall be concealed in the wall with necessary chasing in the wall and closing the same with sand cement plastic with chicken wire mesh.

05.03.00 **DRAIN PIPING**

05.03.01 The evaporator shall be piped to the nearest drain point / drain line using **CPVC** pipe conforming to relevant I.S. codes. Necessary water seal trap shall be provided at the evaporator at the discharge point.

05.03.02 Condensate from the evaporator unit shall be drained through properly installed drain piping designed to prevent any accumulation of condensate in the drain pan.

05.03.03 Drain piping shall be made of 1.1/4" & 1 1/2" rigid UPVC pipe of kg/cm2 pressure rating with water tight threaded connection, leading from the room unit to a suitable drain point. Complete drain piping shall be made leak proof and water tight by means of precise installation and the use of leak proof sealant / adhesives. Insulation of drain piping by expanded polyethylene.

07.00.01 INSULATION OF DUCTING

07.00.02 THERMAL

Supply or Return air duct shall be insulated with 75 / 50 / 25 / 13 mm thick Nitrite "O" class. The nitrite insulation shall be of factory packed Aluminum foil.

Method of applying the insulation:-

Clean the duct surface to be insulated.

Apply a thin layer of Tar paint of Shali coat / Ticky tar.
Apply a thin coat of hot bitumen to stick the insulation.

Fix the insulation of specified thickness over the surface of the duct tightly and seal the joints with using BOPP tape.

Secure the insulation with 16 Gauge G.I. wire or 10mm PVC box strapping at a distance of 300 mm.

07.00.03 ACOUSTIC

Supply and fixing of acoustic lining inside sheet metal ducts with **12.5** / 25 mm thick resin bonded fiber glass insulation of density ~~32 /~~ **48** Kg/cub.mtr after applying two coats of setting adhesive and covered with fiber glass tissue paper and finished with 0.6mm perforated aluminum sheet and reinforced with GI fasteners complete as required.

07.00.04 Method of applying the insulation: -

Apply a thin layer of Tar paint of Shali coat / Ticky tar.

Fix-up fiberglass slab.
Cover-up with R.P. Tissue and perforated aluminum sheets with the help of G.I. screw washer.

08.00.00 **CEILING/WALL INSULATION**

08.00.01 The ceiling/wall insulation shall be as shown below:

SL.NO.	SURFACE	LAYER X THICKNESS	MATERIAL	CLADING
1.	Exposed concrete roof	1 x 50	Expanded	Plaster

			Polystyrene	
2.	Over exposed concrete roof	1 x 30	Polyurethane Foam	By others
3.	Exposed GI or ACC roof	1 x 75	Expanded Polystyrene	A/c sheet
4.	Exposed wall	1 x 50	Expanded Polystyrene	Plaster by others
5.	False ceiling	1 x 50	Resin bonded glass wool	Fibre glass tissue

14.00.00 **RCC ROOF**

14.00.01 The thickness of insulation required is 50mm expanded polystyrene unless otherwise specified.

14.00.02 Make wooden frame work at 600 to 750 mm centers on ceiling slab by fixing 50 x 50 wooden battens using 75mm long wooden screws and self expanding nylon tumbles. Clean the surface of slab and apply 3mm high softening grade R 85/25 bitumen. Apply one coat of bitumen on the bonding surface of the insulation and press against the slab till the bonding is achieved.

14.00.03 Fix 18 SWG 100 x 100 mm GI washers at the junction of the wooden framework and made GI melting in cross binding pattern to hold the insulation.

14.00.04 The insulation provided above false ceiling and non visible areas need not have clading unless otherwise specified. The insulation provided in the visible areas shall be plastered by other agencies after providing chicken wire mesh.

15.00.01 WALLS

15.00.01.1 The thermal insulation for the walls shall be similar to RCC slab. The thermal insulation shall be provided on West, North West and East side exposed walls, if specified.

16.00.01.1 GI OR ACC ROOFING

16.00.02 The thickness of insulation required is 120mm resin bonded glass wool unless otherwise specified.

16.00.03 Weld 25 x 3 x 130mm M.S flats with 6mm hole at the free end to the purloins at intervals not exceeding 750mm. Apply 3mm bitumen to the roofing material and one coat to the insulation. Press the insulation against the roof till the bonding is achieved.

16.00.03 Make GI melting in cross bind pattern to hold the insulation. Clad the insulation with FRP tissue sheet or aluminum foil applying bitumen on the insulation as well as the clading material.

16.00.04 Care shall be taken the close all openings especially for corrugated sheets to ensure stoppage of hot air through the opening/corrugation space place ACC sheet, if required, shall be provided below the insulation to avoid entry of heat and to hold the insulation in position. The ACC sheets shall be considered as separate item unless otherwise indicated in the bill of material.

2104 MAKES OF MATERIAL

01.00.0 **SCOPE**

01.00.01 The scope of this section covers the recommended makes of equipments, material components. The final choice of makes shall be indicated at the time of finalization of the order.

01.00.02 The makes of material offered by the contractor shall be indicated at the space provided for proper evaluation of the offer and shall be one of the recommended makes. In the absence of such indication, the decision rests with the Consultants/Clients.

01.00.02 For items, make are not recommended contractor shall obtain approval from Consultant prior to procurement.

02.00.00 **MAKES RECOMMENDED**

02.00.01 The makes of material recommended are as shown below. The offers shall be strictly on the basis of the makes underlined. However, the bidders can offer alternative makes under section deviation. Such deviation shall follow with technical literature of the material/equipment offered.

2105 REFERENCE DRAWING

01.00.0 **SCOPE**

01.00.01 The Scope under this section covers the basic drawings and details to understand.

a) Scope of work
b) Location of equipments
c) General idea on the entire installation
d) Material requirements and labor force required for the completion of work in the stipulated time schedule.

01.00.02 The reference drawings are basically schematic/diagrammatic to give idea on general requirements prepared on the basis of preliminary requirements and data available. They are subject to undergo changes and modifications subject to the finalization of details and requirements of the clients.

01.00.03 The detailed working drawings and the drawings required for the submission to statutory authorities shall be the responsibility of the contractor. Contractor shall submit minimum four copies of the drawings to the Consultants for their scrutiny/approval before issuing to the statutory authorities and site for execution.

NOTE: **This specification is of the general type only and must be used in conjunction with the drawing of the particular item being made. Anything shown on the drawing and not in the specification must be compiled with, and vice versa.**

SPECIFICATION:

SAFETY CONSIDERATIONS

Installation, start-up and servicing of the equipment can be hazardous due to system pressures, electrical components and locations of equipment (roofs etc.).

Only trained, qualified installers and service mechanics should install start-up and service this equipment. Trained service personnel should perform all operations except basic maintenance.

When working on the equipment, follow all safety codes. Use proper tools, tackles and necessary instruments. Use safety glasses, gloves, boots, valves and regulators etc. Be sure power to the equipment is off before performing maintenance or service.

INSTALLATION:

PRE-DELIVERY INSPECTION

This applies to the condensing and indoor units both.

1. Open packing carefully ensuring unit in ‘upright’ position.

2. Check the unit thoroughly for dents, paint discrepancies, fins damage, pinching of tubes etc. Check coil / copper tubes for any dents, pinching or cuts, especially near tube sheets. Ensure all parts / components, electrical wiring and connections are visibly in order.

3. Rotate fan / blower for any bearing or touching noise.

4. Check and test fans / blower as per the rated supply for Indoor and Outdoor if possible.

5. Check coil and piping for leaks.

6. If any damage is found, rectify / take the necessary action and repack the unit in 'upright' position.

RIGGING

These units are designed to be handled by forklift trucks or crane. Use the unit skid for placing on terrace the forks of the lift-truck or by using crane.

PLACEMENT

Outdoor Units are shipped mounted on wooden members & Indoor unit packed in carton box. These should be removed only when the unit is in its final position.

LOCATION AND MOUNTING:

A. CONDENSING UNIT

Location

Locate the unit so that airflow through the condenser coil is unrestricted. Provide clearance for wiring and piping. There should be ample space for service requirements.

Install the outdoor unit in well-ventilated space. The unit should be installed in a location so as to minimize refrigerant and drain pipe length.

Mounting

The unit should be mounted to prevent corrosion of sheet steel base on

(a) Prefabricated angle iron frame, and minimum 200 mm raised PCC blocks

These should be designed to take care of vibratory operating loads.

Placement area must be level and strong enough to support operating weight of the unit. Check that the unit is mounted level to ensure proper oil return to compressor.

Units mounted on walls must be provided with a platform having space for service (if otherwise not easily accessible for service).

B. INDOOR UNIT

Location
These units are designed especially for applications where units & piping are above the false ceiling.

Locate unit ensuring adequate space for supply / return air, service purposes and connections.

The location of the unit should be such that there is no ingress of fresh air as this would cause condensation / sweating. Location should be near a drain point for easy drainage, and in a location to simplify refrigerant piping.

Pipe Routing

Liquid line should be suitable for flare connection & Suction line is suitable for brazed connection. Adaptors are given on Suction line & Discharge line in outdoor Unit for refrigerant charging and evacuation operations. Flare connections are provided because they allow easy connection / disconnection / reuse without additional piping / brazing work.

Indoor units have connection suitable for brazing in suction line and quick lock valve in liquid line. Start refrigerant piping from outdoor unit first and connect indoor unit last. Run the piping along walls / floors or on wooden beading with saddle / clamps and boxed up for protection. Clamp and run pipes neatly and straight using unlamented good

copper tubing.

The pipes should run as straight as possible, avoiding unnecessary turns and bends. for other length, pipe sizes. Extra refrigerant charge for extra pipe length should be considered. If brazing is done to connect two tube lengths, it should be carried out using proper flux and brazing rod (7.25% Phosphorus, rest copper) with a constant purge of nitrogen through the piping to maintain a clear system.

All connections must be leak tight.

Clamping

Clamping is necessary to prevent vibrations from being transmitted. When passing the pipes through walls, opening should be sealed to minimize vibration transmission. Some slack in pipes between structure & unit should be left.

Insulation

Insulate Suction & liquid line properly. This is necessary safety. Use tubular foam of for liquid line and for Suction line. As specified in Insulation specs.

FIELD ELECTRICAL CONNECTIONS:

Do the field wiring as per wiring diagram. Never bypass any electrical protections provided in the unit. Recommended wire size for main power supply cable is 4 core 6 mm2 Copper.

Unbalanced 3 -phase supply voltage
Never operate unit when supply voltage unbalance is more than 2%.
% Voltage unbalance = (Max. voltage deviation from avg. voltage) / (avg. voltage) x 100

PRE-PRESSURE TEST:

However, in case of leaks in the refrigerant circuit or breaking of joints etc., the valves have to be back seated and the entire system of indoor and outdoor units with piping has to be pressure tested, evacuated and charged.

After pressurizing the system, do the following:

SOAP TEST:

Apply soap solution at all flare connections and brazing point. If bubbles appear at some points, then tighten the flare nut or braze the leaking points (after releasing the gas from the system). No bubbles should finally appear.

PRESSURE DECAY TEST:

After soap test, note the pressure and leave the system pressurized for 30 minutes. Note the pressure again. There should be no pressure decay, recheck for leaks, remove them and do the pressure decay test again.
CHECK PRIOR TO START-UP:

Do not attempt to start the unit following steps have been completed:

1. Check that unit is properly located and mounted.

2. Check that piping has been done as per the recommended practice.

3. Check that the insulation is adequately sized and properly applied on the piping.

4. Check that condensate drain pipe has been properly installed and insulated.

5. Be sure there are no refrigerant leaks.

6. Check the refrigerant standing pressure with a pressure gauge connected on the liquid valve gauge port. Check if the charge is complete with R-22 charged.
7. Check tightness of all electrical connections.

8. Check the protective device (MCB or fuse switch) from which the supply is given to the unit.

9. Electrical power supply must agree with unit nameplate rating. Check that field wiring electrical switches and voltage stabilizers (in the case of low voltage power supply) are properly sized for the unit. Check and ensure that 3-phase voltage unbalance is less than 2%.

START-UP AND OPERATION:

Actual start-up / full-fledge d testing should be done only under supervision of a qualified person.

1. Make main power connections. If reverse phase indication is there on the Display Panel, then interchange two of the phases. Make sure display panel shows healthy supply.

2. Switch on the ON/OFF switch of the controls; the unit will start on its previous setting.

3. In this Wiring 'HP'& 'LP' are in series when either of two is removed wire from the electrical panel. Compressor, Evaporator Blower fan will go off simultaneously. '& Display Panel will show 'HP/LP'. Please check to ensure its HP and LP working.

4. Run unit according to Remote Control features as described.

SPECIFICATIONS

VARIABLE REFRIGERANT FLOW (VRF) SYSTEM:

The system shall be air-cooled, direct expansion type central air conditioning system consisting of one Variable Refrigerant Flow Condensing unit (Outdoor Unit) and one or more Evaporator (indoor) units. The condensing unit shall be located on the building terrace ensuring unobstructed airflow.

The evaporating units are selected to suit the cooling load of the area to be air conditioned.

The condensing unit shall be capable of assessing the requirement of liquid refrigerant volumetric flow of each evaporating unit at all times by means of a sophisticated sensors & microprocessor controller and generating the required total volume of refrigerant liquid for supply to each evaporator units.

Factory-assembled Outdoor condensing unit should be with hermetically sealed scroll / twin rotary type fixed speed compressor in combination with compressor having Inverter type Refrigerant flow control technology, air cooled draw through type condenser coil of copper tubes mechanically bonded to aluminum fins, low noise axial fan (not more than 60dB), safety and high/low pressure cut outs, weather proof housing constructed from galvanized powder coated steel, an efficient oil separation system for stable operation with long refrigerant piping,

Vendor to furnish the details of expected oil carry over/return system.

Condensing Unit (Outdoor Unit)

The condensing unit shall be capable of assessing the requirement of liquid refrigerant volumetric flow of each evaporating unit at all times by means of a sophisticated microprocessor controller and generating the required total volume of refrigerant liquid for supply to the evaporator units.

The condensing unit shall be a factory-assembled unit housed in a sturdy weatherproof casing constructed from rust proof galvanized powder coated steel panels. The noise level of the unit shall not be more than 70dB (A) measured horizontally 1 m away and 1.5 m above base level.

The compressors shall be hermetically sealed scroll type and inverter driven variable speed type, capable of changing the capacity in accordance to the cooling load requirement.
The condenser coils shall be constructed out of copper tubes mechanically bonded to aluminum fins. The surface of the condenser coil shall be coated with suitable chemical coating to prevent deterioration due to coastal climate.
All necessary safety devices shall be provided to ensure safe operation of the system.

Unit should be equipped with a highly efficient oil separation system to ensure stable operation with long refrigerant piping.

The VRF condensing unit shall be located in open on a terrace with adequate clearance from nearby objects to ensure unobstructed air flow and easy approach for maintenance.

Indoor Units (Evaporating Units):

Each unit shall be selected as the requirement of the cooling load and interior layout in the respective space to be air-conditioned. The unit shall be equipped with an electronic expansion valve, which can communicate with the VRF controller in the condensing unit. Wall /Ceiling suspended evaporator unit having 3 or 4 rows deep cooling coil, low noise centrifugal supply air fan with external static pressure capacity up to 40 mm, insulated casing, insulated drain tray, easy to clean return air filter low noise and vibration free operation.

The cassette unit should be serviceable from bottom & should have built-in drain pump having maximum drain lift of 60cm. Each unit will have a fresh air port to draw fresh air through connected flexible duct opened to atmosphere.

Each unit shall be equipped with electronic expansion valve, cord/cordless type Remote Control to maintain & set room temperature & other parameters. Option of centralized, individual & group control should also be provided.

The fan shall of the dual suction multi blade type and statically and dynamically balanced to ensure low noise and vibration free operation.

Each indoor unit shall be equipped with corded / cordless local control unit for setting the operating parameters. The address of the indoor unit shall be set automatically in case of individual and group control. Option of centralized control should also be achievable.

Controls shall be provided to maintain the set room temperature within close tolerance limits.

Air Cooled Type DX (Non-VRF) Units:

The condensing unit shall consist of compressor, condenser coil & fan, refrigerant piping, refrigerant controls, local control panel, control wiring etc., all assembled in a weather proof powder coated cabinet in compact layout.

Cabinet shall be fabricated out of heavy gauge galvanized sheet steel properly formed for closet fit and structural rigidity. All access panels shall be so constructed as to be quickly and easily removable. All sheet metal surface shall be finished in baked enamel paint or powder coating. Cabinet shall be fully insulated for acoustic insulation.

Air-cooled condenser coil shall be made from copper tubes and aluminum fins bonded to the tubes. Condenser fans shall be propeller type. The entire air-cooled condensing unit shall have sheet metal housing suitable for outdoor installations.

Compressor shall be of the hermetic scroll type or rotary type, with suction and discharge valves, gas cooled motor, horizontal or vertical shaft balanced and mounted on vibration absorbers to provide quiet, free floating operation. Compressor shall be provided with overload protection and single phasing protection.

Interconnecting Refrigerant Piping & Wiring:

The refrigerant piping interconnecting to indoor & outdoor units shall be of copper and shall be joined by brazed type joints. Refrigerant pipes shall be insulated as per specification. Wiring interconnecting the indoor and outdoor unit shall be done with PVC insulated copper conductor flexible wires of appropriate rating.

The set of two refrigeration lines and the wires shall be bundled together.
All pipe supports/clamps shall be painted with red oxide primer followed by 2 coats of synthetic enamel finish paint.
The piping and wiring shall be laid such that it does not spoil the aesthetics of the premises, and is safe, secure and approachable for repair/replacement.

Supports & Brackets

The equipment's shall be properly supported with brackets, hangers, platforms, base frame etc. depending upon the type, location and capacity of the unit.

The supports shall be GI slotted angle and GI threaded rods. The outdoor condensing units shall be properly supported on MS duly painted with anti-corrosive rubber paint frame work / platform with anti-vibration rubber pads on PCC blocks or properly grouted to the RCC Slab / brick walls using bracket.

The ceiling suspended evaporator indoor units shall be supported using anchor fasteners and GI threaded suspension rods. The wall-hung evaporators shall have GI stenciled back plate for mounting the unit, grouted to the wall / beam using anchor fasteners.

Drain Piping

The drain piping shall be made out of rigid UPVC pipes of 10 Kg/cm2 class. The piping shall be supported by clamping on MS angle 25mm x 3mm running continuously below the pipe.

The drain pan shall be connected to rigid UPVC pipe by braided UPVC flexible pipe with appropriate adapters.All pipes support/clamps shall be painted with red oxide primer followed by two coats of synthetic enamel finish paint.

Piping Insulation

All Refrigerant piping shall be insulated with 19 mm Thick Closed cell elastomeric Nitrile Rubber Insulation. Drain piping shall be insulated with 6mm Thick Nitrile Rubber or Polystyrene Insulation.

Insulating material in tube form shall be sleeved on the pipes. On piping, slit opened tube from insulating material shall be placed over the pipe and adhesive shall be applied as suggested by the manufacturer. Adhesive must be allowed to tack dry and then press surface firmly together starting from butt end and working towards centre.

Measurement of Insulation

Piping insulation will be measured as per length of the pipes.

STANDARDS

The following standards shall be applicable for equipment

a) IS : 4283 Hot air fans
b) IS : 8272 Industrial cooling fans (man coolers)
c) IS : 1391 Room Air conditioners
d) IS : 8148 Packaged Air conditioners
e) IS : 2997 Air circulator type electrical fan and regulator
f) IS : 1169 Electrical pedestal type fans and regulators
g) IS : 374 Electrical ceiling type fan and regulator

GENERAL & IMPORTANT NOTES

1 GENERAL NOTES:

(i) Unless otherwise specified in these tender documents mode of measurements specifications etc. shall be as per relevant IS codes.

(ii) Source of materials / samples / brands / makes etc. shall be got approved from the Architects / Bank before using. In case of deviations, decision of the Bank shall be final and binding and shall not be open for arbitration.

(iii) The Architects have their specific role / duties / rights as defined in these tender documents However in the event of any dispute arising out of differences between the opinions of the Architects and also their role/duties/rights, the Banks' decision shall be final & binding on the Architects and the Contractor and shall not be open to arbitration.

(i) The Contractor will extend full co-operation, support and all required assistance to Architect / Bank for discharging their duties and responsibilities efficiently and effectively.

(ii) The contractor has to supply and adhere to the specific makes and specifications of all the items, which are mentioned in the separate list of approved makes. Any work found not as per the tender specifications and list of approved the contractor has to replace the same without any delay. The contractor is instructed of get approval of all the materials to be used on this site before starting the work. He should provide different sample of material for approval, before execution of work.

(iii) All quantities indicated in the tender are approximate & are likely to change. The contractor must take actual measurement at site and billing shall be done as per the actual measurement of the work done at site.

(vii) Work has to be got executed at site in coordination with various agencies working at site.

(viii) The contractor is instructed to get the approval of the materials to be used on this site before starting the work. He shall provide different sample of materials for approval before execution of the work

(i) All material have to be used in full size/length only. Joints should be avoided as far as possible.

(ii) Any item mentioned in the BOQ with "TO THE SHAPE" will have measurement of onsite executed to the shape area only.

(iii) Making various levels & line out for total layout on site for the items in scope of the work shall be done by the contractor

(xv) MTC (Manufacturer Test certificate) Where ever applicable shall be arranged & submitted by the contractor. Testing of wood for moisture, knot % etc. shall be carried out by the contractor at his own cost.

2 IMPORTANT NOTES:

(i) The contractor's qualified & authorized representative shall remain on site during the entire execution process for coordination with various agencies / Architect / Bank & execution of work

(ii) The site shall be cleaned on day to day basis & all debris shall be disposed away at the location beyond the limit as approved by the local authority.

(iii) Hidden measurement. It is contractor's responsibility to get the measurement checked immediately on completion of such items. This shall be done before finishing the same & before ceiling boarding done. The Architect shall be provided with such details well in advance so that the other work is not held up due to last moment action.

(iv) The contractor shall coordinate with landlord for the locations of outdoor units & must inform Architect / bank / Electrical contractor about the power requirement to outdoor or indoor units

(v) The contractor must submit the detailed catalogue of each type machine as per BOQ along with technical bid.

(vi) The contractor must complete all low side on top most priority.

(vii) Before starting the contractor shall mark out the locations of outdoor & indoor locations of each machine, route of various types of piping, caballing, wiring etc. & submit the same to the architects for the approval. The approval of the drawing by the Architect shall in no way relieve the contractor from the responsibility of providing a complete and satisfactory installation and achieving and maintaining the stipulated design conditions. Any errors, omissions and shortfalls shall be rectified, and made good free of cost to the owner regardless of the fact that the installation may in the first place have been carried out as per the approved drawings.

(viii) The contractor shall mark the return air passage, location of machines with exact dimensions size of trap door requirement, Ducting drawing, Insulation, Acoustic insulation, on drawing & also on site (slab) before starting the work. The contractor shall design exact system of Air-conditioning installation as per the site requirement & the machine configuration & submit the same in auto cad format to the architects for approval purpose.

(ix) The tender shall be quoted in 1 name only without division of high side & low side work differentiation. Order shall be placed to one party (company itself or its authorized dealer) only & shall be billed for F.O.R. site

(x) The rates quoted shall be inclusive of all taxes, Duties, Octroi, Transportation, Delivery, Installation, Testing, Commissioning etc. complete at the site. No extra will be paid for any kind of taxes.

(xi) Guarantee: As given by the manufacturer but minimum one year from the date of successful commissioning. for the compressor the guarantee should be minimum five years

(xii) All A.C. units shall be with high ambient rotary / twin rotary / scroll compressor and shall carry 5 years warranty on compressors

(xiii) The entire job shall be executed in total coordination with the other agencies working on this Project & also with landlord, bank etc.

(xiv) Architect of the project shall be kept informed about the progress of the work at various stages

(xv) All outdoor units shall be installed at the location recommended by the bank / architect / landlord

(xvi) The contractor must get the checked measurement of all hidden items i.e. refrigerant pipe, electrical caballing, drain pipe etc. before the false ceiling boarding is done or putting final finishes.

(xvii) The contractor shall arrange on his own for lighting & plug point with socket & electrical wiring, DB's etc. required during entire execution process. However supply at point shall be provided by the bank / landlord

(xviii) **Any Hidden item MUST be photographed and need to be sent via social media or CD to Architect / Bank**

(xvv) **Billing Process:**

Along with final bill the contractor must submit:

- Abstract in tender BOQ format only
- schedules for detailed measurement sheet for all items (machine wise break up)
- separate as built drawings (Min. A3 size) marking exact locations of all works executed on site e.g. Location of outdoor & indoor units with numbering, route of refrigerant pipe, drain pipe, electrical caballing etc.
  with numbering W.R.T. the measurement sheet.
- detailed break up of fabrication work W.R.T. to various types of sections as per std. steel table
- original insurance policies as per tender terms within 3 days from the date of LOA
- completion certificate duly signed by the branch head / bank official
- testing & commissioning reports duly filled & for each machine duly signed by the client
- delivery challans for each machine duly signed by the client
- copy of LOA etc.
- All documents shall carry contractor's signature & seal with address.
- All documents shall be submitted in 1 plus 1 copies.
- The contractor shall also provide all measurement sheet in soft copy (in Excel format) & As built drawing in ACAD format

IMPORTANT: ALL DOCUMENTS SHALL BE SUBMITTED AT ONCE ALONG WITH FINAL BILL & SHALL BE DULY SIGNED BY PUTTING COMPANY'S ADDRESS SEAL.

LIST OF APPROVED MAKES - CONTRACTOR MUST USE THE MATERIAL FROM THIS LIST ONLY.						
NO	Component	pproved Make - Contractor must highlight the product / make considered while quoting & also enclose detailed product catalogue for each type of machine as per BOQ with technical bid				
		With5 star rating as mentioned in the BOQ - The 1.0 Tr / 1.5 Tr / 2.0 Tr. Split AC units shall have certification from the Bureau of Energy Efficiency (BEE) 2022.				
1	*A.C. Units (Split) with copper condenser unit*	*Carrier*	*Daikin*	*Hitachi*	voltas	TOSHIBA/ Bluestar
2	*Ductable & Cassette units*	*Toshiba*	*Daikin*	*Mitsubishi Heavy*		
3	*VRF Systems*	*Carrier*	*Daikin*	*Hitachi*	*Toshiba*	*Mitsubishi Heavy*
		Ogenral	Mitsubishi Electric			
4	Expanded Poly-urethane	Ownes Corning	Beard sell	Cooline	Modiform	
5	Fiber glass / Glass wool	FGP	Kimmco	*TWIGA*		
6	Wires - *"FRLS"*	FINOLEX	POLYCAB	R.R. CABLE	HAVELLS	CEI
7	Cables	FINOLEX	POLYCAB	R.R. CABLE	HAVELLS	CEI
8	Electrical Components / Switch gears	EE	L & T	SIEMENS		
9	Continuous grills & Diffusers	CARYAIRE	COSMOS / CHAUHAN	DYNACRAFT	AIR MASTER	
10	G.I. Sheets 120 GSM	ESSAR	JINDAL	TATA	SAIL	
11	Drain pipes - UPVC - SCH - 40	DUTRON	PRINCE	SUPREME	ASTRAL	PRAKASH
12	Electrical motor	ABB	CROMPTON	SIEMENS		
13	Ventilation fans	ABB / PUNKER	CENTIMASTER	COMEFRI	KRUGER/NICOTRA	
14	Air curtain	ACME	ADC	SAP		
15	Metering device	AE	IMP	MECO		
16	Indicating lamps	L & T	SIEMENS			

17	G I Pipe	GST	PRINCE	ZENITH		
18	Dampers	CARYAIRE	DYNACRAFT	RAVISTAR	AJANTA / CITIZEN	
19	Copper pipe	MANDEV	TOTALLINE	PARASMANI	CITIZEN	MEXFLOW
20	STEEL for Outdoor stands	***FRESH & GOOD QUALITY***				
21	Armor	RAYNO	SUPREME	ROTOCAST	ESSELL	
22	M.S. Conduits & accessories Bends, Tees, Elbo Etc. shall be of the same make as the conduits	AKG	NAI	JMV	BEC	
23	Close cell Elastomeric Nitride rubber (sheet & tube)	K-FLEX / ARMACELL ARMAFLEX			A-FLEX / VIDOFLEX	SUPERLON
24	Drain / Condensate pumps	ECKERLE / ASPEN	500 OR ABOVE (APPROPRIATE FOR THE TYPE & LOCATION OF MACHINE & AS PER SITE CONDITION) WITH ALL ACCERSSORIES SUCH AS EXTENTION CABLE, PVC TUBE WITH CONNECTORS, INLINE FILTER, CHECK VALVE ETC. COMPLETE			
25	Anchor fastener	***HILTI***	***FISCHER***			
26	Acoustic insulation	***UP TWIGA***	***KRIMCO***			
NOTES: ***THE CONTRACTOR HAS TO SUBMITT THE SAMPLES OF ALL ITEMS & GET THE APPROVAL FROM THE ARCHITECT BEFORE PLACING THE ORDER & BEFORE STARTING THE EXECUTION OF WORK***						

GENERAL DESCRIPTION / BASIS OF DESIGN:

SCOPE

The work stated in these specifications together with Consultant's drawings, cover the design, manufacture, testing performance at manufacturer's works, delivering goods at site, handling at site, installation, commissioning & carrying out performance tests at site of the complete equipment required for the HVAC System for **State Bank of India – MEHTAPURA BRANCH, HIMMATNAGAR.**

BASIS OF DESIGN

Project : **State Bank of India – MEHTAPURA BRANCH, HIMMATNAGAR**

Application : **Comfort Air-Conditioning**

WORK TO BE DONE BY AIR CONDITIONING CONTRACTOR

The successful air conditioning contractor will provide complete air conditioning & ventilation system work as detailed in the tender BOQ and as specified in the technical specification.

BASIC CONSIDERATION FOR ESTIMATION

Site Location : **HIMMATNAGAR** [GUJARAT STATE]
Latitude : 21.8453° N
Longitude : **71.3082° E**

Ambient Conditions
Summer : DBT 110°F / WBT 75°F / RH 24%
Monsoon : DBT 95°F / WBT 83°F / RH 60%

Inside Conditions
Dry Bulb Temperature : 24°C ± 2°C (75° F)
Relative Humidity : 55 ± 2%

Filtration Level : 10 Micron

Occupancy : As per layout

Lighting Load : As Specified in Summary Sheet

Equipment Load : As Specified in Summary Sheet

Electrical Load Requirement for AC System: 12.6 KW

DATA SHEET

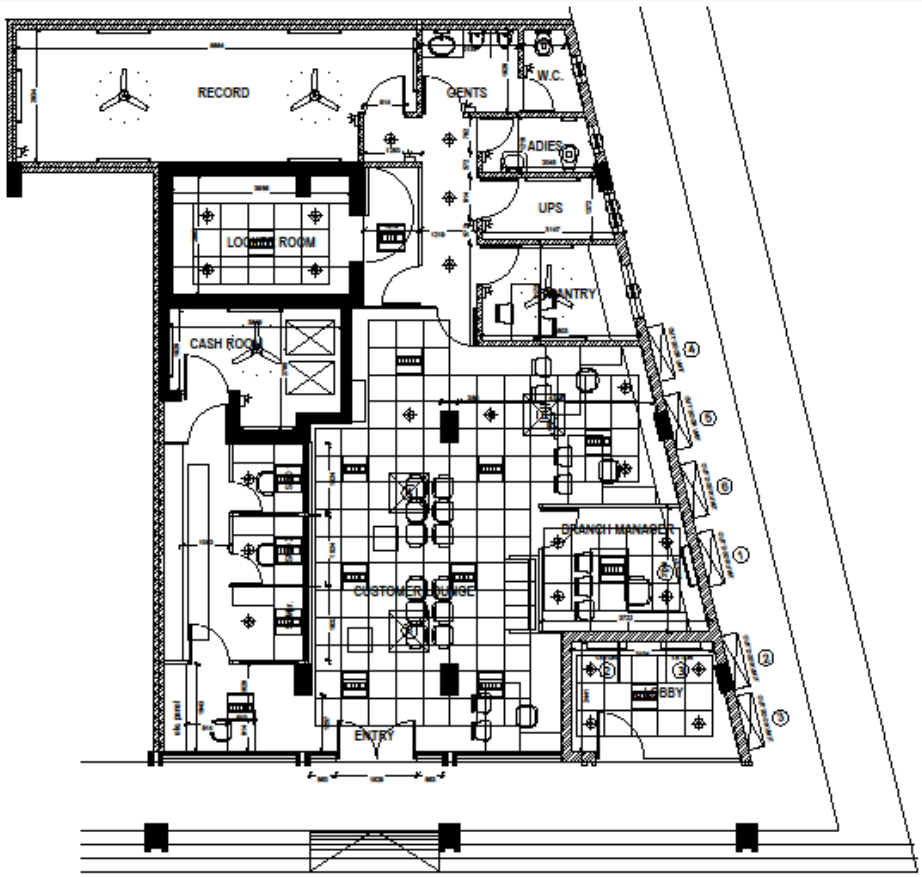
The Heat Load & Equipment Summary Sheet for the entire premises to be provided by the contractor

PRICE BID

BOQ ESTIMATE FOR AC WORKS AT MEHTAPURA BRANCH, HIMMATNAGAR			
Sr. No.	Description	Quantity	Unit
[A]	**AIR CONDITIONING WORK**		
[I]	MACHINE PART		
[a]	AC EQUIPMENT WITH - **INVERTER COMPRESSOR**		
1	Supply & providing of **4 way Inverter Cassette Type AC** ceiling mounted cassette unit with indoor and outdoor having **ecofriendly** refrigerant. Including indoor unit outdoor unit. Decorative grille and cordless remote Machine shall have copper **condenser** Unit, Make: Daikin/ Mitsubishi Heavy Industries/Toshiba. **[Mini 5 Star rating as per BEE Guide Line 2022]**		
1.a	Inverter 4-way Cassette of 3.00 TR.(3 Phase Compressor Only.)	3	NO
2	Supplying & providing of **Hi-wall Inverter Split Type AC** with high wall mounted indoor and outdoor unit having **eco-friendly** refrigerant. Including indoor unit outdoor unit. And cordless remote Machine shall have copper **condenser** Unit, Make: Carrier/ Hitachi/ Daikin/ Mitsubishi Heavy Industries/ Toshiba/ Trane/Blue star. **[Mini 5 Star rating as per BEE Guide Line 2022]**		
2a	Inverter Hi-wall Split AC of 1.5 TR	3	NO
	TOTAL FOR PART- I		
[II]	LOW SIDE WORK		
1	Installation of IDU & ODU of 4.00 TR/3.00/2.00 TR ceiling mounted cassette unit with first oil & gas charge & commissioning etc. Rate including ceiling mounted suspension Kit etc complete	3	NO

2	Installation charges for above 2.0TR/1.50TR/ 1.00 TR Split A/C including 5.0 Rmt copper tubing and electrical wiring connection etc. complete.	3	NO
3	Refrigerant piping - insulated 0.80mm wall thickness copper tube of Mandav/ Totalline make between indoor to outdoor unit of 4.00/3.00/2.00 TR ceiling mounted cassette unit with 2.5 Sqmm 4 Core copper flexible cable of Finolex / R R Kable/Havells/CEI make. The copper piping shall be insulated with 13mm thick Nitrite rubber insulated of 'O' Class of K Flax/Armaflex/ Superlon Make	30	RMT
4	Refrigerant piping - insulated 0.80mm wall thickness copper tube of Mandav/ Totalline make between indoor to outdoor unit beyong 5 Rmt dist. Of 1.0 TR/1.50TR/2.00 TR Hiwall split unit with 2.5 Sqmm 3 Core copper flexible cable of Finolex/R R Kable/Havells/CEI make. The copper piping shall be insulated with 9 mm thick Nitrite rubber insulated of 'O' Class of K Flax/Armaflex/ Superlon Make (copper pipe concealed in inside wall)	10	RMT
5	25/32 mm Dia UPVC drain pipe with insulation of Dutron/Supreme/Astral make - schedule 40 pipe, white in colour, joint properly glued with UPVC adhesive for water outlet from indoor unit. (drain pipe concealed in inside wall)	35	RMT
6	Providing and Fixing M.S Powder coated stand for keeping outdoor unit of split/cassate A/C. (Redy made)	6	NO
7	MISC. CIVIL WORK LIKE MAKING ZARI IN WALL, WALL OPENING TO PASS DUCTS & PIPES, CORE CUTTING, PLASTERING & RE-FINISHING OF THE SAME TO THE ORIGINAL FINISH AS PER THE SITE REQUIREMENTS.	1	JOB
	TOTAL FOR PART- II		
	'TOTAL (I + II)		
	NET AMOUNT		
	+ GST AS APPLICABLE		
Note:			
[1]	Rate quoted shall includes all Taxes such as Sales Tax, VAT, Excise, Octroi, etc. including transportation charges. Excluding GST [GST will be Paid Extra as per Applicable Norms]		
[2]	1 Year of entire machine with all spares unconditional warranty with 3 free services and 5 year warranty at site for compressor & PCB shall be provided by the supplier.		
[3]	The Standard installation charges for the high wall split A.C unit shall include 5 meter Each of Refrigerant pipe & Electrical Wiring [Copper and Electric cable total length for all new AC machines shall be measured and standard Length for all the new AC machines shall be deducted from total measurement.] Rate includes Removing of existing Split AC & Copper & Drain Piping in above recpeted items		
[4]	All Civil work such as Masonry work slike breacking away and making good of walls, floors slab etc. Required to be executed in the A.C system installation is the part of the scope of project. (Rate quoted shall included in Low side work items)		

[5]	The Entire Job Shall be Executed in Total Co. Ordination with the Other Agencies Working on this Project more particular with the False Ceiling and Electrical work. IF THE CONTRACTOR HAS NOT CARRIED OUT AIR CONDITIONING WORK AS PER STANDARD SPECIFICATION IN COORDINATION THEN CONTRACTOR IS LIABLE TO REMOVE AND REWORK AS PER STANDARD SPECIFICATION AND WHATEVER THE DAMAGE IN CONNECTION WITH CIVIL/ FURNITURE/ ELECTRICAL WORK WILL BE BEAR BY CONTRACTOR. IF CONTRACTOR WILL NOT DONE REWORK THEN WHATEVER BEEN THE COST FOR REWORK WILL BE DEDUCTED FROM CONTRACTOR'S PAYMENT BILL.		
[6]	The contractor will have to attend all defects noticed during defect liability period. Within 24 hours from the time of complain If the contractor fails to attend to the defects within 24 hours time these defects will be rectified by the Bank and the expenditure incurred on this account will be recovered from security deposit, or any other money due on to time.		
[7]	Buyback of old AC rate is as it is condition at site available. No rate deduction will be allowed in buyback amount if some part is not available at site or anything else.		
[8]	As renovation work in working branches is critical job contractor need to attend work i.e removing & refixing of old AC & piping, installation of Piping , New AC installation, Problem in Ac etc. within 24 Hrs after receiving email, written complaint, telephonic instruction etc. If fail to attend the same the penalty will be charge on contractor and subsequently lead to termination of contract or dismissal from empanelment of the contractor by higher authority.		
[9]	ITEM RATE QUOTED WHICH ARE ABNORAMALY LOW RATE (ALR) OR ABNORMALLY HIGH RATE (AHR) WILL BE ASKED FOR RATE ANALYSIS OF PERTICULAR ITEM.		



10 1 3 6 FT

PROJECT
MEHTAPURA BRANCH . HIMMATNAGAR . SBI . RBO II
GOUND FLOOR PLAN - ELECTRICAL

SCALE NOT TO SCALE
DATE
DRAWN
CHECKED

ARCHITECT
MAHESH DESAI
ARCHITECTURE, INTERIOR DESIGN AND LANDSCAPE ARCHITECTURE
11TH FLOOR SHANKUN SHOP PARSHAL, SHILAPE CHAMBERS
PALDI AHMEDABAD-380 007, PHONE 26662 26662

APPROVED BY
BRANCH MANAGER
CM ADMIN.
MANAGER – CIVIL
AGM

DWG.NO.
2.1