

HVAC BOQ: STATE BANK OF INDIA, DELHI, NIRMAN BHAWAN BRANCH

GENERAL NOTES:
PREAMBLE TO BOQ

- 1 All items of work under this Contract shall be executed strictly to fulfill the requirements laid down under "Basis of Design" in the specifications. Type of equipment, material specification, methods of installation and testing and type of control shall be in accordance with the specifications, approved shop drawings and the relevant Indian Standards, however capacity of each component and their quantities shall be such as to fulfill the above mentioned requirement.
- 2 The rate for each item of work included in the Schedule of Quantities shall, unless expressly stated otherwise, include cost of:
 - a. All materials, fixing materials, accessories, appliances tools, plants, equipment, transport, labour and incidentals required in preparation for and in the full and entire execution, testing, balancing, commissioning and completion of work called for in the item and as per Specifications and Drawings.
 - b. Wastage on materials and labour.
 - c. Loading, transporting, unloading, handling/double handling, hoisting to all levels, setting, fitting and fixing in position, protecting, disposal of debris and all other labour necessary in and for the full and entire execution and for the job in accordance with the contract documents, good practice and recognize principles.
 - d. Liabilities, obligations and risks arising out of Conditions of Contract.
 - e. All requirements of Specifications, whether such requirements are mentioned in the item or not. The Specifications and Drawings where available, are to be read as complimentary to and part of the Schedule of Quantities and any work called for in one shall be taken as required for all.
 - f. The contractor shall submit all technical submittal (**Data of Equipements, Air distribution, Insulation, etc.**) for approval to meet specifications as specified before procurement at site.
 - g. In the event of conflict between Schedule of Quantities and other documents including the Specifications, the most stringent shall apply. The interpretation of the Consultant/Project Manager/SBI shall be final and binding.
- 3 All equipments, quantities and technical data indicated in this Schedule are for the Contractor's guidance only, these are based on the documents prepared by the Services Consultant. This schedule must be read in conjunction with other documents. The Contractor shall be paid for the actual quantity of work executed by him in accordance with the approved Shop Drawings at the contract rates.
- 4 No alteration whatsoever is to be made to the text or quantities of this Schedule unless such alteration is authorised in writing by Services Consultant/Bank. Any such alterations, notes or additions shall, unless authorized in writing, be disregarded when tender documents are considered.
- 5 In the event of an error occurring in the amount of the Schedule, as a result of wrong extension of the unit rate and quantity, the unit rate quoted by the tenderer shall be regarded as firm and the extensions shall be amended on the basis of rates.
- 6 Any error in totaling in the amount column and in carrying forward total shall be corrected. Any error, in description or in quantity, omission of items from this Schedule shall not vitiate this Contract but shall be corrected and deemed to be variation required by the Consultant/Project Manager.
- 7 The Contractor shall procure and bring Materials/Equipment to the site only on the basis of drawings approved for construction and shop drawings and not on the basis of Schedule of Quantities which are approximate only. This also applies to the Contractor's requisition for Owner supplied materials.

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S.No.	Description	Qty.	Unit	Rate	Amount
A)	AIR-CONDITIONING SYSTEM				
1.0	VRV/VRF SYSTEM				
	Supply, Instalation, testing and commissioning of Variable Refrigerant Flow modular type airconditioning system complete with indoor and outdoor units, individual remote controller and centralized controller, interconnected refrigerant piping, full charge of refrigerant gas, control cabling etc. as per details given in specifications and having following items. The prices to be given in Indian rupees including all taxes and duties (Except GST) and delivered at site. And suitable for cooling and heating. Refrigerant to be used shall be-R 410 A only.(Daikin/Hitachi/Mithshubishi/Toshiba/Carrier)				
1.1	VRV/VRF OUTDOOR				

	Supply, Instalaltion, testing and commissioning of VRF Type type outdoor units equipped with highly efficient Scroll inverter type compressors , heat exchanger, low noise condenser fan, vibration isolator, auto check function for connection error, auto address setting and capacity as mentioned below. The quoted capacity of the outdoor units should be actual at ambient conditions. All interconnecting piping, Y-joints and U bends within the condensing unit shall be painted with special coating to protect agaist severe atmosphere conditions (like Pollutied area) of clear transparent polymer coating as per specification complete as required or as per manufacturer specification (with the connecting Kit as supplied by the manufacturer)				
a)	26 HP ODU	1	Nos.		
2.0	INDOOR UNIT				
2.1	Supply, installation, testing and commissioning of below mentioned capacity VRF Cassette type indoor air conditioners complete evaporator with coil, fan and fan motor, control panel with cordless remote control, cabling, power cabling, vibration isolation, necessary galvanized steel supports etc. as per specifications and drawings.				
a)	3.2 TR, 4 Way/Round Flow Cassette Unit with inbuilt drain pump & Cordless Remotes	7	Nos.		

3.0	REFRIGERANT PIPING FOR VRV/VRF SYSTEM				
	Supply Installation, testing, commissioning and Interconnecting refrigerant copper pipe work (between indoor & outdoor units as per specifications) with (19mm/13mm thick) closed cell elastomeric nitrile rubber tubular insulation. All piping inside the room shall be properly supported with MS slotted angle, including cutting chases, holes in walls/slabs and making them good. All external piping shall run in covered cable tray (item for cable tray shall be quote separately).				
a)	38.1 mm O.D. (insulation: 19 mm) (Or as specified by the manufacturer)	30	Mtr.		
b)	34.9 mm O.D. (insulation: 19 mm) (Or as specified by the manufacturer)	20	Mtr.		
c)	28.6 mm O.D. (insulation: 19 mm) (Or as specified by the manufacturer)	20	Mtr.		
d)	25.4 mm O.D. (insulation: 19 mm)(Or as specified by the manufacturer)	10	Mtr.		
e)	22.2 mm O.D. (insulation: 19 mm)(Or as specified by the manufacturer)	20	Mtr.		
f)	19.1 mm O.D. (insulation: 13 mm)(Or as specified by the manufacturer)	30	Mtr.		
g)	15.9 mm O.D. (insulation: 13 mm)(Or as specified by the manufacturer)	40	Mtr.		
h)	12.7 mm O.D. (insulation: 13 mm)(Or as specified by the manufacturer)	30	Mtr.		
i)	9.5 mm O.D. (insulation: 9.0 mm)(Or as specified by the manufacturer)	40	Mtr.		
4.0	SITC of fittings, Y-joints set , including distributor and headers for all Indoor units as per layout drawings include ODU pipe connection kit etc complete as required.	7	Set.		
5.0	DRAIN PIPING				
	Supply, Installation, Testing and Commissioning of PVC drain piping , 6 Kg pressure rating complete with fittings, supports as per specifications and insulated with 6 mm Nitrile rubber insulation as per specifications and drawings etc complete as required.				
b)	32 mm dia	70	Mtr.		
6.0	CABLE WORK				
6.1	Supply, installation, testing and commisioning of control cum transmission wiring of required sqmm copper wire as specified by the manufacturer in suitable PVC conduits between indoor and outdoor etc complete as required. Including all terminations and other acessories as required	180	Mtr.		
7.0	CABLE TRAY				
	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
a)	100 mm width x 50 mm depth x 1.6 mm thickness.	20	Mtrs.		
b)	200 mm width x 40/50 mm depth x 1.6 mm thickness.	20	Mtrs.		
c)	450 mm width x 50 mm depth x 1.6 mm thickness.	10	Mtrs.		
8.0	Supply and installation of MS stand suitable for mounting VRF outdoor Unit 26 HP with all acessories , nut bolts, clamps other mounting acessories if required as per the manufacturer specification	1	Nos		
9.0	Supplying, erection, testing and commissioning following wall mounted Split / Root mounted cassette units of (Toshiba / Mitsubishi / Hitachi / Daikin/Carrier) with cordless remote complete with all necessary fittings duly insulated with 9mm thick nitrile rubber pipe insulation with (evaporator coil – copper only),fan and fan motor, machine control panel improved Refrigerant Joints, .Air conditioners shall be fitted with hermetically sealed type suction cooled reciprocating or discharge cooled rotary compressor or scroll compressor .Compressor unit operating on R-410 . All complete as per drawing, approval and instructions of the Architect / Employer. Includes Copper refrigerant piping, Drain Piping, inter connecting cable including insulation, as per manufacturer specification upto 3 Meters of length including the outddor MS stands.				
	3.0 TR Ceiling suspended Cassette type split unit with 4 way air flow	1	Nos		
	1 TR wall mounted split unit (Minimum 5-Star rating inverter type)	2	Nos		
	1.5 TR wall mounted split unit (Minimum 5-Star rating inverter type)	1	Nos		
10.0					

a	Supplying and laying of extra copper refrigerant piping For Existing AC/New AC with nitrile rubber pipe insulation, both of size as specified by the manufacturer suitable for 2TR/1.5/1 Split type AC.(Indoor to Outdoor Unit)	60	Mtrs		
b)	Supplying and laying of extra copper refrigerant piping beyond 3 metre with nitrile rubber pipe insulation, both of size as specified by the manufacturer suitable for 3 TR Cassette type AC.(Indoor to Outdoor Unit)	20	Mtrs		
11.0	Providing and fixing drain piping up to 40 mm dia with all accessories e.g. elbows, unions, sockets, reducers, reducing tees, nipples etc. Complete job including cutting chiseling in walls, floor and making good of all chases/cuts etc. and discharging the drain into a floor trap/ gully as per site conditions. for #TR cassette and 2TR/1.5/1 Split type AC	80	Mtrs		
12.0	Providing and fixing of lockable caging for outdoor unit grouted on wall or on roof with open able shutter made of 10 x 10mm MS square bars placed vertically @ 5" c/c welded with 40x 3mm MS flat all- round. Item includes all necessary hardware, priming coat, synthetic enamel paint,henger ,clamps other accessories etc. All complete as per approval and instructions of the Architect / employer.				
a)	For 1.0/1.5/ 2.0 TR HI WALL split units	4	Nos		
b)	For 3 TR HI WALL Cassete unit	1	Nos		
13.0	Providing and fixng Stabilizer with 3 step relay and input voltage range of 140-280V and output to be 230 V. (Blue bird/Logic state/Inline/V-gourd) (copper winding)				
a)	4.0 KVA stabilizer for 1.0/1.5 T.R.	3	Nos		
b)	5.0 KVA stabilizer for 1.0/1.5 T.R.	1	Nos		
14.0	Electrical cable WORK				
a	Supplying and laying of Electrical interconnecting cable,control cables from indoor to outdoor,of size as specified by the manufacturer suitable for Existing high wall split AC/ New Split(beyond 3 M)	80	Mtrs		
b)	Supplying and laying of Extra Electrical interconnecting cable,control cables from indoor to outdoor,of size as specified by the manufacturer suitable for 3 TR Cassette type AC (Beyond 3 metre)	20	Mtrs		
15.0	Removing the existing high wall splits Acs (Indoor & outdoor) voltage stabilizer, including refrigerant piping etc. and re-fixing the Split unit in the same premises after servicing , cleaning , refrigerant gas filling, capacitor replacement etc, as per new layout .All complete as per approval and instructions of the Architect / engineer- in-charge	1	Nos		
16.0	Removing of the existing ducts, Split AC's 1TR/1.5TR/2TR and shifting, transporting and storing them at the space provided by the Bank or as directed by the engineer Incharge.	Lumpsu m	1.00		
	GRAND TOTAL		Rs.		

Note:- The rates quoted includes all other taxes , duties , loading, unloading , transportation, other expenses etc to site. only GST will be paid Extra