

COMPARATIVE STATEMENT

Name Of Work:- Provision of VRF / VRV Air Conditioning System for Arrival Hall at CE, Jamnagar.

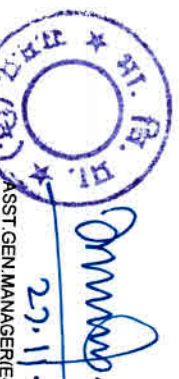
It. No.	Description of item	Unit	Qty	Justified Cost		Sagar Aircon Pvt Ltd(GSTN- 09AAUCS2208M1ZRI)		VOLKS ENERGIE PVT LTD(GSTN- 07AADCV3396C1ZZ)		AAR PEE REFRIGERATION AND AIR CONDITIONING(GSTN- 07AAEPAS214E2ZS)		Shree Sai Service(GSTN- NA)		OZONE AIR CONDITIONING AND CONSULTANCY(GSTN- NA)		b p entered
				RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	
1.00	Supply, Installation, Testing and Commissioning of following capacity modular type Variable Refrigerant Flow / Variable Refrigerant Volume air cooled Outdoor Compressor(s), minimum two compressors per module for better reliability of the system, microprocessor based Controller, top discharge type condensing unit(s), with R 410 A Refrigerant, vibration isolation pads, special pre coated fins, panel, corrosion resistant coated condenser, with suitable CC /MS foundation and base frame etc. complete, as required. The unit shall deliver the rated capacity at AHRI Conditions and work even at 54°C ambient temperature without tripping. The unit shall be suitable to work on 415V +/- 10%, 3 Phase, 50Hz AC power supply. The unit shall be filled with first charge of the refrigerant, lubricating oil and ready for use including Nitrogen Pressure testing as per specification. The Cooling COP at AHRI Conditions shall not be less than 4 and IEER not less than 6.5, complete as per technical specifications, as required.															
1.10	24 HP VRF ODU	Each	1.00	539800.00	539800.00	380000.00	380000.00	496000.00	496000.00	450000.0	450000.00	461160.00	461160.00	399546.00	399546.00	383300.00
1.20	22 HP VRF ODU	Each	2.00	506384.00	1012768.00	310000.00	620000.00	464000.00	928000.00	396000.0	792000.00	455625.00	911250.00	331811.00	663622.00	376600.00
2.00	Supply, Installation, Testing and Commissioning of 18 TR capacity and high external static pressure VRF/VRV ceiling suspended ductable type indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration isolators, drain pan, other necessary supports etc., suitable for operation on three phase AC supply 415 V ± 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature, complete as per technical specifications, as required.	Each	3.00	147290.00	441870.00	200000.00	600000.00	110000.00	330000.00	180000.0	540000.00	109930.00	329790.00	167333.00	501999.00	70600.00
3.00	Supply and Installation of REFRNET joint kits as per OEM recommendations suitable for the above VRF / VRV system, complete as required.	Each	4.00	6019.00	24076.00	8810.00	35240.00	5500.00	22000.00	1800.00	7200.00	5806.00	23274.00	2750.00	11000.00	6600.00
4.00	Supply, Installation, Testing and Commissioning of Group Controller of OEM make suitable for above VRF / VRV AC system, complete as required.	Each	1.00	13333.00	13333.00	32000.00	32000.00	18000.00	18000.00	72000.00	72000.00	34650.00	34650.00	26170.00	26170.00	28000.00
5.00	Supply, Installation, Testing and Commissioning including vacuumization and nitrogen testing of hard drawn copper refrigerant piping of minimum 1.2 mm tube thickness and in required sizes as per OEM standards suitable for above VRF / VRF system, complete with fittings, suitable adjustable ring type hanger supports, GI Cable Tray, jointing / brazing including accessories, insulated with XPIE Class-O tubular insulation / with Class-O closed cell elastomeric nitrile rubber tubular sleeves sections of minimum 19 / 13 mm thickness for Suction and Liquid lines, all accessories as per specifications etc. as required.	RMT	51.00	2591.00	132141.00	900.00	45900.00	1150.00	58650.00	540.00	27540.00	2070.00	105570.00	1720.00	87720.00	1800.00

JR EXECUTIVE (E-E)
AAI, C. A. PORBANDAR



It. No.	Description of item	Unit	Qty	Justified Cost		Sagar Aircon Pvt Ltd (GSTN- 09AAUCS208M12R)		VOLKS ENERGIE PVT LTD (GSTN- 07AADCV939C1ZZ)		AAR PRE REFRIGERATION AND AIR CONDITIONING (GSTN- 07AAEPAS214E22R)		Shree Sai Service (GSTN- NA)		OZONE AIR CONDITIONING AND CONSULTANCY (GSTN- NA)		b p entk
				RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	
6.00	Supply and laying of 2C x 0.75 sqmm shielded communication Cabling between the Indoor & Outdoor units in ISI PVC conduits, complete as required.	RMT	56.00	171.00	9576.00	190.00	10640.00	110.00	6160.00	90.00	5040.00	135.00	7560.00	70.00	3920.00	150.00
7.00	Supply and Fixing of U-PVC drain piping of 32 mm for all indoor Units with proper Slope arrangement & duly insulated with Nitrite insulation of minimum 9 mm thickness to the nearest drain point, with required support etc, complete as required.	Mtr	45.00	230.00	10350.00	150.00	6750.00	130.00	5850.00	135.00	6075.00	171.00	7695.00	176.00	7920.00	180.00
8.00	Supply, fabrication and installation of following gauges of Galvanised Iron (GI) Sheet Round Duct, inner insulated, spray painted in approved colour, complete with GI Angle supports & flanged, threaded support for level adjustment, expansion fasteners etc., complete as required.															
8.10	22 G GI Ducting	Sq.M	81.00	2336.00	189216.00	790.00	63990.00	1250.00	101250.00	650.00	52650.00	927.00	75087.00	1182.00	95742.00	1050.00
8.20	24 G GI Ducting	Sq.M	324.00	2188.00	708912.00	860.00	278640.00	1050.00	340200.00	650.00	210600.00	846.00	724104.00	1054.00	341496.00	850.00
9.00	Supply and Fixing acoustic insulation of ducts with minimum 12 mm thick fibreglass of density 48 kg/ Cu.Mtr. And covered with RP tissue and 28G perforated aluminium sheet from inside the duct, complete as required.	Sq.M	81.00	791.00	64071.00	450.00	36450.00	550.00	44550.00	1350.00	109350.00	702.00	56862.00	361.00	29241.00	950.00
10.00	Supply and Fixing of Nitrite insulation of minimum 9mm thickness closed-cell Elastomeric Class -O Nitrite rubber insulation of 40-60 kg/Cu. Mtr. density on inner side of duct. Pre-clean duct surface before applying insulation, stick insulation material using a thin film of manufacturer-recommended adhesive on both duct and insulation; keeping the insulation material under compression (without any stretching), seal all joints air-tight, complete as required.	Sq.M	324.00	755.00	244620.00	350.00	113400.00	500.00	167000.00	450.00	145800.00	477.00	154548.00	317.00	102708.00	650.00
11.00	Supply, installation, Testing and Commissioning of Fresh air fan to supply 1400 CFM cabinet type fan with 10 Micro filter for Fresh air in duct air delivery capacity and suitable for operation on three phase AC supply 415 V $\pm$ 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE System, complete as required.	Each	1.00	29736.00	29736.00	40000.00	40000.00	34000.00	34000.00	1800.00	1800.00	22540.00	22540.00	23814.00	23814.00	15500.00
12.00	Supply, installation, Testing and Commissioning of Exhaust air fan to supply 1400 CFM cabinet type fan with 10 Micro filter for Exhaust air in duct air delivery capacity and suitable for operation on three phase AC supply 415 V $\pm$ 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE System, complete as required.	Each	1.00	29736.00	29736.00	40000.00	40000.00	34000.00	34000.00	1800.00	1800.00	22540.00	22540.00	23814.00	23814.00	15500.00
13.00	SITC of Powder coated, extruded Aluminium Supply Air Grills in approved colour with adjustable vertical and horizontal deflection louvers, complete as required.	Sq.M	11.00	5407.00	59477.00	7500.00	82500.00	7100.00	78100.00	13500.00	148500.00	7200.00	79200.00	3566.00	39226.00	3500.00
14.00	SITC of Volume control damper, as required.	Sq.M	5.00	5407.00	27035.00	4200.00	21000.00	4500.00	22500.00	6300.00	31500.00	5400.00	27000.00	5329.00	26645.00	4500.00
15.00	SITC of Duct Damper, as required.	Sq.M	1.00	6325.00	6325.00	5500.00	5500.00	8300.00	8300.00	6300.00	6300.00	7200.00	7200.00	5075.00	5075.00	4000.00
16.00	SITC of fire Damper, as required.	Sq.M	1.00	14791.00	14791.00	8200.00	8200.00	11500.00	11500.00	9000.00	9000.00	8100.00	8100.00	22771.00	22771.00	18000.00

22/11/2020
JR EXECUTIVE (E-E)
AAI, C. A. PORBANDAR



It. No.	Description of item	Unit	Qty	Justified Cost		Sagar Aircon Pvt Ltd (GSTN- 09AAUCS2208M125)		VOLKS ENERGIE PVT LTD (GSTN- 07AADCV8396C12Z)		AAR PEE REFRIGERATION AND AIR CONDITIONING (GSTN- 07AAEPAR214E228)		Shree Sai Services (GSTN- NA)		OZONE AIR CONDITIONING AND CONSULTANCY (GSTN- NA)		b p entk
				RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	
17.00	Design, Fabrication, Supply and installation of Ultra Violet Germicidal Irradiation System (UVGI) suitable for ductable packaged type air-conditioning units for maintaining Indoor Air Quality through air-stream microbe disinfection with factory fabricated UV modules in strict compliance of tender specifications including microprocessor based control panel with provision of individual ballast for each lamp, isolation transformer, provision of RS 485 port, audible buzzer, indication lamps, auto door interlocking, interconnection between control panel & UV modules, power supply and control cabling, cable glanding, other safety equipment & mounting accessories, any minor civil works complete with Testing & Commissioning of the entire system all as required and specified. The whole system shall either be duct/AHU mounted and shall be in compliance with the selection chart based on ISHRAE recommendations.	Each	3.00	48965.00	146895.00	120000.00	360000.00	89000.00	267000.00	45000.00	135000.00	72000.00	216000.00	56115.00	168345.00	30786.00
18.00	Designing the HVAC system along with disinfection system (UVGI / MERV Filters) , Preparing CAD Construction Drawing, getting approval of the system design from AAI and OEM of VRF AC, Preparing as built drawing and Handing over the HVAC system with required documents such as test reports/Certificate of each material and entire system performance etc.	Job	1.00	10813.00	10813.00	50000.00	50000.00	10000.00	10000.00	18000.00	18000.00	69780.00	69780.00	15000.00	15000.00	230000.00
19.00	Supply of following size of XLPE insulated, PVC sheathed, Aluminium conductor, armoured electric cable of 1.1 KV grade conforming to IS 7098 PART-I with upto date amended, complete as required.															
19.10	4 C x 16 Sq.mm	Mtr	150.00	106.00	15900.00	230.00	34500.00	115.00	12750.00	450.00	67500.00	108.00	16200.00	94.00	14100.00	250.00
19.10	3.5 C x 240 Sq.mm	Mtr	700.00	786.00	550200.00	900.00	630000.00	755.00	528500.00	630.00	441000.00	720.00	504000.00	699.00	489300.00	780.00
20.00	Supply of following size of XLPE insulated, PVC sheathed, Copper conductor, armoured electric cable of 1.1 KV grade conforming to IS 7098 PART-I with upto date amended, complete as required.	Mtr	180.00	117.00	21060.00	170.00	30600.00	125.00	22500.00	450.00	81000.00	130.00	23400.00	114.00	20520.00	280.00
21.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required. Above 185 sq. mm and upto 400 sq. mm	Mtr	18.00	95.00	1710.00	100.00	1800.00	110.00	1980.00	225.00	4050.00	72.00	1296.00	99.00	1782.00	100.00
22.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required:- Above 185 sq. mm and upto 400 sq. mm	Mtr	682.00	81.00	55242.00	85.00	57970.00	110.00	75020.00	225.00	153450.00	72.00	49104.00	90.00	61380.00	100.00
23.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required:- Upto 35 sq. mm (Clamped with 1 mm thick saddle)	Mtr	330.00	34.00	11220.00	50.00	16500.00	75.00	24750.00	225.00	74250.00	36.00	11880.00	50.00	16500.00	95.00
24.00	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc. as required 100mm dia	Mtr	40.00	981.00	39240.00	300.00	12000.00	410.00	16400.00	180.00	7200.00	540.00	21600.00	1396.00	55840.00	350.00
25.00	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.															
25.10	4 C x 16 Sq.mm (28 mm)	Each	6.00	220.00	1320.00	240.00	1440.00	330.00	1980.00	540.00	3240.00	270.00	1620.00	287.00	1722.00	55.00
25.20	3.5 C x 240 Sq.mm (62 mm)	Each	8.00	715.00	5720.00	1200.00	9600.00	900.00	7200.00	2250.00	18000.00	1170.00	9360.00	1399.00	11192.00	145.00

Shreya
29/11/2020
JR EXECUTIVE (E-E)
AAI, C. A. PORBANDAR

It. No.	Description of Item	Unit	Qty	Justified Cost		Sagar Aircon Pvt Ltd(GSTN- 09AAUCS2208M1ZTR)		VOLKS ENERGIE PVT LTD(GSTN- 07AADCV9396C1ZZ)		AAR PEE REFRIGERATION AND AIR CONDITIONING(GSTN- 07AAEPAS214E2Z6)		Shree Sai Services(GSTN- NA)		OZONE AIR CONDITIONING AND CONSULTANCY(GSTN- NA)		b p ent
				RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	
26.00	Providing and fixing of advance technology earth electrode earthing system fabricated from hot deep galvanized pipes (pipe in pipe technology) & cavity between pipes pressure filled with highly conductive non-corrosive crystalline material complete with chemically modified homogeneous earth enhancing compound (back fill compound 25 Kg) to treat the soil for lowering the effective ground impedance for each earth pit to make it maintenance free and to minimize the ground voltage potential rise i/c excavation of earth pit suitable to accommodate earth electrode, prefabricated FRP enclosure with cover plate all as reqd. & conforming to (IS:3043 : 1987) duly CPRI/ERDA approved all as required & as specified for Size :- Outer pipe dia = 80mm Inner pipe dia = 40mm	Set	2.00	4116.00	8232.00	1800.00	3600.00	13000.00	26000.00	18000.00	36000.00	4500.00	9000.00	13395.00	26790.00	30025.00
27.00	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Mtr	10.00	427.00	4270.00	1000.00	10000.00	260.00	2600.00	450.00	4500.00	630.00	6300.00	490.00	4900.00	70.00
28.00	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Mtr	30.00	181.00	5430.00	225.00	6750.00	110.00	3300.00	135.00	4050.00	45.00	1350.00	143.00	4290.00	70.00
29.00	Providing and fixing 6 SWG dia GI wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit / submain wiring / cable as required.	Mtr	300.00	32.00	9600.00	160.00	48000.00	30.00	9000.00	22.50	6750.00	18.00	5400.00	18.00	5400.00	80.00
30.00	Providing and fixing 200A, 36KA, FP MCCB with adjustable thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.	Each	2.00	9599.00	19198.00	22000.00	44000.00	13000.00	26000.00	9000.00	18000.00	58500.00	117000.00	33790.00	67580.00	25921.00
31.00	Supplying and Fixing of outdoor TPN Sheet Steel Enclosure made of 2mm thick CRCA Sheet, IP 65, powder coated, wall / floor mounted with MS angle stand alongwith providing and fixing of 1 Nos. 4 pole 80A, 10KA, D series MCCBs complete with connections, testing and commissioning etc. as required.	Set	3.00	9170.00	27510.00	17000.00	51000.00	15000.00	45000.00	4500.00	13500.00	7200.00	21600.00	6775.00	20325.00	24869.00
32.00	Supply, Installation, Testing and Commissioning of cubical type, made out of 2 mm thick CRCA sheet, totally enclosed, IP 45, free standing, Wall mounting, dust and vermin proof, indoor, compartmentalized, suitable for operation on 3 phase and neutral, 415 V, 50Hz, AC system with busbars extensible on both sides, making interlocking arrangement between Incomers & buscouple breakers, including internal wiring with suitable size wires / cables, interconnection, duly powder coated painting etc., including supply & installation of following switchgears, metering instruments and accessories as per specifications:- Incoming : (a) 01 No. 100 Amp., 10KA, 4 Pole, MCB having Adjustable Thermal Setting (Ics=100%Icu), spreader links and extendable ON/OFF rotary handle. (b) 01 Sets of phase indicating lamps, LED type, RYB ON, OFF lamps controlled by 2 A MCB. Outgoings : (a) 16 A, TP, D curve MCB- 04 Nos. (b) 16 A, DP, D curve MCB- 04 Nos.	Set	1.00	23260.00	23260.00	54000.00	54000.00	29000.00	29000.00	33300.00	33300.00	36000.00	36000.00	51750.00	51750.00	29786.00

JR EXECUTIVE (E-E)
AAL C. A. PORBANDAR



ASST. GEN. MANAGERIE
22.11.2020

COMPARATIVE STATEMENT

Name Of Work:- Provision of VRF / VRV Air Conditioning System for Arrival Hall at CE, Jamnagar.

Sl. No.	Description of Item	Unit	Qty	Justified Cost		Innovative (GSTN- 24ADOPJ4199L1ZV)		SHES Air and Automation (GSTN- 27ACXPT1678A123)		Te Electric 24AAGFT
				RATE	AMT	RATE	AMT	RATE	AMT	RATE
1.00	Supply, Installation, Testing and Commissioning of following capacity modular type Variable Refrigerant Flow / Variable Refrigerant Volume air cooled Outdoor units suitable for cooling, having all hermetically sealed inverter type Scroll Compressor(s), minimum two compressors per module for better reliability of the system, microprocessor based Controller, top discharge type condensing unit(s), with R 410 A Refrigerant, vibration isolation pads, special pre coated fins, panel, corrosion resistant coated condenser, with suitable CC /MS foundation and base frame etc. complete, as required. The unit shall deliver the rated capacity at AHRI Conditions and work even at 54°C ambient temperature without tripping. The unit shall be suitable to work on 415V +/- 10%, 3 Phase, 50Hz AC power supply. The unit shall be filled with first charge of the refrigerant, lubricating oil and ready for use including Nitrogen Pressure testing as per specification. The Cooling COP at AHRI Conditions shall not be less than 4 and IEER not less than 6.5, complete as per technical specifications, as required.									
1.10	24 HP VRF ODU	Each	1.00	539800.00	539800.00	400357.82	400357.82	396750.00	396750.00	489236.00
1.20	22 HP VRF ODU	Each	2.00	506384.00	1012768.00	385616.60	771233.20	366000.00	732000.00	525450.00
2.00	Supply, Installation, Testing and Commissioning of 18 TR capacity and high external static pressure VRF/VRV ceiling suspended ductable type indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration isolators, drain pan, other necessary supports etc., suitable for operation on three phase AC supply 415 V ± 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature, complete as per technical specifications, as required.	Each	3.00	147290.00	441870.00	108155.08	324465.24	118500.00	355500.00	125450.00
3.00	Supply and Installation of REFNET joint kits as per OEM recommendations suitable for the above VRF / VRV system, complete as required.	Each	4.00	6019.00	24076.00	5296.12	21184.48	5555.40	22221.60	4252.00
4.00	Supply, Installation, Testing and Commissioning of Group Controller of OEM make suitable for above VRV / VRF AC system, complete as required.	Each	1.00	13333.00	13333.00	11971.92	11971.92	36600.00	36600.00	9525.00
5.00	Supply, Installation, Testing and Commissioning including vacuumization and nitrogen testing of hard drawn copper refrigerant piping of minimum 1.2 mm tube thickness and in required sizes as per OEM standards suitable for above VRV / VRF system, complete with fittings, suitable adjustable ring type hanger supports, GI Cable Tray, jointing / brazing including accessories, insulated with XPLE Class-O tubular insulation / with Class-O closed cell elastomeric nitrile rubber tubular sleeves sections of minimum 19 / 13 mm thickness for Suction and Liquid lines, all accessories as per specifications etc. as required.	RMT	51.00	2591.00	132141.00	2366.47	120689.97	1500.00	76500.00	2200.00

JR.EXECUTIVE (E-E)
AAI.C.A.PORBANDAR



It. No.	Description of Item	Unit	Qty	Justified Cost				Innovative Engineers(GSTN- 24ADQPJ4199L1ZV)				SHES Air and Automation Poona(GSTN- 27ACXPT1678A123)				Electric: 24AAGFT
				RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	RATE	AMT	
6.00	Supply and laying of 2C x 0.75 sqmm shielded communication Cabling between the Indoor & Outdoor units in ISI PVC conduits, complete as required.	RMT	56.00	171.00	9576.00	104.29	5840.24	66.66	3732.96							150.00
7.00	Supply and Fixing of U-PVC drain piping of 32 mm for all Indoor Units with proper Slope arrangement & duly insulated with Nitrile insulation of minimum 9 mm thickness to the nearest drain point, with required support etc., complete as required.	Mtr	45.00	230.00	10350.00	161.64	7273.80	204.00	9180.00							200.00
8.00	Supply, fabrication and Installation of following gauges of Galvanised Iron (GI) Sheet Round Duct, inner insulated, spray painted in approved colour, complete with GI Angle supports & flanged, threaded support for level adjustment, expansion fasteners etc., complete as required.															
8.10	22 G GI Ducting	Sq.M	81.00	2336.00	189216.00	981.29	79484.49	1050.00	85050.00							
8.20	24 G GI Ducting	Sq.M	324.00	2188.00	708912.00	948.48	307307.52	906.00	293544.00							1850.00
9.00	Supply and Fixing acoustic Insulation of ducts with minimum 12 mm thick fibreglass of density 48 kg/ Cu.Mtr. And covered with RP tissue and 28G perforated aluminium sheet from inside the duct, complete as required.	Sq.M	81.00	791.00	64071.00	360.45	29196.45	510.00	41310.00							593.00
10.00	Supply and Fixing of Nitrile Insulation of minimum 9mm thickness closed-cell Elastomeric Class -O Nitrile rubber insulation of 40-60 kg/Cu. Mtr. density on inner side of duct. Pre-clean duct surface before applying insulation, stick insulation material using a thin film of manufacturer-recommended adhesive on both duct and insulation; keeping the insulation material under compression (without any stretching), seal all joints air-tight, complete as required.	Sq.M	324.00	755.00	244620.00	393.86	127610.64	501.00	162324.00							583.00
11.00	Supply, Installation, Testing and Commissioning of Fresh air fan to supply 1400 CFM cabinet type fan with 10 Micro filter for Fresh air in duct air delavary 'capacity and suitable for operation on three phase AC supply 415 V ± 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE system, complete as required.	Each	1.00	29736.00	29736.00	19138.10	19138.10	54600.00	54600.00							26000.00
12.00	Supply, Installation, Testing and Commissioning of Exhaust air fan to supply 1400 CFM cabinet type fan with 10 Micro filter for Exhaust air in duct air delavary capacity and suitable for operation on three phase AC supply 415 V ± 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS / FIRE System, complete as required.	Each	1.00	29736.00	29736.00	19138.10	19138.10	45600.00	45600.00							20000.00
13.00	SITC of Powder coated, extruded Aluminium Supply Air Grills in approved colour with adjustable vertical and horizontal deflection louvers, complete as required.	Sq.M	11.00	5407.00	59477.00	4976.73	54744.03	6666.00	73326.00							4858.00

JR EXECUTIVE (E-E)
AAI.C.A.PORBANDAR



It. No.	Description of item	Unit	Qty	Justified Cost		Innovative Engineer(GSTN- 24ADQPJ4199L12V)		SHES Air and Automation Poona(GSTN- 27ACXP1678A123)		Te Electric 24AAGFT
				RATE	AMT	RATE	AMT	RATE	AMT	
14.00	SITC of Volume control damper, as required.			5407.00	27035.00	3889.63	19448.15	5555.40	27777.00	5000.00
15.00	SITC of Duct Damper, as required.	Sq.M	5.00	6325.00	6325.00	6238.98	6238.98	5100.00	5100.00	5000.00
16.00	SITC of fire Damper, as required.	Sq.M	1.00	14791.00	14791.00	11183.85	11183.85	9600.00	9600.00	12520.00
17.00	Design, Fabrication, Supply and Installation of Ultra Violet Germicidal Irradiation System (UVGI) suitable for ductable packaged type air-conditioning units for maintaining Indoor Air Quality through air-stream microbe disinfection with factory fabricated UV modules in strict compliance of tender specifications including microprocessor based control panel with provision of individual ballast for each lamp, isolation transformer, provision of RS 485 port, audible buzzer, indication lamps, auto door interlocking, interconnection between control panel & UV modules, power supply and control cabling, cable glanding, other safety equipment & mounting accessories, any minor civil works complete with Testing & Commissioning of the entire system all as required and specified. The whole system shall either be duct/AHU mounted and shall be in compliance with the selection chart based on ISHRAE recommendations.	Each	3.00	48965.00	146895.00	69946.52	209839.56	96000.00	288000.00	42000.00
18.00	Designing the HVAC system along with disinfection system (UVGI / MERV Filters) , Preparing CAD Construction Drawing, getting approval of the system design from AAI and OEM of VRF AC, Preparing as built drawing and Handing over the HVAC system with required documents such as test reports/Certificate of each material and entire system performance etc.	Job	1.00	10813.00	10813.00	5882.35	5882.35	6666.00	6666.00	8000.00
19.00	Supply of following size of XLPE insulated, PVC sheathed, Aluminium conductor, armoured electric cable of 1.1 KV grade conforming to IS 7098 PART-I with upto date amended, complete as required.									
19.10	4 C x 16 Sq.mm	Mtr	150.00	106.00	15900.00	96.64	14496.00	150.00	22500.00	90.00
19.20	3.5 C x 240 Sq.mm	Mtr	700.00	786.00	550200.00	714.71	500297.00	825.00	577500.00	663.00
20.00	Supply of following size of XLPE insulated, PVC sheathed, Copper conductor, armoured electric cable of 1.1 KV grade conforming to IS 7098 PART-I with upto date amended, complete as required.	Mtr	180.00	117.00	21060.00	141.01	25381.80	115.00	20700.00	90.00
21.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/HUME/METAL pipe as required.	Mtr	18.00	95.00	1710.00	105.41	1897.38	285.00	5130.00	25.00
22.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required:-	Mtr	682.00	81.00	55242.00	105.41	71889.62	96.00	65472.00	25.00
23.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required:-	Mtr	330.00	34.00	11220.00	52.70	17391.00	42.00	13860.00	45.00
24.00	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc. as required	Mtr	40.00	981.00	39240.00	1060.80	42432.00	339.00	13560.00	1000.00

For J.R. EXECUTIVE (E-E)
AAI, C.A. PORBANDAR



It. No.	Description of item	Unit	Qty	Justified Cost		Innovative Engineers (GSTN- 24ADOPJ4199L1ZV)		SHES Air and Automation Poona (GSTN- 27ACXPT1678A123)		Te Electric 24AGFT
				RATE	AMT	RATE	AMT	RATE	AMT	RATE
25.00	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.									
25.10	4 C x 16 Sq.mm (28 mm)	Each	6.00	220.00	1320.00	518.33	3109.98	303.00	1818.00	185.00
25.20	3.5 C x 240 Sq.mm (62 mm)	Each	8.00	715.00	5720.00	2213.45	17707.60	1050.00	8400.00	400.00
26.00	Providing and fixing of advance technology earth electrode earthing system fabricated from hot deep galvanized pipes (pipe in pipe technology) & cavity between pipes pressure filled with highly conductive non-corrosive crystalline material complete with chemically modified homogeneous earth enhancing compound (back fill compound 25 Kg) to treat the soil for lowering the effective ground impedance for each earth pit to make it maintenance free and to minimize the ground voltage potential rise i/c excavation of earth pit suitable to accommodate earth electrode, prefabricated FRP enclosure with cover plate all as reqd. & conforming to (IS:3043 : 1987) duly CPRI/ERDA approved all as required & as specified for Size :- Outer pipe dia = 80mm Inner pipe dia = 40mm Length of electrode = 2 Mtr	Set	2.00	4116.00	8232.00	14916.62	29833.24	33000.00	66000.00	3252.00
27.00	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Mtr	10.00	427.00	4270.00	162.59	1625.90	393.00	3930.00	300.00
28.00	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Mtr	30.00	181.00	5430.00	162.59	4877.70	141.00	4230.00	125.00
29.00	Providing and fixing 6 SWG dia GI wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit / submail wiring / cable as required.	Mtr	300.00	32.00	9600.00	26.99	8097.00	51.00	15300.00	10.00
30.00	Providing and fixing 200A, 36kA, FP MCB with adjustable thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.	Each	2.00	9599.00	19198.00	33375.88	66751.76	7773.00	15546.00	9000.00
31.00	Supplying and fixing of outdoor TPN Sheet Steel Enclosure made of 2mm thick CRCA Sheet, IP 65, powder coated, wall / floor mounted with MS angle stand alongwith providing and fixing of 1 Nos. 4 pole 80A, 10kA, D series MCBs complete with connections, testing and commissioning etc. as required.	Set	3.00	9170.00	27510.00	9027.65	27082.95	9600.00	28800.00	9000.00
32.00	Supply, Installation, Testing and Commissioning of cubical type, made out of 2 mm thick CRCA sheet, totally enclosed, IP 45, free standing, Wall mounting, dust and vermin proof, indoor, compartmentalized, suitable for operation on 3 phase and neutral, 415 V, 50Hz, AC system with busbars extensible on both sides, making interlocking arrangement between incomers & buscouple breakers, including internal wiring with suitable size wires / cables, interconnection, duly powder coated painting etc., including supply & installation of following switchgears, metering instruments and accessories as per specifications:- Incoming : (a) 01 No. 100 Amp., 10kA, 4 Pole, MCB having Adjustable Thermal Setting (Isc=100%Icu), spreader links and extendable ON/OFF rotary handle. (b) 01 Sets of phase indicating lamps, LED type, RVB ON, OFF lamps controlled by 2 A MCB. Outgoings : (a) 16 A, TP, D curve MCB- 04 Nos. (b) 16 A, DP, D curve MCB- 04 Nos.	Set	1.00	23260.00	23260.00	49637.66	49637.66	96000.00	96000.00	21000.00

27-11-2020
JR. EXECUTIVE (E-E)
AAI, C.A. PORBANDAR



BOQ Summary Details
Tender Title: Provision of VRF / VRV Air conditioning System for Arrival Hall at CE, Jamnagar
Tender ID: 2020_AAI_59066_1

Sheet Name	Sl.No	Bidder Name	Amount	Bid Rank
BoQ1	1	b p enterprises	3803724.00	L1
	2	OZONE AIR CONDITIONING AND CONSULTANCY	3849999.00	L2
	3	AAR PEE REFRIGERATION AND AIR CONDITIONING	3968595.00	L3
	4	Innovative Engineers	3992247.13	L4
	5	Shree Sai Services	4005000.00	L5
	6	SHEs Air and Automation Poona	4114357.56	L6
	7	VOLKS ENERGIE PVT LTD	4150130.00	L7
	8	Sagar Aircon Pvt Ltd	4182420.00	L8
	9	Techno Electricals	4206591.00	L9

