S.NO.	DESCRIPTION	UNIT	QTY.	AMOUNT
1	Supply, Delivery, Installation, Testing and Commissioning of furnace control panel complete with all necessary switches, contractors, instruments, indicating lamp etc.of complete set having accessories of size as or greater than given below: INCOMING 200A TP MCCB with MCCB handle and spreder link 1 nos Digital vif meter 1 nos CT/200/5 AMP 3 nos IND light R.Y.B 3 nos MCB SP and DP 6A 1 nos SPP 1 nos N. link OUT GOING 1 nos TP MCB 16 A 3 nos TP MCB 10 A 1 nos CONTACTOR 12A 3 nos Contactor 9A 1 nos O/L REALY-6-10 A 3 nos O/L REALY-3-5 A 10 nos Start & stop PB On IND .Light & Trip ind Light :- 10 nos TB 2.5 mm :- 10 nos TB 10 mm :- 10 nos Contractor 70 A mnx 70 :- 2 nos Auto man s/s 2 nos	SET	1	
2	Supply, Delivery, Installation, Testing and Commissioning of fresh Air injection system including forced draft fan mild steel.2 h.p or above	SET	1	
3	Supply, Delivery, Installation, Testing and Commissioning of the thermocouple for heat sensing range 0^{o} - 1200^{o} C (Cr.-Al) sensor housed in S.S 304 casing or better of dimension 1200 mm long × 22 mm OD complete encased to and fitted terminal on other and for connection of compensating of 2 cores 0.5 sq. mm CR- AL for heat sensing from thermocouple to temperature controller covered with asbestos embedded rope about 50 m length as per direction of EIC.	SET	1	
4	Supply, Delivery, Installation, Testing and Commissioning of the heating element of capacity 4.kW or greater each to be working in supply voltage of 240V, 50Hz made from 80/20 Ni-chrome wire of 8 SWG or higher in coiled coil from welded S.S studs on groove of existing coil brick & the S.S studs housed into the ceramic collar tube wrapped with asbestos rope for light fitting including terminal connector of S.S make with 8 SWG Copper(HDBC) with Insulated porcelain bids as per direction of EIC.	NOS	12	

5	Supply and installation of complete structural work furnace made of 50mm x 6mm x thick M.S Angle, 75mm x 50mm M.S Channel and 3mm thick M.S plate, Rear and bottom side plate of adequate thickness and welded or bolted in proper manner and furnace door of manually operated made of 16 mm plate duly welded in shape.door shall be eternally lined with ceramic blanket etc. and as per direction of EIC.	SET	1	
6	Supply, Delivery, Installation, Testing and Commissioning of cast iron door with hinge and locking arrangement from removing arrangement for removing bones and ashes.	NOS	2	
7	Supply, Delivery, Installation, Testing and Commissioning of C.I. made counterweight.	SET	1	
8	Supply, Delivery, Installation, Testing and Commissioning of manifold with a provision of three outlet, complete set and flue damper set, door guider and slide rails set and stainless-steel duct for flue exhaust Path as per direction of EIC.	LOT	1	
9	Supply, Delivery, Installation, Testing and Commissioning of two position cantilever type spring loaded body charging trolley with handle. The trolley shall be made of suitable M.S. chequered plate for platforms complete with roller etc.trolley shall be inspected before delivery.	SET	1	
10	Supply, Delivery, Installation, Testing and Commissioning of main door driving shafts with sprocket assembled-1 set handle assembly for manually driven door operation 50mm & 30mm dia plumber block with hearing assembled (2 sets each) 1 pitch roller chain 300 mm long with chain link 2 no, and ¾ " pitch roller chain 1000mm long with chain link as per direction of EIC.	LOT	1	
11	Supply, delivery & installation of complete set of refractory shaped bricks for construction of electric cremation of I.S. 8 bricks equivalent or better(approx. 1007nos bricks,insulation 4000 nos. refractory slid for construction of flue duct , as required, refractory heat resistant fire clay , ceramic blanket hysil board, asbestos ropes etc. as required for outer side of the furnace shall be constructed by red bricks by sand and cement as mortars and construction of chimney from basement of roof level including painting I.e. bricks portion shall be painted by two coats of red oxide as primer and to coats of synthetic enamel AI. Paints as per direction of engineer. Complete lining & assembling of entire cremation chamber according to standard size with proper arrangement of accommodation of heating elements, resting of dead body with sufficient opening for falling of ashes to the ash chamber & sufficient ventilation for fresh air spraying.	LOT	1	
12	Supply, Delivery, Installation, Testing and Commissioning of S.S AISI-304fabricated Venturi with packed wet Scrubber and accessories complete including piping as reqd.	SET	1	

13	Supply, Delivery, Installation, Testing and Commissioning of Mist eliminator (cyclone system) with all accessories complete as reqd.	SET	1	
14	Supply, Delivery, Installation, Testing and Commissioning of draught fan 5 /7.5 HP and other accessories complete with suitable rain protecting hood.	SET	1	
15	Supply, Delivery, Installation, Testing and Commissioning of necessary S.S AISI 304 fabricated Ducting to connect existing furnace duct with the pollution control arrangement. .	SET	1	
16	Supply, Delivery, Installation, Testing and Commissioning of M.S Self supported chimney of 30 Mtr. Length.	SET	1	
17	Supply, Delivery, Installation, Testing and Commissioning of Recirculation water pump 2 H.P along with necessary pipeline and accessories complete set as reqd	SET	1	
18	Main Distribution Panel for distribution of electricity from main line from transformer to furnace control panel, hall electrical work, outer electrical work etc. of Suitable size, Powder coated,IP 54 standard complete set having 200A TP MCCB and all other required equipments complete set.	SET	1	
19	Supply, Delivery, Installation, Testing and Commissioning of Earthing system: Maintenance free 3 m copper rod earth electrode of 20 mm diameter, back-fill chemical compound of minimum 2*25 kg, wire minimum 25 sq. mm. Earth resistance value must be less than 10 ohm round the year.The earthing must have earthing pits whose terminal shall be clearly visible for measurement purpose (minimim 3 earthing in a set)	Set	1	
20	Supply, Delivery, Installation, Testing and Commissioning of Copper conductor Air Terminal set and down conductor. The down conductor should be atleast 25x3mm copper strip of at least 20m length)	Set	1	

Technical Specification

S.N.	Description of Parts/Equipment	MOWSIE's Requirement
1.	Technology	The coils must heat up when electricity pass through the coils due to resistance.That heat must be utilized to increase the temperature inside the furnace which must be responsible for the disposal of dead body. The pollutants shall be collected in wet scrubber and filter gases shall leave to environment through a chimney.
2.	Power rating	80- 90 kW (Total load)
3.	Temperature	Primary chamber: 800°C to 900°C Maximum System Temperature: 1100°C
4.	Ash	5% (maximum)
5.	Material of Construction	Cremation Furnace: Mild steel [IS 2062] & insulated with refractory bricks.
6.	Heating Element /Radiant tubes	Power Metallurgy wire, AL/NI chrome wire in spiral form designed to work at low watt density. Heating Element must be fixed in closed Groove Refractory thus avoiding Direct contact with the emission for better life of the elements. Quantity: 12 Nos. Materials: Al/Nichrome wire. Form: Coil Formation. Distribution: Must be Inserted within side within heat Chamber through coil Bricks.
7.	Auxiliary Load	12 kW
8.	Cremation Furnace	It must be design to bear a high temperature and properly insulated and a reflector to conserve heat loss, must be provided with baffles to collect heavy particles in smoke. The shell of the furnace casing shall be fabricated from heavy gauge (3.5 mm and 5 mm) mild steel sheets. Dimension: Approx. depth: 3070mm Approx. width :1900 mm Approx. height: 3070mm
9.	Cremation Trolley	Trolley and stretcher shall be provided for easy loading of Dead body. Stretcher type, manually operated, moving on Rails with lowering & lifting mechanism.
10.	Furnace Door	Rise and fall type door lifting by electrical motor, reduction-gear box, chain, sprocket, limit switch etc. Power door Motor: 1.0 H.P.
11.	Ash Door	Ash door to be provided.
12.	Capacity of Machine	Duration: 45-50 minutes Max. Load: 150Kg Max. lift Height: 200mm Mode of Operation: Manual
13.	Brick Lining	The casing of the Furnace must have lining of heavy-duty fire bricks (min.42% Alumina content) minimum thickness of 90 mm. In the areas of high wear (main heat) 63% alumina tile shall be used to get high resistance to abrasion and thermal shock. Moderate heat duty firebricks of suitable sizes shall be used for min. loss of heat

14.	Ash Collection	The burnt ash for "Asthi Puja" shall be removed with the help of a scrapper from the ash chamber provided beneath the primary Combustion Chamber. The Ash Tray must be provided mandatorily so as the tray can be taken out and clean all the ashes collected after each funeral.
15.	System size	around 10 * 25 sq.ft for machine. Room of 40 ft * 50 Ft shall be provided for keeping the system safe.
16.	Control Panel	A Floor mounted control panel with a Heat Tag made of M.S. Structure & Plate with MCB/ MCCB/ CB/ Contractor, relays/Timers, Indicating Lamps, Safety & Power saving devices with power meter, HRC Fuses, Controller shall be of Siemens/ABB/Schneider or L&T. The control panel shall be neatly wired & ferruled as per standard. So that it can be service by local electricians.
17.	Wet Scrubber (Venture Type)	There shall be three steps of wet scrubber as given below: 1. Condenses the smoke through high-pressure cold air so the heavy ash particles get settle down in the chamber and gases pass through second stage.
		2. Washes the smoke through high pressure water sprinkled over it and goes to third stage.
		3. Excess carbon particles mix with water and hot gases released through chimney.
		<u>Specification:</u> Material of construction: S.S. AISI – 304 Position of water spray: from top of system Water circuit: closed.
		Efficiency: >90%
		Nozzle: specially designed Brass made nozzle.
		Concentration of particles: 150 mg/Ng (nominal cu. meter.) in exhaust air.
		Velocity of exhaust air: 1m/ sec.
		Fume discharge: 1500 cu.m. per hour.
		Rating of re-circulation: ≥2.0 H.P. pump
18.	ID Fan	Type: Centrifugal
		Capacity: 2800 rpm
		Pressure: 350 mm WG
		Motor rating: ≥5 H.P.
		Qty.: 1 No.
19.	Chimney	Height of Chimney shall be 30 meters.
		Base dia.of Chimney shall be 900 mm.
		Top dia. of Chimney shall be 324 mm.
		16 mm Dia. Half Thread High Tension Nut/Bolts with one spring washer and two plain washers.
		Foundation Bolt/Nut 32mm Dia.* 1200mm Long
		Steel Core Wire Rope 8 mm Dia.
20.	Operating Voltage	400±15% VAC, 3 phase, 4 wire: 50Hz

21.	Power Factor	≥0.95
22.	Control Cables	Supply & laying of cable to/from furmace control panel to different motors and equipments for proper functioning in Trench/Tray/Wall surface.
23.	Noise Level	≤75 dB at 1 m
24.	Earth Protection System	Maintenance free 3 m copper rod earth electrode of 20 mm diameter, back-fill chemical compound of minimum 2*25 kg, wire minimum 25 sq. mm. Earth resistance value must be less than 10 ohms round the year. The earthing must have earthing pits whose terminal shall be clearly visible for measurement purpose (minimim 3 earthing in a set)
25.	Lighting Protection System	Copper conductor Air Terminal set and down conductor. The down conductor should be at least 25x3mm copper strip of at least 20m length)