




		TITLE	2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER			
			BILL OF QUANTITIES- CIVIL WORKS			VOLUME III
						SHEET
S.NO	DESCRIPTION	UNIT	QTY.	RATE IN RS		AMOUNT
				In figures	In words	
<b>PART-A</b>						
1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS					
(i)	<b>Excavation</b> including providing cofferdams, shoring, strutting, sheeting, bracing, draining and pumping out water other than water below ground water table, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead up to 100 meters and <b>a lift up to 2.0 meters.</b>					
a)	In <b>all types of soils</b> including ash, morrum, laterite or weathered rock	CUM	2000			
2	Extra over item 1 above, for all types of soil/rock, <b>for additional lifts</b> beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:					
i)	In all types of soils					
a	beyond 2 m and upto 4 m	CUM	600			


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b	beyond 4 m and upto 8 m	CUM	400			
ii)	In all types of rocks					
a	beyond 2 m and upto 4 m	CUM	200			
b	beyond 4 m and upto 8 m	CUM	1000			
3	Extra over item 1 above for excavation below ground water table including <b>lowering of ground water table</b> to maintain dry working conditions for all activities up to filling/testing, water proofing all complete as per specifications, drawings and instructions of the engineer.	CUM	600			
4	Extra over item 1 above for <b>carriage of all types of excavated materails</b> beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads					
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	500			
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	500			


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5	i)Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes etc., in layers not exceeding 200 mm loose thickness for all leads and lifts and including loading from stock pile, carting, unloading, filling, watering and compacting / ramming each layer, all complete as per Specifications, drawings and as directed by the Engineer to achieve 95% standard proctor density.	CU.M	1125			
	ii) Levelling and compacting the surplus excavated earth obtained from Item No. 1 including all lifts & as per specifications and as directed by the Engineer with the cost of all labour, material and equipment complete.	CU.M	1100			

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6	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock and sand fill in layers no more than 150 mm thick each and thoroughly compacted by compacting equipment and by water flooding to achieve maximum density for all leads and lifts all labour, materials, equipment including etc. complete as per drawings, specifications and directions of the Engineer.	CU.M	200			
7	Providing and laying Nominal Mix plain cement concrete (1:3:6) with graded aggregate (with maximum size of coarse aggregate not exceeding 40 mm) at all levels for all kinds of work like mass concrete, lean concrete, mudmat, filling etc. including labour, materials, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer.	CU.M	60			


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8	Providing and laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and rein forcing steel:					
	i) For works below ground level					
	a) Grade M-25 ( sulphate resistant concrete for foundations, etc)	CU.M	1000			
	ii) For works above ground level					
	a) Grade M-20 (grade level slab)	CU.M	25			


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	b) Grade M-30 for chimney shell, corbels and other shell attachments.	CU.M	3200			
	c) Grade M30 for chimney shell, corbels and external platforms and other shell attachments.	CU.M	100			
	d) Grade M30 for all other components of the super structure, roof slab, minishells, beams, columns wall etc.	CU.M	50			
9	Placing and binding reinforcement, for reinforced concrete work, at all levels, for all kinds of work, including transportation, cleaning, derusting, straightening, cutting, bending, binding in position with annealed wire and/or welding, providing concrete cover blocks, pins, separators, chairs, supports for reinforcement, etc. with all materials, labour, equipment, handling, transporting, testing, etc. preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer. <b>Note:- TMT rebars excluding mild steel plain rod shall be provided by BHEL free of cost. Agency has to draw the material (TMT rebars) from BHEL Stores/Storgae yard including transportation and return of excess steel/scrap to BHEL stores/yard etc including T &amp; Ps and labour etc complete.</b>					
	i) For works below ground level					


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	a) High strength deformed bars	MT	100			
	ii)For works above ground level					
	a) Mild steel reinforcement bars	MT	5			
	b) High strength deformed bars	MT	300			
10	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tieing, nailing, caulking, bolting etc. and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer.					
	i) For works below ground level	SQ.M	250			
	ii) For works above ground level					
	a) Inner and outer faces of wind shield with <b>slip form shuttering</b>	SQ.M	12000			
	b) All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell attachments, chases/recesses in shell etc.	SQ.M	200			


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11	Providing and fixing formwork in shell openings (above 0.1 sq.m surface area) including cutting, formation of shapes and all other operations required for making the required shape and size, removal of formwork, all complete as per specifications, drawings and in-structions of the Engineer.	SQ.M	5			
12	Providing and placing in position at all levels, building paper (kraft paper), between concrete surfaces including the cost of labour, material, etc. complete as per drawings and instruction of the Engineer.	SQ.M	10			
13	Providing and installing, at all levels, bitumen impregnated fibre boards, 12 mm thick, conforming to IS:1838 or equivalent, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour,	SQ.M	75			
	material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.					
14	Providing and filling, at all levels, bitumen sealing compound (hot applied type) conforming to IS:1834 or equivalent, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour,	Kg	40			
	material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.					





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15	Preparing detailed fabrication drawings and after approval by the Engineer, fabricating, erecting and installing miscellaneous steel parts embedded/cast in concrete (like staircase embedments, corbel face plates, etc) at all positions and levels including the cost of all labour, and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per drawings and specification. <b>Note: Structural materials required for embedments shall be provided by BHEL at free of cost except bolts/Nuts/Washers. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scraps to BHEL's Stores/Yard etc including T&amp;Ps and labour ect complete.</b>	MT	3			


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16	Preparing detailed fabrication drawings after approval by the Engineer, fabricating and erecting mild structural steel work for the stair case from grade level to roof level including brackets, kick plates all fittings and fixtures etc., including the cost of all labour, and equipment, transporting, lifting to all heights, setting in place,drilling, bolts and bolting, anchor fasteners, welding, primer and finish touch painting,etc., complete as per drawing and specifications. <b>Note: Structural materials only required for the staircase shall be provided by BHEL at free of cost except bolts/Nuts/Washers/fasteners/paints. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scrap to BHEL's Stores/Yard etc including T&amp;Ps and labour ect complete.</b>	MT	25			


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17	Preparing detailed fabrication drawings, and after approval by the Engineer, fabricating and erecting at all levels, internal platform and walkway gallery structures complete including all structural members, connections with HSFG bolts,beam support bearings on the shell, stiffeners, seats, brackets, all other fittings and fixture, blockouts, etc. including the cost of all labour and equipment, transporting, lifting to all eights, setting in place, high strength grout and grouting, anchor bolts, welding to cast-in fixing plates, cutting, grinding, drillingl, bolts and bolting, welding, preheating and post-heating for welding, testing, grinding smooth or machining the support bearing plates, primer and finish painting, etc. complete as per drawings mand specifications.	MT	100			
	<b>Note: Structural materials required for the internal platform and walkway gallery shall be provided by BHEL at free of cost except bolts/Nuts/Washers/fasteners/paints. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scraps to BHEL's Stores/Yard etc including T&amp;Ps and labour etc complete.</b>					

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18	Preparing detailed fabrication drawings, and after approval by the Engineer, fabricating and erecting at all levels, chequered plate panels for floors of internal and external platforms and treads and landings of the staircase complete with stiffeners, brackets, ready to bolt fixtures, etc. including the cost of all labour, and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, finishing, drilling, bolts and bolting, welding, testing, primer and finish painting, etc. complete as per drawings and specifications. <b>Note: Structural materials like chequered plates/other str. members as per approved drawing required for internal platform and walkway gallery shall be provided by BHEL at free of cost except bolts/Nuts/Washers/fasteners/paints. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scraps to BHEL's Stores/Yard etc including T&amp;Ps and labour ect complete.</b>	MT	15			


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19	Preparing detailed fabrication drawings and after approval by the Engineer, fabricating and erecting, at all levels, structural steel flues (liners) mild steel complete with all bends, flanges, stiffeners, all other flue attachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labour, and equipment,transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. <b>Note: Mild steel materials required for the flue liners for various canes shall be provided by BHEL at free of cost including all structural members required for bends/flanges/stiffeners and supports for the canes. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scraps to BHEL's Stores/Yard etc including T&amp;Ps and labour ect complete.</b>	MT	250			


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20	Preparing detailed fabrication drawings and after approval by the Engineer, fabricating and erecting, at all levels, stainless steel flues (liners) as per relevant IS including roof crowning complete with all bends, flanges, stiffeners, all other flue transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. <b>Note: Stainless steel for flue liners required for the flue liners shall be provided by BHEL at free of cost including all structural materials required for supports of various types of canes. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scrap to BHEL's Stores/Yard etc including T&amp;Ps and labour etc complete.</b>	MT	17			


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21	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing at all levels, stainless plates (including stainless steel screws and fasteners) as per relevant IS and lead sheets beams and over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers , ladders, sealing, crowning, railing at terrace, ventilation louvers at top etc. including the cost of all labour material & equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drilling, welding of stainless steel using compatible & approved stainless steel electrodes, testing & machining flat and polishing the contact surfaces of stainless steel, coating the polished surfaces with silicone grease, etc., complete as per drawings and specifications.					
	<b>Note: Stainless steel for flue liners required for the flue liners shall be provided by BHEL at free of cost including all structural materials required for supports of various types of canes. Bidders have to draw the raw materials from BHEL Stores/Storage yard including transportation and return of excess steel/scraps to BHEL's Stores/Yard etc including T&amp;Ps and labour ect complete.</b>					
	(a) Stainless steel components	MT	2			
	(b) Lead Sheets bidder should offer their rate for this item including cost of materials	Kg	50			


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22	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing expansion compensator joints including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position,drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintainance procedures for the expansion joints), testing, etc complete as per drawings and specifications.	SQ.M.	35 ( For 6 nos.)			
23	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification.	SQ.M.	12			





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24	Providing and installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m <sup>3</sup> or resin bonded rock wool insulation slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, inside surface of concrete minishells, under the cast iron caps and wherever as directed by the Engineer, in two layers (each 50 mm thick) including the cost of all labour, material and equipment, transporting, lifting to all heights, etc., inclusive of plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc. welding of pins/studs to steel surfaces or embedding of pins/studs/anchors in concrete surfaces, fixing, cutting, cutting, lapping, binding, testing, etc. complete as per drawings and specifications.	Sq.M	2200			


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25	Providing and packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m <sup>3</sup> or loose rock wool insulation to a density not less than 100 kg/cu.m between the insulated minishells and brick liners at expansion joints between the lining segment and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications	Cu. M	2			
26	Providing and painting, at all levels, the part inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with acid and heat resisting black bituminous paint in as many number of coats (not less than four coats in any case) as required to give a paint DFT of not less than 150 microns including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	SQ.M	4500			


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27	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with synthetic enamel paint in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all labours, material and " & equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	SQ.M	4300			
28	Proving and laying over the chimney roof, a composite acid and heat protection treatment including providing of slopes for roof drainage including the cost of all labour, material and equipment, etc., complete as required for preparing the roof concrete, laying under bed of plain cement concrete screed to slopes, preparation of screed surface for painting, painting the screed surface with black bituminous paint, applying bitumen mastic in layers, laying acid resisting(A/R) mortar bed and laying acid resisting(A/R) bricks with A/R mortar, curing, pointing(with phenolic based A/R cement), protection and cleaning, finishing, etc., complete as per drawing and specifications.	SQ.M	100			

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29	Providing, fabricating and installing at various locations and elevations of the chimney system the following miscellaneous mild steel items complete with the cost of all labour, material and equipment, transporting, lifting, setting in place, cutting, grinding, drilling, welding, bolts and bolting, anchor fasteners and anchoring, priming, painting or galvanising, grouting etc. complete as per drawings and specifications:					
	a) Mild steel ladders with cage, hood access hatch, louvers, bird screens, hood drain basin covers and other miscellaneous mild steel items not specifically mentioned.	MT	2			
	b ) Galvanised 32 mm nominal bore tubular hand railing for stair case and internal and external platforms. Note:- Bidder should quote including cost of materials.	MT	8			


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30	Providing, fitting& fixing, outlet and overflow, cast iron roof drain heads (with gratings) in chimney roof including sockets, adapters, brackets, hangers, supports, etc., casting-in and jointing to 150 mm nominal bore rainwater pipes, grouting, etc. including the cost of all labour material and equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications.	ITEM	4			
31	Providing, fitting and fixing rainwater pipes at all levels internally from the chimney roof to ground level upto the hood drain basin including shoes, bends, junctions, flanges,hoppers, sockets, adaptors, brackets, hangers, supports, anchor fasteners, spacers, pipe sleeve through shell, silicon or vulcanised butyl seaant, foam backing material, jointing, socketing, grouting, caulking, primer and finish painting etc. complete including the cost of all labour, material and equipment, complete as per drawing and specifications:					
	a) 150 mm nominal bore cast iron pipes.	RM	50			
	b) 150 mm nominal bore medium class galvanised mild steel pipes.	RM	300			


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32	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a38 mm thick under bed of concrete) over the grade level slab inside the chimney, including the cost of all labour, material and equipment, etc. complete as required for preparation of base, laying underbed and topping, finishing, rounding of edges, corners and junctions, curing, testing, etc. complete as per drawing and specifications.	SQM	175			
33	Providing and installing an electrically operated grill type steel roll-up door (with the bottom 0.5 metres of the curtain in solid type) at chimney base, in opening of size 4 m by 6 m, with all hardware and mechanisms, fittings and fixtures, locking arrangements, frames, fasteners, gear handle arrangement for standby manual operation, all electrical accessories such as motors, control systems, cables, etc. including the cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications.	Item	1			


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				<b>In figures</b>	<b>In words</b>	
34	Providing and installing at any level and location, mild steel, double plate, personnel access doors, in shell openings of size 1.1m by 2.15m, complete with all fittings and fixtures, locking arrangements, frames, fasteners including the cost all labour, material and equipment, lifting to all heights, setting in place, grouting primer and finish painting, etc., complete as per drawing and specifications.	Item	4			
35	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels, mild steel strakes complete with all stiffeners, attachments, fasteners, pipe sleeves, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, embedding components in concrete, fixing to castin embedments, cutting, grinding, drilling, bolts and bolting welding preheating and post heating for welding , testing, grouting, galvenising components to be embeded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications.	MT	5			
36	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with Acid & Heat Resitant Polurethane paint in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	Sq. M	150			
	<b>TOTAL OF ALL ABOVE ITEMS OF PART-A</b>					


		<b>TITLE</b>	<b>2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER</b>			
			<b>BILL OF QUANTITIES- CIVIL WORKS</b>			<b>VOLUME III</b>
						<b>SHEET</b>
<b>S.NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>RATE IN RS</b>		<b>AMOUNT</b>
				<b>In figures</b>	<b>In words</b>	
<b>PART-B</b>		<b>BILL OF QUANTITIES---ELECTRICAL WORKS</b>				<b>SHEET</b>
<b>S.NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>UNIT RATE - SUPPLY</b>		<b>TOTAL AMOUNT</b>
	<b>BIDDER TO QUOTE RATE FOR SUPPLY OF MATERIAL FOR FOLLOWING ITEM NO 1 TO 18</b>			<b>In figures</b>	<b>In words</b>	
1	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	No.	1			
2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% Off Ckt. Tap) with 2 nos. of incomers with auto changeover facility using contacts and 6 nos. 100A SFU (TPN) outgoings complete in all respects	No.	1			
3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer ,	No.				
	(a)18 outgoing (16A SP MCBs)	No.	2			
	(b)12 outgoing (16A SP MCBs)	No.	2			
4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A TPN/SFU incomer and 12 outgoings (16A, SP MCBs)	No.	2			





		<b>TITLE</b>	<b>2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER</b>			
			<b>BILL OF QUANTITIES- CIVIL WORKS</b>			<b>VOLUME III</b>
						<b>SHEET</b>
<b>S.NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>RATE IN RS</b>		<b>AMOUNT</b>
				<b>In figures</b>	<b>In words</b>	
5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control Aviation lighting systems	No.	1			
6	Aviation obstruction lights :					
	a) GEC Cat. No. ZA750(L) NEON	No.	20			
	b) High intensity flashing white light having intensity of 4000 to 200,000 candles depending upon background luminance & flashing frequency 40-60/min.	No.	12			
7	Flood light with 250W HPSV lamps with all controlgears & accessories	No.	4			
8	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories	No.	170			
9	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories		50			
10	63Amp welding switch socket with plug & other Mounting accessories	No.	22			
11	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug Switches etc.	No.	23			
12	Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	Meters				
	a. 3 1/2 C x95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets	Meters	1100			
	b. 3 1/2 Cx35mm <sup>2</sup> Al for Lighting panel incoming supply	Meters	2000			


		TITLE	2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER			
			BILL OF QUANTITIES- CIVIL WORKS			VOLUME III
						SHEET
S.NO	DESCRIPTION	UNIT	QTY.	RATE IN RS		AMOUNT
				In figures	In words	
	c. 4Cx16mm <sup>2</sup> Al conductor, PVC insulated, Armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	Meters	1600			
13	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694.	Meters				
	2.5 mm <sup>2</sup>		3500			
	4.0 mm <sup>2</sup>		7000			
14	GI conduit 25mm dia with junction Boxes,Pull boxes & accessories	Meters	7000			
15	Lightning protection Air terminal	Meters	25			
16	Earthing materials	Metric Ton	5			
17	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanised.	Meter				
	600 mm wide		300			
	300 mm wide		400			
	150 mm wide		150			
18	Aviation distribution board (ADB) with one 32A SFU(TPN) incomer and 6 nos. SP 20A MCB. Construction is same as LP	No.	3			
	<b>TOTAL OF ALL ABOVE ITEMS OF PART-B</b>					

		TITLE	2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER			
			BILL OF QUANTITIES- CIVIL WORKS			VOLUME III
						SHEET
S.NO	DESCRIPTION	UNIT	QTY.	RATE IN RS		AMOUNT
				In figures	In words	
PART-C		BILL OF QUANTITIES---ELECTRICAL WORKS				SHEET
S.NO	DESCRIPTION	UNIT	QTY.	UNIT RATE EREC. & COMMN		TOTAL AMOUNT
	BIDDER TO QUOTE RATE FOR ERECTION & COMMISSIONING OF THE FOLLOWING ITEM NO 1 TO 18 EXCEPT COST OF SUPPLY OF MATERIAL ( COST OF SUPPLY OF MATERIAL COVERED UNDER PART-B ABOVE )			In figures	In words	
1	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	No.	1			
2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% Off Ckt. Tap) with 2 nos. of incomers with auto changeover facility using contacts and 6 nos. 100A SFU (TPN) outgoing complete in all respects	No.	1			
3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer	No.				
	(a)18 outgoing (16A SP MCBs)	No.	2			
	(b)12 outgoing (16A SP MCBs)	No.	2			
4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A TPN/SFU incomer and 12 outgoing (16A, SP MCBs)	No.	2			

		<b>TITLE</b>	<b>2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER</b>			
			<b>BILL OF QUANTITIES- CIVIL WORKS</b>			<b>VOLUME III</b>
						<b>SHEET</b>
<b>S.NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>RATE IN RS</b>		<b>AMOUNT</b>
				<b>In figures</b>	<b>In words</b>	
5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control Aviation lighting systems	No.	1			
6	Aviation obstruction lights :					
	a) GEC Cat. No. ZA750(L) NEON	No.	20			
	b) High intensity flashing white light having intensity of 4000 to 200,000 candles depending upon background luminance & flashing frequency 40-60/min.	No.	12			
7	Flood light with 250W HPSV lamps with all controlgears & accessories	No.	4			
8	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories	No.	170			
9	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories		50			
10	63Amp welding switch socket with plug & other Mounting accessories	No.	22			
11	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug Switches etc.	No.	23			
12	Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	Meters				
	a. 3 1/2 C x95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets	Meters	1100			
	b. 3 1/2 Cx35mm <sup>2</sup> Al for Lighting panel incoming supply	Meters	2000			

		TITLE	2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER			
			BILL OF QUANTITIES- CIVIL WORKS			VOLUME III
						SHEET
S.NO	DESCRIPTION	UNIT	QTY.	RATE IN RS		AMOUNT
				In figures	In words	
	c. 4Cx16mm <sup>2</sup> Al conductor, PVC insulated, Armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	Meters	1600			
13	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694.	Meters				
	2.5 mm <sup>2</sup>		3500			
	4.0 mm <sup>2</sup>		7000			
14	GI conduit 25mm dia with junction Boxes,Pull boxes & accessories	Meters	7000			
15	Lightning protection Air terminal	Meters	25			
16	Earthing materials	Metric Ton	5			
17	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanised.	Meter				
	600 mm wide		300			
	300 mm wide		400			
	150 mm wide		150			
18	Aviation distribution board (ADB) with one 32A SFU(TPN) incomer and 6 nos. SP 20A MCB. Construction is same as LP	No.	3			
	<b>TOTAL OF ALL ABOVE ITEMS OF PART-C</b>					

		<b>TITLE</b>	<i>2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER</i>			
			<b>BILL OF QUANTITIES- CIVIL WORKS</b>			VOLUME III
						SHEET
<b>S.NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>RATE IN RS</b>		<b>AMOUNT</b>
				In figures	In words	
			<b>BILL OF QUANTITIES- ELEVATOR</b>			VOLUME III
						SHEET
<b>S.NO</b>	<b>DESCRIPTION- PART-D</b>	<b>UNIT</b>	<b>QTY.</b>	<b>RATE</b>		<b>AMOUNT</b>
				In figures	In words	
1	Supply , Erection & Commissioning of One Rack & Pinion Elevator with a Total Traval of 120Meter and 5 landings as per the specification given in Tech. Bid of this tender	LUMPSUM	ONE			
	<b>TOTAL OF PART-D</b>					
	<b>SUMMARY SHEET</b>					
<b>SR NO</b>	<b>PARICULARS</b>	<b>AMOUNT</b>				
1	TOTAL OF PART-A					
2	TOTAL OF PART-B					
3	TOTAL OF PART-C					
4	TOTAL OF PART-D					
	GRAND TOTAL OF PART- A, B , C & D					
	TOTAL IN WORDS ( RS .....)					

		TITLE	2x125MW SURAT Lignite PROPOSAL 122 m twin steel FLUE RCC CHIMNEY WITH STEEL LINER			
			BILL OF QUANTITIES- CIVIL WORKS			VOLUME III
						SHEET
S.NO	DESCRIPTION	UNIT	QTY.	RATE IN RS		AMOUNT
				In figures	In words	
PART- E		UNIT	QUANTITY	UNIT RATE		
	<b>Bidder to furnish ONLY unit rates for price adjustment for inclusion/ deletion of optional items below ( The quoted Optional Rate will NOT be cosidered for Evaluation of Price Bid )</b>					
1	Aviation obstruction lights : Medium intensity flashing red light having intensity not less than 1600 candles & flashing frequency 40-60/min.	Nos.	Nil			
2	3 1/2 C x120mm <sup>2</sup> Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	m	Nil			
3	3 1/2 C x50mm <sup>2</sup> Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	m	Nil			
4	3 ① C x25 mm <sup>2</sup> Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	m	Nil			
5	1Cx10mm <sup>2</sup> Al conductor, PVC insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.	m	Nil			