

PROJECT: 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA							
Summary (Un-Priced Rate Schedule)							
Sl. No.	Item Description	Quantity	Units	Quoted Currency in INR / Other Currency	BASIC TOTAL AMOUNT In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT (For taxes refer Chapter-VIII of TCC) Rs. P	TOTAL AMOUNT in Words
1	2	3	4	5	6	7	8
1	TOTAL PRICE FOR ENTIRE SCOPE OF WORK AS PER TENDER NO. BHEL/CPC/YNR/CHM/27/054 FOR "CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA."	1.00	Total Price	INR		-	
Total in Figures						-	
Quoted Rate in Words							

PART-B	
PREAMBLE FOR BOQ CUM RATE SCHEDULE	
1	Details of the items in the BOQ Cum Rate Schedule shall be read in conjunction with the tender specifications, drawings and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
2	The work shall be carried out as per construction drawings, specifications, the description of the items in this schedule and/or Engineer's instructions, Drawings enclosed with these documents are only indicative giving some idea of the type of work involved. The layout, sizes and details of the building, structures and foundations shown in tender drawings may vary at a large extent during actual construction. Final drawings will be issued progressively during the execution of the work.
3	Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
4	Unless specifically mentioned otherwise in the contract, the contractor shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant, temporary works, labour materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
5	The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, from existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
6	The quantities of the various items mentioned in the BOQ cum Rate Schedule are approximate and may vary up to any extent or be deleted altogether. The overall variation in contract value on execution shall be dealt as per GCC. Contractor has to obtain prior approval of BHEL/ Customer before procurement of bought out items/ building materials.
7	BHEL Engineer's decision shall be final and binding on the contractors regarding clarification of items in BOQ cum Rate schedule with respect to the other sections of the contract.
8	In case of any discrepancy between item description, relevant specification, clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the contractor has quoted for the more stringent requirement.

PART-B						
BOQ CUM RATE SCHEDULE						
TENDER NO. BHEL/CPC/YNR/CHM/27/054						
CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.						
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
1	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, rain/surface water dewatering (but excluding dewatering required for lowering down ground water locally & temporarily), providing safety baricadding around the excavated pit, dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete for following depths below ground level including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.					
a	Depth from ground level but not exceeding 2 m	CUM	100	₹ -	₹ -	0.000029996219534
b	Depth exceeding 2 m but not exceeding 4 m	CUM	100	₹ -	₹ -	0.000037417964573
2	Extra over Item No. 1 for dewatering of ground water by well point method as per IS 9759. Ground water table shall be lowered up to 1 m below the founding level to make the site workable for foundation construction till backfilling up to ground level. Mode of measurement shall be the quantity of excavation of soil including ash below ground water table to founding level of the footing.	CUM	500	₹ -	₹ -	0.000997296989660
7	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm loose thickness using/with selected materials from compulsorily excavated soil available within a lead upto 1 km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.				₹ -	
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	11500	₹ -	₹ -	0.003485127774720
8	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm loose thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.				₹ -	
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	500	₹ -	₹ -	0.000095864206758
A11	Supplying and filling natural sand / sand manufactured from other than natural sources upto any depth below grade slab, under floors, around foundations, plinths etc. in layers not exceeding 250mm loose thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any), labour, equipments etc. all complete as per specification, drawing and as directed by engineer- in-charge.	CUM	15	₹ -	₹ -	0.000081036178648
12	Providing and Filling in grade slab, area paving, trenches, plinths and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes,filling the interstices with selected natural sand/sand manufactured from other than natural sources/moorum and compacting to 95 % of original volume of stone stack for all lifts etc. all complete as per specification, drawing and as directed by engineer- in-charge. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	280	₹ -	₹ -	0.001739533341469
13	Providing and laying Nominal Mix plain cement concrete (M7.5) 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. (Cement supply in contractor's scope)	CUM	5	₹ -	₹ -	0.000067661575609
13A	Providing and laying Nominal Mix plain cement concrete (M10) 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. (Cement supply in contractor's scope)	CUM	60	₹ -	₹ -	0.000868900800480
14	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 reinforcing steel:					
i	For all works below ground level (excluding chimney shell)					
a	Grade M-25 (foundations, etc.) (Cement supply in contractor's scope)	CUM	15	₹ -	₹ -	0.000279614244357
b	Grade M-30 (foundations, etc.) (Cement supply in contractor's scope)	CUM	15	₹ -	₹ -	0.000287870935713

PART-B						
BOQ CUM RATE SCHEDULE						
TENDER NO. BHEL/CPC/YNR/CHM/27/054						
CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.						
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
ii	For all other works				₹ -	
a	Grade M-25 grade level slab, pit, trenches, drain etc. (Cement supply in contractor's scope)	CUM	160	₹ -	₹ -	0.002982551939806
c	Grade M-35 for chimney shell, corbel, external platforms, roof slab and any other components. (Cement supply in contractor's scope)	CUM	11500	₹ -	₹ -	0.266292212011222
d	Grade M-30 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc. (Cement supply in contractor's scope)	CUM	200	₹ -	₹ -	0.004593441700593
14B	Extra over SL Nos. 14(ii)(c) for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	2650	₹ -	₹ -	0.004130201114388
15	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS 6241 in foundation, shell, pedestal etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete as per specification, drawing and as directed by engineer- in-charge.	SQM	100	₹ -	₹ -	0.000073908211017
16	Providing and placing steel reinforcements of High yield strength deformed TMT steel bars of grade Fe-500/Fe-500D/Fe-550/Fe-550D conforming to IS:1786 and IS 13920 (minimum elongation shall be 14.5%) , 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, testing, transportation to & from stores etc., preparation of bar bending schedules, all complete as per specification, drawing and as directed by engineer- in-charge.				₹ -	
i	For works below ground level (excluding shell)				₹ -	
a	High strength deformed bars (TMT steel will be provided by BHEL free of cost as per TCC)	MT	2	₹ -	₹ -	0.000068787206940
ii	For works other than those under Sl. No. 16(i)				₹ -	
a	Mild steel reinforcement bars (Mild steel supply in contractor's scope)	MT	20	₹ -	₹ -	0.004468783687219
b	High strength deformed bars (TMT steel will be provided by BHEL free of cost as per TCC)	MT	1245	₹ -	₹ -	0.058179891039182
17	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, tying, 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 (excluding shell)	SQM	100	₹ -	₹ -	0.000195321243197
ii	For works other than those under Sl. No. 17(i)				₹ -	
a	Inner and outer faces of wind shield with slip form shuttering: Providing and fixing formwork using slipform (inner and outer faces) for concreting in chimney for cast in situ, reinforced concrete works of any type and section for all elevations, including labour, materials, equipment, waste of forms, scaffolding, staging, tying, nailing, caulking, bolting, maintenance, dismantling etc. all complete as per specifications, drawings and instructions of Engineer in charge. (Area of inner face and outer face shall be measured separately.) Note:- To prevent surface problem in RCC Chimney Shell, 0.47 mm thick colour coated GI sheet should be used along with Slipform shutter plate as per direction of BHEL In-Charge. Mode of Measurement:- Total formwork quantity in chimney applicable to Slipform work as per specifications & drawings shall be jointly measured and certified. Certified quantity(SQM) to be paid in line to the unit rate of 17a) i), 17a) ii) & 17a) iii). (The slipform arrangement material shall be the property of contractor)				₹ -	
a i)	For Mobilisation & Installation (One Time Payment of the total certified quantity shall be made for mobilisation of slipform only after start of successful slipping as certified by Engineer in charge.)	SQM	37500	₹ -	₹ -	0.066897251903956
a ii)	For Dismantling of the Slipform System (One Time Payment of the total certified quantity shall be made only after complete dismantling of slipform as certified by Engineer in charge.)	SQM	37500	₹ -	₹ -	0.016779882182500
a iii)	Slipping/Providing formwork at inner and outer faces of wind shield with slip form shuttering with slipform arrangement. (Cost for design, mobilisation, installation & dismantling of slipform shall be paid separately in Item No 17 a i) & 17 a ii) and cost for slipping/providing & maintenance of slipform work to be paid in this item). Measurement for payment to be done progressively as per actual slipping executed at site.	SQM	37500	₹ -	₹ -	0.083675407770084
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.	SQM	800	₹ -	₹ -	0.003238126997609

PART-B						
BOQ CUM RATE SCHEDULE						
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ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
18	Providing and fixing formwork in shell openings and pockets (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 instructions of the Engineer.	SQM	250	₹ -	₹ -	0.001011914671291
19	Providing and placing in position at all levels, building paper (kraft paper), as per IS:1397, between concrete surfaces including the cost of labour, material, etc. complete as per specification, drawing and instruction of the Engineer.	SQM	60	₹ -	₹ -	0.000003633172908
20	Providing and installing, at all levels, bitumen impregnated fibre boards, 12 mm thick, conforming to IS:1838, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	SQM	50	₹ -	₹ -	0.000087724544192
21	Providing and filling, at all levels, bitumen sealing compound (hot applied type) conforming to IS:1834, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	KG	500	₹ -	₹ -	0.000175146905560
22	Supplying, fabricating, erecting and installing miscellaneous steel parts to be embedded/cast in concrete (like staircase embedments, corbel face plates, etc) at all positions and levels including preparation of fabrication drawings, galvanization as per IS:4736 (The minimum weight for galvanizing shall be 610 g/sq.m and shall comply with relevant IS Codes), including the cost of all labour, materials and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per specification, drawing and as directed by engineer- in-charge.	MT	2	₹ -	₹ -	0.000579394125593
B23	Fabrication (at site),erection & alignment of structural steel of gradewith mild steel rolled section/ built up section/ combination of both conforming to IS:2062 in chimney platform, staircase, columns, beams, struts, monorails, stays, safety chains, ladders, MS gratings, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates,gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs,stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer,providing and applying intermediate, final and final finish coat of paint (blast cleaning,primer and paint shall be paid separately as per item no C23, D23, E23, F23 & G23), connection design, preparation of fabrication drgs and appointment of a separte agency for review and approval of fabrication drgs in consultation with BHEL, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, true to line, level, plumb & dimension, erection bolts & nuts (weight of erection bolts and nuts not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete as per specification, drawing and as directed by engineer- in-charge. (Structural Steel Shall be Provided by BHEL) Payment Breakup:- 1) On Completion of Fabrication-60% 2) On completion of erection, alignment,bolt tightening/welding etc.-40%	MT	600	₹ -	₹ -	0.060689464622875
F23	Extra over ST NO. B23 for blast cleaning by shot / metal blasting of steel structures to grade ST-2 as per SIS05-5900 or as per IS:1477(Part-1),providing and applying 2 coats of zinc silicate primer each of minimum 25 micron DFT and 2 coats of heat & acid resistant epoxy paint each of minimum 75 micron DFT of approved brand and shade after surface preparation as per IS:1477 including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting & finish painting etc all complete per drawings, specifications and instructions of the Engineer.	MT	375	₹ -	₹ -	0.010900688026518
G23	Extra over ST NO. B23 for blast cleaning by shot / metal blasting of steel structures to grade ST-2 as per SIS05-5900 or as per IS:1477(Part-1), providing and applying zinc rich primer in 2 coats including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting & finish painting etc. all complete as per specifications. All structural steel work other than stair treads shall be provided with 2 coats of zinc chromate red oxide primer each of minimum 25 micron DFT followed by 3 coats of synthetic enamel painting each of minimum 75 micron DFT of approved brand and shade as per drawings, specifications and instructions of the Engineer.	MT	225	₹ -	₹ -	0.005287993340524
A24	Supplying, fabrication, erection and alignment of factory made chequered plate conforming to IS 3502 (minimum 6 mm o/p) in platforms, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, grinding, drilling, welding, edge preparation, connection design, preparation of fabrication drgs and appointment of a separte agency for review and approval of fabrication drgs in consultation with BHEL etc. all complete as per specification, drawing and as directed by engineer- in-charge.(Chequered plate supply is in Contractor's Scope)	MT	150	₹ -	₹ -	0.042992435510332

PART-B						
BOQ CUM RATE SCHEDULE						
TENDER NO. BHEL/CPC/YNR/CHM/27/054						
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ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
25	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649, up to and inclusive of 39 mm diameter and upto 1200 mm long for structural steel work including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, testing, etc. complete as per drawings and specifications.	QUINTAL	110	₹ -	₹ -	0.005438749113181
A25	Providing and fixing in positing of high strength structural bolts (of property class 10.9 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649, up to and inclusive of 39 mm diameter and upto 1200 mm long for structural steel work including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, testing, etc. complete as per drawings and specifications.	QUINTAL	25	₹ -	₹ -	0.001364603536279
B25	Providing and fixing in position (for liner supporting hangers) of precision bolts of property class 8.8 conforming to is:1367 with yield strength not less than 700 mpa. and nuts of property class 8s conforming to is:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 36 mm diameter and upto 300 mm long for structural steel work including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, testing, etc. complete as per drawings and specifications. (The material specifications for nuts and bolts shall be 40 cr4mo3 conforming to is:4367. bolts shall be fixed in close tolerance holes with an overall diameter equal to the nominal bolt diameter +0.15mm. - 0.00mm.)	QUINTAL	15	₹ -	₹ -	0.000742998942809
A26	Providing, fabricating and erecting at all levels, flues complete with all bends, flanges, stiffeners, all other internal and external flue attachments, support system, staying system, collars, minishell, cap, access manholes and gas sampling ports along with gaskets, cover plates, pipes, bends, fittings, condensate collection and withdrawal arrangement in line with gas-flow-model study report and any other appurtenances like seal pot etc. as required including material, equipment, transporting, lifting to all heights, setting in place, cutting, grinding, rolling, edge preparation, drilling, bending, electrodes and other consumables, alignment, erection bolts and bolting, welding, preheating and post-heating for welding, inspection, required testing, rectification and correction of defective works etc. and other required accessories, connection design & preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, all complete as per specification, drawing and as directed by engineer- in-charge.				₹ -	
i)	Components made of structural steel of grade E250 conforming to IS:2062. [Structural steel will be provided by BHEL free of cost.] Payment breakup as follows:- a) On Completion of Fabrication-60% b) On Completion of Erection-20% c) On Completion of Welding, alignment etc -20%	MT	150	₹ -	₹ -	0.019233569233381
ii)	Components made of CORTEN-B steel as per ASTM A588 GR-A or equivalent. [Structural steel will be provided by BHEL free of cost.] Payment breakup as follows:- a) On Completion of Fabrication-60% b) On Completion of Erection-20% c) On Completion of Welding, alignment etc -20%	MT	525	₹ -	₹ -	0.070683366932673
ix)	Components made of SS of grade A316L. (All material in Contractor's Scope) Payment Breakup - a) On Supply & Receipt of Material - 60%, b) On Completion of Erection, Alignment, all complete-40%	MT	34	₹ -	₹ -	0.046974355958348
27	Supply, fabrication and installation 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, grouting, connection design, preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL etc. complete as per specification, drawing and as directed by engineer- in-charge:				₹ -	
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	10	₹ -	₹ -	0.002964988765766
b	32/40 mm nominal bore medium class tubular hand railing for stair case and internal and external platforms.	MT	35	₹ -	₹ -	0.011681972848687
A27	Extra over item no. 27 for Providing Hot dipped galvanisation on mild steel parts as per specification, drawing and as directed by engineer- in-charge:				₹ -	
a	Providing minimum 275 gsm Hot dipped galvanisation	MT	3	₹ -	₹ -	0.000154505763191
b	Providing minimum 610 gsm Hot dipped galvanisation	MT	42	₹ -	₹ -	0.004798106246009

PART-B						
BOQ CUM RATE SCHEDULE						
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CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.						
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
31	Supply, fabrication and installation at all levels, stainless plates (including stainless steel screws and fasteners) of grade AISI 316L and lead sheets beamsand over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers 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 specification, drawing and as directed by engineer- in-charge.				₹ -	
a	Stainless steel components.	KG	300	₹ -	₹ -	0.000461904326218
b	Lead Sheets.	KG	100	₹ -	₹ -	0.000080062976819
32	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, approval form BHEL/customer etc complete as per specification, drawing and as directed by engineer- in-charge.	SQM	80	₹ -	₹ -	0.009244525620992
33A	Supplying ,Fabricated Ready to Install, spare expansion compensators as specified in item no. 32 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.	SQM	16	₹ -	₹ -	0.001619919550585
34	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per specification, drawing and as directed by engineer- in-charge.					
a	25 mm (diameter) at expansion joints between linig segments.	RM	100	₹ -	₹ -	0.000139160312037
b	12 mm (diameter) at expansion joints between linig segments.	RM	400	₹ -	₹ -	0.000245247921442
35	Providing and installing, at all levels, resin bonded rock wool insulation slabs of density not less than 200 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of flue liners 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 specification, drawing and as directed by engineer- in-charge.	SQM	100	₹ -	₹ -	0.000515436954139
A35	Providing and installing, at all levels, resin bonded rock wool insulation of semi-rigid, resin bonded type, in the form of slabs and conforming to IS: 8183, consisting of 6 layers of insulation material (resin bonded rock wool) each of a minimum thickness of 25 mm with staggered joint, having a minimum density of 200 kg/cum, 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 specification, drawing and as directed by engineer- in-charge. Blanket type insulation shall not be used. Testing of insulation material to satisfy the specific requirements and properties as outlined in this specification IS: 8183 and in the relevant drawings by the contractor shall be carried out.	SQM	6100	₹ -	₹ -	0.037729985042943
A36	Providing and packing, at all levels, loose rock wool insulation to a density not less than 200 kg/cu.m between the insulated minishells and brick liners at expanjoints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per specification, drawing and as directed by engineer- in-charge.	CUM	10	₹ -	₹ -	0.000466048937985
A37	Providing and painting, at all levels, inside surface of chimney shell including top of wind shield, including all faces of corbels before constructing the liner, external surface of chimney shell and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with minimum four coats of acid and heat resisting black bitumen paint (conforming to IS:158) over a coat of compatible primer 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 specification, drawing and as directed by engineer- in-charge.	SQM	17200	₹ -	₹ -	0.021913939186133
39	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with 4 coats of synthetic enamel paint (conforming to IS:5410) over a coat of primer as per Manufacturer's recommendations to give a paint DFT of not less than 150 microns in alternate bands of colours 'Signal Red' and 'white shade' (each band with a band width of H/7 metres for Chimneys and bands at the extremities being of Orange or Red shade), including the cost of all labours, material and equipment,surface preparation, primer and finish painting, protecting, cleaning etc. complete as per specification, drawing and as directed by engineer- in-charge.	SQM	15600	₹ -	₹ -	0.024313636748851

PART-B						
BOQ CUM RATE SCHEDULE						
TENDER NO. BHEL/CPC/YNR/CHM/27/054						
CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.						
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
41	Providing and painting, with epoxy phenolic coating system having total 220 microns DFT over the inside surface of chimney shell above roof/ horizontal surface of shell at top/underside of concrete roof slab and wherever as required at all elevation including surface preparation, primer etc so as to give a good finish all complete as per drawing and specification. The epoxy phenolic coating system shall be as follows:- All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Engineer-in charge.	SQM	400	₹ -	₹ -	0.000766556113395
A42	Providing and painting, at all levels, the external surfaces of chimney shell, parapet above roof slab and wherever as directed by the Engineer, with minimum four coats of acid and heat resisting polyurethane paint over a coat of compatible primer as required to give a paint DFT of not less than 150 microns in alternate bands of signal Red and White shade (each band with a band width of H/7 metres for Chimney and bands at the extremities being of Orange or Red shade), including the cost of all labours, material and & equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per specification, drawing and as directed by engineer- in-charge.	SQM	2700	₹ -	₹ -	0.005867000779767
43	Proving and laying over the chimney roof and inside surface of shell above 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 bitumenmastic in layers, laying acid resisting(A/R) mortar bed of potassium silicate base (of average thickness 10 mm) conforming to IS: 4832 Part-I and laying 20 mm thick acid resisting(A/R) tiles conforming to IS:4457 with A/R mortar of potassium silicate base, curing, pointing(with phenolic based resin A/R cement mortar conforming to IS:4832 Part-2), protection and cleaning, finishing, etc., as per specification, drawing and as directed by engineer- in-charge.	SQM	180	₹ -	₹ -	0.001817956447384
44	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 200 mm nominal bore rainwater pipes, grouting, etc. Including the cost of all labour material and equipement, transporting, lifting, setting in place, painting, etc. complete as per specification, drawing and as directed by engineer- in-charge.	EACH	8	₹ -	₹ -	0.000226010395606
45	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 specification, drawing and as directed by engineer- in-charge:				₹ -	
a	200 mm nominal bore cast iron pipes.	RM	290	₹ -	₹ -	0.003875047704723
b	200 mm nominal bore medium class galvanised mild steel pipes.	RM	50	₹ -	₹ -	0.000506688718623
e	200 mm nominal bore UPVC pipes.	RM	290	₹ -	₹ -	0.001310216314881
46	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettallc concrete hardener topping over 38 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. (Cement in Contractor's scope)	SQM	820	₹ -	₹ -	0.001708163538433

BOQ CUM RATE SCHEDULE							PART-B
TENDER NO. BHEL/CPC/YNR/CHM/27/054							
CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.							
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE	
A47	Supplying, fabricating and installing electrically operated steel roll-up door and grilled ventilation at chimney base (rolling shutter size will be approx. 5X5 m and remaining area covered with grill for ventilation), 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 connection design, preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications.	SQM	70	₹ -	₹ -	0.000917309094938	
48	Supplying, fabricating and installing at any level and location, mild steel, double plate, personnel access doors, in shell openings of size 1.2m by 2.1m, complete with all fittings and fixtures, locking arrangements, frames, fasteners including connection design, preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, the cost all labour, material and equipment, lifting to all heights, setting in place, grouting primer and finish painting, etc., complete as per specification, drawing and as directed by engineer- in-charge.	EACH	1	₹ -	₹ -	0.000077581623562	
A49	Supplying, fabricating and installing SS 316L grade access hatch for approx opening size of 750mmx1000mm in roof slab of chimney complete with locking arrangements, frames, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including connection design, preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, all labour, painting etc. complete as per specification, drawing and as directed by engineer- in-charge.	EACH	1	₹ -	₹ -	0.000698910630227	
50	Conducting load testing on girders for 1.25 times the full load, on ground , including provision of test bed and jacks, dial gauges and other supplies complete as per specification and drawings and approval of engineer in-charge.	PAIR	1	₹ -	₹ -	0.000887247859665	
51	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	1	₹ -	₹ -	0.000128718855877	
52	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	1	₹ -	₹ -	0.000065508365799	
53	Supplying and erecting after approval by Engineer a rack and pinion type Elevator of min 400 kg load carrying capacity, from ground upto top of chimney with landing at various platform level, including all fixtures, mandatory spares and accessories complete as per specification, drawing and as directed by engineer- in-charge.	LUMPSUM	1	₹ -	₹ -	0.017849296819593	
54	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof beam for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the floor slab 250 mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including connection design & preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, fixing of plates to beams, side lapping, end lapping including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer in - charge all complete. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron(nominal) and minimum 10 micron (nominal) SMP or super polyester paint over primer coat of minimum 5 micron (nominal) on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 16 mm dia & 75 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. (Supply and Fixing of shear connectors shall be paid separately as per BOQ item no. 55)	SQM	180	₹ -	₹ -	0.001035691490138	

BOQ CUM RATE SCHEDULE

TENDER NO. BHEL/CPC/YNR/CHM/27/054

CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.

ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
55	Providing and fixing shear anchor studs for fixing metal deck sheet to roof structural beams conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 16mm diameter and 75mm length manufactured from cold drawn round steel bars conforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.	QUINTAL	1	₹ -	₹ -	0.000076126285409
56	Conducting laser scanning for vertical check and entire shell surface profile , including all equipments, arrangements, skilled manpower and other supplies complete as per specification and drawings and approval of engineer incharge.	LUMPSUM	1	₹ -	₹ -	0.000909163767318
	ELECTRICAL WORKS (Design, Engineering, Supply, Installation, testing & commissioning of following items as per specification)				₹ -	
E1	415V, 200A, 10 KA for 1 sec, 4 wire AC Distribution Board with 2No. incomer and a bus-coupler (MCCB) , 12 nos. of 100A MCCB (TPN) outgoing alongwith 2 no. 100KVA lighting transformers (indoor, dry type cast resin encapsulated lighting transformers.) (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects. Each board shall consist of two dry type transformers housed in the different cubicles and a bus coupler.	NO.	1	₹ -	₹ -	0.001431255822177
E2	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 MCCB (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A MCCB (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA encapsulated lighting transformer after considering loading, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser.	NO.	1	₹ -	₹ -	0.002336338492171
E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer with a suitably rated ELCB				₹ -	
a.	18 outgoing (16A SPN MCBs)	NO.	2	₹ -	₹ -	0.000888468305709
b	12 outgoing (16A SPN MCBs)	NO.	2	₹ -	₹ -	0.000592312203806
E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A TPN/MCCB incomer and 12 outgoing (16A, SPN MCBs)	NO.	3	₹ -	₹ -	0.001227312540410
E5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer , 8 outgoing 32A MCCB (TPN), photodetector and timer circuit along with 100A contactor to control Aviation lighting systems	NO.	1	₹ -	₹ -	0.000526979915967
E6	Aviation obstruction lights :				₹ -	
a.	High intensity Type-A flashing white light having minimum intensity of 200,000 candles . With intergral flasher & intensit control and lateched lid for easy flashtube replacemnet. The same shall have three auto switched intensities-day/twilight and night.	NO.	16	₹ -	₹ -	0.013752955146112
b.	Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction with four fixture each .	NO.	4	₹ -	₹ -	0.001049557990761
E7	Following type of fixtures will be used:				₹ -	
a.	70W LED well glass fixture (for platforms)	NO.	100	₹ -	₹ -	0.003616688437182
b.	30W LED Energy efficient lamp fixture (for staircase)	NO.	130	₹ -	₹ -	0.002421342515571
c.	120W Street light type fixture (for area illumination, illumination at 0.0 level etc.)	NO.	8	₹ -	₹ -	0.000754167306318
E8	63Amp welding switch socket with plug & other Mounting accessories	NO.	9	₹ -	₹ -	0.000430258091081
E9	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug Switches etc.	NO.	9	₹ -	₹ -	0.000143408452033
E10	Al conductor, XLPE insulated, Armoured, , PVC outer sheath, FRLS type 1100V grade conforming to IS-7098 Part I.				₹ -	
a.	3½ C x95mm2 AL XLPE for connection between ACDB/ELDB/ welding sockets	METERS	1500	₹ -	₹ -	0.003921065004861
b.	3½ Cx35mm2 AL XLPE for Lighting panel incoming supply	METERS	1500	₹ -	₹ -	0.001991443956691
c.	4Cx16mm2 AL conductor, XLPE insulated, for incoming supply to Aviation Distribution Board	METERS	1000	₹ -	₹ -	0.001115148502646
d.	4C x 2.5mm2 Cu Control cable for Aviation lighting system	METERS	700	₹ -	₹ -	0.000694431330561
E11	Control cables shall have stranded annealed tinned copper conductor, 1100V grade HR PVC insulation, extruded PVC inner sheath, galvanized steel wire armoured, overall extruded PVC sheath, FRLS type.				₹ -	
a.	4CX2.5 mm²	METERS	500	₹ -	₹ -	0.000496022378972
E12	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694.				₹ -	
a.	From Lighting panels to junction boxes : 4 SQ.mm	METERS	4000	₹ -	₹ -	0.001483653562323
b.	From junction boxes to lighting fixtures (Number of wires per lead as required) : 2.5 SQ.mm	METERS	10000	₹ -	₹ -	0.002134960880851
c.	From Lighting panels to receptacles (15A) : 4 SQ.mm	METERS	1000	₹ -	₹ -	0.000370913390581
E13	GI conduit 25mm dia with junction Boxes,Pull boxes & accessories	METERS	6000	₹ -	₹ -	0.003885690901944
E14	Electro galvanise felxible steel conduit 25 mm dia with accessories	METERS	250	₹ -	₹ -	0.000177812641567
E15	Lightning protection Air terminal 20mm dia solid copper rod with top with lead coating and will have spikes on solid sphere on top. (each 3 metre long.)	METERS	6	₹ -	₹ -	0.000276401547471

PART-B						
BOQ CUM RATE SCHEDULE						
TENDER NO. BHEL/CPC/YNR/CHM/27/054						
CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.						
ST / ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE (INR)= TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY)	AMOUNT (INR)= RATE * QUANTITY	WEIGHTAGE
E16	50X6 around the top of each of the flue duct, for a coronal band of lead coated copper strip of size	METERS	500	₹ -	₹ -	0.000229615960142
E17	Earthing materials/ Down Conductor				₹ -	
a	50 mm x 6 mm GI Flat	METERS	500	₹ -	₹ -	0.000794805340003
b	25 mm x 6 mm GI Flat	METERS	2000	₹ -	₹ -	0.002850926796751
c	25 mm x 3 mm GI Flat	METERS	300	₹ -	₹ -	0.000267274387195
d	8 SWG GI wire	METERS	7500	₹ -	₹ -	0.001479767583168
e	40mm dia MS rod for earthing of down conductor	METERS	300	₹ -	₹ -	0.000837200810114
f	TEST LINK BOX 200X200X100MM	NO.	6	₹ -	₹ -	0.000213965315986
E18	Telephone Socket with junction box	NO.	6	₹ -	₹ -	0.000099775175668
E19	Telephone cable shall be of minimum 0.6 mm dia annealed high conductivity electro copper conductor. PVC insulated, twisted , PVC tape wrapped, screened, tip corded, PVC sheathed, conforming to relevent ITD (Indian telephone department) specification.				₹ -	
a	20 Pair	METERS	400	₹ -	₹ -	0.000684960503354
b	2 Pair	METERS	150	₹ -	₹ -	0.000018988216995
E20	TELEPHONE SET	NO.	4	₹ -	₹ -	0.000015979062008
E21	20 PAIR CROWN TYPE JUNCTION BOX	NO.	4	₹ -	₹ -	0.000158330560839
E22	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanised.				₹ -	
a	600 mm wide	METER	300	₹ -	₹ -	0.001356555335324
b	300 mm wide	METER	150	₹ -	₹ -	0.000376212872589
c	150 mm wide	METER	150	₹ -	₹ -	0.000316160514001
E23	Aviation distribution board (ADB) with one 32A MCCB(TPN) incomer and 6 nos. SP 20A MCB. Construction is same as LP	NO.	3	₹ -	₹ -	0.001549735714883
24	Mandatory Spares				₹ -	
a)	Power Supply Card	NOS.	6	₹ -	₹ -	0.000972972278811
b)	Electronic Flasher Card	NOS.	3	₹ -	₹ -	0.000425116780924
c)	TIMER/Photocell Control Unit	SETS	2	₹ -	₹ -	0.000149686214614
d)	Spare lamp/tube with holder for Aviation Obstruction Lighting fixture	NOS.	6	₹ -	₹ -	0.000718619376029
	TOTAL AMOUNT					1.00000000000000