

TENDER SPECIFICATION

NO: BHE/PW/PUR/WNT2-CVL CHIMNEY/1434

CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY, INCLUDING PILE, PILE TESTING, RAFT FOUNDATION, CHIMNEY SHELL WITH SLIPFORM ARRANGEMENT, STEEL FLUE LINER, INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EARTHING SYSTEMS ALL COMPLETE

AT

1x800 MW, WANAKBORI TPS, KHEDA, GUJRAT

PRICE BID - VOLUME- II

TENDER SPECIFICATIONS CONSISTS OF:

- **Notice Inviting Tender**
- **Volume 1 A - Technical Conditions of Contract,**
- **Volume 1 B - Special conditions of Contract,**
- **Volume 1 C - General conditions of Contract**
- **Volume 1 D - Forms & Procedures**



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

Date

Seal and Signature

TENDER SPECIFICATION

NO: BHE/PW/PUR/WNT2-CVL CHIMNEY/1434

CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY, INCLUDING PILE, PILE TESTING, RAFT FOUNDATION, CHIMNEY SHELL WITH SLIPFORM ARRANGEMENT, STEEL FLUE LINER, INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EARTHING SYSTEMS ALL COMPLETE

AT

1x800 MW, WANAKBORI TPS, KHEDA, GUJRAT

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR Refer Notice Inviting Tender
TENDER SUBMISSION .

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

ADD. GENERAL MANAGER (Purchase)
Place: Nagpur
Date :

Date

Seal and Signature

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Date

Seal and Signature

Volume II Price Bid

T.S.No BHE/PW/PUR/WNT2-CVL CHIMNEY/1434

Part A: Instructions to the Bidders

1. **Bidders shall quote One Total Lumpsum Price for the entire scope of work in the format given in PART C in the price bid.** Any other entry elsewhere in the price bid shall be treated as Null and Void.
2. BHEL has fixed the % weightages for the amount of individual items of Schedule of Quantity w.r.t the total quoted price in PART B of Price Bid.
3. Based on the pre-fixed % weightages, amount of individual items shall be derived by BHEL. This amount shall not be rounded off.
4. Based on the quantities of individual item and the amount arrived in SI No 3 above, item rate of individual items shall be derived by BHEL. This item rate shall be rounded off to two decimal places.
5. The item rates thus derived as in SI No 4 above, shall be multiplied with respective quantities to arrive at the amount and grand total amount which shall be considered for award of work.
6. For the convenience of bidders, BHEL has issued an excel sheet with all requisite formulae as detailed above. However this excel sheet shall not form part of contract document.

Date

Seal and Signature

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW, WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
SERVICE PART						
1	Earth work in excavation in all types of soil including moorum, ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, 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	5620	0.1892453237		
b	Depth exceeding 2 m but not exceeding 4 m	cum	4390	0.2010445340		
c	Depth exceeding 4 m but not exceeding 6 m	cum	2420	0.1442372633		
3	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, 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	200	0.0099000222		
b	Depth exceeding 2 m but not exceeding 4 m	cum	200	0.0156245249		
c	Depth exceeding 4 m but not exceeding 6 m	cum	50	0.0046469492		
4	Earth work in excavation in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 500m, 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	10	0.0009192877		
b	Depth exceeding 2 m but not exceeding 4 m	cum	10	0.0009731654		
c	Depth exceeding 4 m but not exceeding 6 m	cum	10	0.0011617373		
5	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 500m, 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	30	0.0046166430		
b	Depth exceeding 2 m but not exceeding 4 m	cum	30	0.0046166430		
c	Depth exceeding 4 m but not exceeding 6 m	cum	30	0.0062026670		
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 thickness using/with selected materials from compulsorily excavated soil available within a lead upto 500m 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	550	0.0153719733		
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	5200	0.1453350208		
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	550	0.0142607463		
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 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	100	0.0026938836		
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	50	0.0013469418		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	50	0.0008755121		
9	Extra over item No. 1 and 3 to 7 for carriage of excavated earth/selected materials for every 1 km or part thereof beyond an initial lead of 500m.	cum	6241	0.0756563743		
10	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 thickness using/with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), 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	100	0.0093949190		
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	100	0.0094622661		
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	50	0.0043102137		
11	Supplying and filling sand upto any depth below grade slab, around foundations, etc. in layers not exceeding 250 mm 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) etc. all complete including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer-in-charge.	cum	226	0.0547935926		
12	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock (63mm down graded) 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 including all labour, materials, equipment etc. complete as per drawings, specifications and directions of the Engineer.	cum	392	0.1254002821		
13	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. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)	cum	190	0.2758806207		
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: (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)					
i	For all works below ground level (except chimney shell)					
a	Grade M-25 (foundations, etc)	cum	5800	6.5115207742		
b	Grade M-30 (foundations, etc)	cum	50	0.0568241074		
c	Grade M-35 (foundations, etc)	cum	50	0.0568577809		
	For all other works					
ii	Grade M-20 (grade level slab)	cum	68	0.0772120921		
b	Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	cum	9975	13.1468760107		
c	Grade M-35 for chimney shell, corbels and external platforms and other shell attachments.	cum	200	0.2637312056		
d	Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc.	cum	45	0.0592789088		
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.	Sqm	1736	0.0865167661		

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Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
16	Taking delivery of Reinforcement steel from BHEL stores and transporting to site, providing and placing 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. (REINFORCEMENT STEEL SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)					
i						
a	High strength deformed bars	Mt	625	2.0898643963		
ii	For all other works					
a	Mild steel reinforcement bars	Mt	12	0.0361249792		
b	High strength deformed bars/TMT	Mt	1150	4.6643752913		
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.					
	For all works below ground level (except chimney shell)	Sqm	1837	0.1917607376		
	For all other works					
a	Inner and outer faces of wind shield with slip form shuttering	Sqm	31660	13.0064741641		
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	814	0.4111539863		
18	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 instructions of the Engineer.	Sqm	172	0.0868777465		
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 drawings and instruction of the Engineer.	Sqm	64	0.0012930641		
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	30	0.0099707367		
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	459	0.0386403930		
21 A	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
(i)	12mm X 25mm	RM	250	0.0120382923		
22	Preparing detailed fabrication drawings and after approval by the Engineer, 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 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 drawings and specification. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR. Payment terms: a) on receipt of materials at site - 65 % b) Erection and fixing - 35 %	Mt	4	0.1646838399		

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Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
23	<p>Taking delivery of structural steel from BHEL stores and transporting to site. Preparing detailed fabrication drawings after approval by the Engineer, fabricating and erecting structural steel work for the stair case (from grade level to roof level), internal platforms, walkway gallery structures, chequered plate panels (for floors of internal and external platforms), treads and landings of the staircase including brackets, kick plates, structural members, beam support bearings on the shell, stiffeners, seats, blockouts, ready to bolt fixtures, cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, welding to cast in fixing place, cutting, grinding, drilling, bolts and bolting, anchor fasteners, welding, preheating and post heating for welding, testing, Shot blasting to near white metal surface as per customer specifications, primercoat of epoxy resin based zinc phosphate with DFT 100 micron thickness, intermediate coat with epoxy resin based paint pigmented with titanium dioxide of DFT 100 micron thickness and then top coat epoxy paint suitably pigmented of approved colour and shade with glossy finish of 75 micron thick with finishing coat of polyurethane of 25 micron thick. complete as per drawing and specifications.</p> <p>Payment Terms : a) Fabrication : 65 %, b) Erection : 15 %, c) Alignment : 10 % d) Painting: 10% (STRUCTURAL STEEL SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)</p>	Mt	510	9.5828174809		
24	<p>Supplying, fabrication, erection and alignment of factory made galvanised welded grating units with mild steel conforming to IS:2062 in platforms, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.</p> <p>Payment terms : a) on receipt of materials at site - 65 % b) Erection and fixing - 35 %</p>	Mt	20	0.7408179934		
25	<p>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 'B' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.</p> <p>Payment terms : a) on receipt of materials at site - 65 % b) Erection and fixing - 35 %</p>	Quintal	100	0.7518629162		
26	<p>Taking delivery of structural steel from BHEL stores and transporting to site, preparing detailed fabrication drawings and after approval by the Engineer, fabricating and erecting, at all levels, structural steel flues (liners) 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, material 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.</p> <p>Payment Terms : a) Fabrication : 65 %, b) Erection : 25 %, c) Alignment : 10 % (STRUCTURAL STEEL SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)</p>	Mt	690	10.4440183983		
27	<p>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, grouting etc. complete as per drawings and specifications:</p>					
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	17	0.7504823009		
b	32/40 mm nominal bore medium class tubular hand railing for stair case and internal and external platforms.	Mt	24	1.1285621312		
c	Providing minimum 275 gsm Hot dipped galvanisation on mild steel parts as per specification.	Mt	17	0.2859102861		
28	<p>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 cast-in embedments, cutting, grinding, drilling, bolts and bolting, welding, preheating and post heating for welding, testing, grouting, primer and finish painting of exposed components, etc. complete as per drawing and specifications.</p>	Mt	5	0.1094390217		

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Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
29	Supplying, fabricating and installing in the liners, gas sampling and gas opacity measurement ports made from SS grade 316L pipe including the cost of all labour, materials, bolts and bolting, asbestos gaskets, cover plates & all other accessories, painting etc., complete as per drawings and specifications.	Each	5	0.0282521043		
30	Taking delivery of structural steel from BHEL stores and transporting to sitePreparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels SS Mini Shell at roof shell of grade A316L , etc. complete as per drawing and specifications. (Stainless steel will be supplied by BHEL as per TCC)	Mt	22	0.3155884652		
31	Taking delivery of structural steel from BHEL stores and transporting to site,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) of grade AISI 316L and lead sheets beams and 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 drawings and specifications.					
a	Stainless steel components. (Stainless steel will be supplied by BHEL as per TCC)	Mt	0.24	0.0034427832		
b	Lead Sheets.	Kg	80	0.0111796169		
32	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.	Sqm	85	0.8576736135		
33	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.	Sqm	24	0.1862820518		
34	Supplying and laying in position shaped acid resisting bricks conforming to class -I of IS:4860 at all elevations for liner, baffle wall construction (with sloped A/R mortar toppings over brick work) complete including the cost,of all labour, material and equipment, raking joints, flush pointing, cleaning, curing, etc. complete as per drawings and specifications.	Cum	10	0.1572049455		
37	Supplying, and placing in position (at the beam supports bearings) Neoperne pads between concrete surface and mild steel including the cost of all labour materials, cutting to shape, grinding, drilling etc., complete as per drawings and specifications.	Cum	2	0.4398573162		
38	Supplying and laying vermiculite concrete in the liner basin including the cost of all labour, material and equipment for handling, transporting, mixing, lifting, placing, curing, finishing of surface etc. complete as per drawings and specifications.	Cum	5	0.0541723157		
39	Supplying and laying acid resisting castable refractory lining as indicated in the drawings including the cost of all labour, material, and equipment for handling, transporting, mixing, lifting, placing, curing, finishing of surface etc. complete as per drawings and specifications.	Cum	3	0.0458431643		
41	Providing, fabricating and installing, at all levels, chemical lead sheet (2 mm thick) at expansion joints between brick lining segments including the cost of all labour, transportation, material & equipments, cutting, soldering of joints, testing etc. complete as per drawings and specifications.	Kg	10	0.0013301050		
42	Supplying and installing ready mix castable refractory concrete at opening of chimney shell baffle wall and at other locations including all necessary arrangement for keeping them in position as per drawings and approval of Engineer.	Cum	5	0.0416541753		
43	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.					
a	25 mm (diameter) at expansion joints between brick lining segments.	Rm	25	0.0042933770		
b	12 mm (diameter) at expansion joints between brick lining segments.	Rm	5	0.0004040825		
44	Providing, fabricating and laying in position asbestos mill boards , over the mini shells below the cast iron cap segments, in between the cap segments and wherever as directed by the engineer, including the cost of all labours, material and equipment, cutting, drilling, etc., complete as per drawings and specifications.					
a	25 mm thick asbestos mill boards.	Sqm	11	0.0060561870		
b	3 mm thick asbestos mill boards.	Sqm	2	0.0004646949		
45	Supplying, fabricating and installing, on top of the mini shells, grey cast iron caps complete including the cost of all labour, material and equipment, transporting, test assembling, drilling, lifting to position, setting in place, bolts and bolting, inclusive of bronze rag bolts bronze bolts and nuts, brass washers, non-shrink grout, primer and finish painting, etc., complete as per drawings and specifications.	Mt	2	0.1009061454		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

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Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
46	Providing and installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m ³ with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, on the outside surface of brick liner, on the inside surface of concrete windshield, 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.	Sqm	200	0.1616330167		
A47	Providing and installing, at all levels, resin bonded rock wool insulation slabs of density 175 to 200 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, on the outside surface of brick liner, on the inside surface of concrete windshield, 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.	Sqm	5500	3.4818445692		
48	Providing and packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m ³ between the insulated minishells and brick liners at expan joints 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 drawings and specifications.	Cum	15	0.1227400720		
49	Providing and packing, at all levels, loose rock wool insulation to a density not less than 100 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 drawings and specifications.	Cum	15	0.0553087979		
50	Providing and painting, at all levels, 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 (conforming to type I(i) of IS:158) 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.	Sqm	14800	0.9469000898		
52	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with cement based 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 specification.	Sqm	500	0.0488266404		
54	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with acid and heat resistant polyurethane 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 specification.	Sqm	15450	1.7948841407		
55	Proving and laying over the chimney roof, a comosite 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 and laying 75 mm thick 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.	Sqm	155	0.1683256338		
56	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.	Each	8	0.0388053934		
57	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	55	0.0476901583		
b	150 mm nominal bore medium class galvanised mild steel pipes.	Rm	550	0.6222871145		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
58	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic 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.	Sqm	520	0.0787960956		
59	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 7.7 m by 7 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.	Each	1	0.1423010344		
60	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.	Each	7	0.0848926910		
61	Supply, fabricating and fixing of cleanout door of size 650X825 mm. The door should be solid steel construction with inner plate 8mm and outer plate 6mm with suitable infill of stiffners, & filled with insulation mateterial and all other fittings, fixtures, fasteners including the cost of painting etc complete as per drawings and specification. The door should be hinged type and providing with locking device in addition to swivel studs with wing nuts on remaining 3 edges. The should be openable both from inside & outside and removable insulation to be provided around door opening. The door shall be provided with a minimum two coats of acid & alkali resistant paint conforming to IS158 type-1 to give a DFT of 75microns. The outside surface shall be provided with minimum 2 coats of Zinc redoxide primer and two coats of synthetic enamel paint.	Each	14	0.0449508154		
62	Supplying, fabricating and installing at the airtight enclosures sound deadened and insulated personnel access doors (which shall bear against seals under the pressure created by annulus pressurisation) complete with frames, locking arrangements, hardware, anchors, insulation, neoprene, pressure release mechanism and all other mechanisms and accessories required for proper operation including all labour, painting etc. complete as per drawings and specification.	Each	1	0.0067347090		
63	Supplying, fabricating and installing mild steel hatches at various locations in the chimney system complete with locking arrangements, frames, insulation, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including all labour, painting etc. complete as per drawings and specifications.					
a	Hood Access Hatch	Each	1	0.0063535245		
c	Liner Access Hatch	Each	2	0.0127070490		
64	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	3	0.3665493349		
66	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyster paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.					
a	Span Upto 1800mm	Sqm	165	0.0709518433		
67	Erecting and commissioning of one number Rack & Pinnion Type stack Elvator of proven make after obtaining approval from BHEL/ GSECL from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Lumpsum	1	1.1406572309		
2500 PILING WORKS						
2501	Mobilisation of two sets of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	LS	1	0.3481878242		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
2503	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M25 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/payment shall be made separately), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following.					
a	Pile with 600 mm diameter and 23 m length below cut off level	Each	459	12.1898461608		
A2504	Extra over ST. No. 2503 for pile length more than the specified length of 23m below cut off level for the following.					
a	For 600 mm diameter pile	Rm	50		3.6098% of the rate quoted as per item No.2503 (a)	
A2505	Rebate on ST.No.2503 for pile length less than the specified length of 23m below cut off level for the following.					
a	For 600 mm diameter pile	Rm	50		3.4783% of the rate quoted as per item No.2503 (a)	
2507	Conducting initial load test upto a maximum test load of 2.5 times the safe load capacity on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid seperately) etc all complete as per specification, drawing and as directed by engineer in-charge for the following.					
a	For vertical compression test by cyclic load method					
iii	600 mm diameter pile	Each	3	0.1725796128		
b	For lateral load test					
iii	600 mm diameter pile	Each	3	0.0497031628		
c	For tension/uplift test					
iii	600 mm diameter pile	Each	3	0.0700992291		
2508	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.					
a	For vertical compression test by maintained load method					
iii	600 mm diameter pile	Each	5	0.1919324726		
b	For lateral load test					
iii	600 mm diameter pile	Each	5	0.0662762715		
2509	Carrying out pile integrity test on 450mm/500mm/ 600mm/760mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	Each	465	0.1932221694		
A2511	Carrying out High Strain Dynamic Pile testing on R C bored piles using pile driving analyzer on 450mm/500mm/ 600mm/760mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge. The equipment shall have ability to record both force and velocity. Both strain and acceleration sensors shall be used to collect data & atleast 2 pairs shall be connected at diametrically opposite sides of the pile. The test and equipment shall conform to ASTM D4945-08 & include CAPWAP analysis.	Each	3	0.0336735451		
ELECTRICAL/MECHANICAL ERECTION WORKS ETC. (BIDDER TO QUOTE RATES FOR ERECTION AND COMMISSIONING ONLY)						
E1	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (MCCB) & 9 nos. of 100A MCCB (TPN) outgoing complete in all respects	No.	1	0.0058962377		
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 6 nos. 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA lighting transformer after considering loading of 80 to 85%, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser.	No.	1	0.0044223466		
E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer , 18 outgoing (16A SP MCBs)	No.	3	0.0077391908		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A TPN/MCCB incomer and 12 outgoing (16A, SP MCBs)	No.	6	0.0088453668		
E6	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer , 8 outgoing (20A SP MCBs)	No.	1	0.0013267376		
	Aviation obstruction lights :					
	a) GEC Cat. No. ZA750(L) XENON	No.	12	0.0106152483		
	b) High intensity Type A flashing white light having intensity 2000-20000 candles & flashing frequency 40-60/min.	No.	9	0.0145924307		
	c) Medium intensity Type B flashing white light having intensity >2000	No.	3	0.0039802130		
	d) Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction	No.	2	0.0056012575		
	Flood light with 250W HPSV lamps with all controlgears & accessories	No.	8	0.0064868717		
E7	(B) Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories	No.	177	0.0978667712		
E8	63Amp welding switch socket with plug & other Mounting accessories	No.	18	0.0099525530		
E9	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug Switches etc.	No.	20	0.0066336883		
E10	Al conductor, XLPE insulated, extruded PVC inner sheath GS Wire Armoured, , Overall extruded PVC outer sheath, FRLS type 1100V grade.					
	a. 3½ C x95mm2 Al for connection between ACDB/ELDB/ welding sockets	1 Lot as required	1	0.0626489572		
	b. 3½ Cx35mm2 Al for Lighting panel incoming supply	1 Lot as required	1	0.0456970211		
	c. 4C x16mm2 Al Conductor for connection between ALP/ADB/Aviation Lights	1 Lot as required	1	0.0136354286		
E11	Control cable shall have annealed tinned copper conductor, 1100grade, PVC insulation, extruded PVC inner sheath , GS Wire Armoured, , Overall extruded PVC outer sheath, FRLS type .					
	a. 2.5 mm2	1 Lot as required	1	0.0530674867		
E11	Flexible trailing cable : Annealed tinned copper conductor, EPR insulated, reinforced with nylon cord, cores laid up, HDCSP inner sheathed , cotton taped & HDCSP overall sheathed confirming to IS:9968.	1 Lot as per system requirement	1	0.0257966294		
E12	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694 for the following.					
	a. 1CX6 mm2 Al from lighting panel to junction boxes	1 Lot as required	1	0.0132667033		
	b. 1CX2.5 mm2 Al from junction boxes to lighting fixtures(no. of wires per lead as required)	1 Lot as required	1	0.0092130819		
	c. 1CX6 mm2 Al from lighting panel to Receptacles	1 lot as required	1	0.0062649630		
E13	The ground conductor sizes for grounding of electrical equipment, lighting fixtures, junction boxes etc. shall be as follows :					
	Distribution Boards, Lighting : 50 mm x 6 mm GI Flat Panels and motors above 90 KW	1 Lot as required	1	0.0040536213		
	Motors above 30 KW upto 90 KW : 35 mm x 6 mm GI Flat	1 Lot as required	1	0.0028006287		
	Motors above 5 KW upto 30 KW : 25 mm x 3 mm GI Flat	1 lot as required	1	0.0016213811		
	Motors upto 5 KW : 8 SWG GI wire	1 lot as required	1	0.0013267376		
	Lighting Fixtures, junction boxes, : 16 SWG G.I. wire conduits, etc.	1 lot as required	1	0.0077388541		
E14	Galvanised steel conduit 32mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	1 lot as required	1	0.1216126818		
E15	Electro galvanise Flexible steel conduit 32mm dia with accessories	1 lot as required	1	0.0033168441		
E16	Lightning protection Air terminal	1 lot as required	1	0.1378278407		
E17	Electrical equipment earthing materials including down conductors	1 lot as required	1	0.1216126818		
E18	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc. complete as per drawings & specifications..					
	600 mm wide	1 lot as required	1	0.0648599622		
	450 mm wide	Lot	1	0.0574894967		
	300 mm wide	Lot	1	0.0184261639		
	150 mm wide	Lot	1	0.0117928122		
E19	Aviation Distribution Board (ADB) with one 32A MCCB (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	Nos	4	0.0103189211		
	TOTAL Weightage OF SERVICE PART			92.07657027		

Supply Part

Sl.No	Description of item	Unit	Quantity	Rate(INR)	Amount(INR)
	Civil Works				
1	Supply one number Rack & Pinnion Type stack Elvator of proven make after obtaining approval from BHEL/ GSECL from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Lumpsum	1	2.6615335387	
ELECTRICAL WORKS					

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT

Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
ELECTRICAL WORKS (Supply, of following items as per specification)						
E1	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (MCCB) & 9 nos. of 100A MCCB (TPN) outgoing complete in all respects	No.	1	0.1893119974		
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 6 nos. 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA lighting transformer after considering loading of 80 to 85%, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser.	No.	1	0.3225002970		
E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer , 18 outgoing (16A SP MCBs)	No.	3	0.1960133696		
E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A TPN/MCCB incomer and 12 outgoing (16A, SP MCBs)	No.	6	0.3266886126		
E6	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A MCCB (TPN) Incomer , 8 outgoing (20A SP MCBs)	No.	1	0.0712013642		
	Aviation obstruction lights :					
	a) GEC Cat. No. ZA750(L) XENON	No.	12	0.0954927862		
	b) High intensity Type A flashing white light having intensity 2000-20000 candles & flashing frequency 40-60/min.	No.	9	1.0554555177		
	c) Medium intensity Type B flashing white light having intensity >2000	No.	3	0.0904680198		
	d) Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction	No.	2	0.0586364176		
	Flood light with 250W HPSV lamps with all controlgears & accessories	No.	8	0.0348480784		
E7	(B) Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories	No.	177	0.6227235236		
E8	63Amp welding switch socket with plug & other Mounting accessories	No.	18	0.1281648802		
E9	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug Switches etc.	No.	20	0.0368590625		
E10	Al conductor, XLPE insulated, extruded PVC inner sheath GS Wire Armoured, , Overall extruded PVC outer sheath, FRLS type 1100V grade.					
	a. 3½ C x95mm2 Al for connection between ACDB/ELDB/ welding sockets	1 Lot as required	1	0.2261690395		
	b. 3½ Cx35mm2 Al for Lighting panel incoming supply	1 Lot as required	1	0.1549676752		
	c. 4C x16mm2 Al Conductor for connection between ALP/ADB/Aviation Lights	1 Lot as required	1	0.0460714710		
E11	Control cable shall have annealed tinned copper conductor, 1100grade, PVC insulation, extruded PVC inner sheath , GS Wire Armoured, , Overall extruded PVC outer sheath, FRLS type.					
	a. 2.5 mm2	1 Lot as required	1	0.1340260974		
E11	Flexible trailing cable : Annealed tinned copper conductor, EPR insulated, reinforced with nylon cord, cores laid up, HDCSP inner sheathed , cotton taped & HDCSP overall sheathed confirming to IS:9968.	1 Lot as per system requirement	1	0.0712013642		
E12	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694 for the following.					
	a. 1CX6 mm2 Al from lighting panel to junction boxes	1 Lot as required	1	0.0293182088		
	b. 1CX2.5 mm2 Al from junction boxes to lighting fixtures(no. of wires per lead as required)	1 Lot as required	1	0.0544481021		
	c. 1CX6 mm2 Al from lighting panel to Receptacles	1 lot as required	1	0.0175910599		
E13	The ground conductor sizes for grounding of electrical equipment, lighting fixtures, junction boxes etc. shall be as follows :					
	Distribution Boards, Lighting : 50 mm x 6 mm GI Flat Panels and motors above 90 KW	1 Lot as required	1	0.0209415777		
	Motors above 30 KW upto 90 KW : 35 mm x 6 mm GI Flat	1 Lot as required	1	0.0175910599		
	Motors above 5 KW upto 30 KW : 25 mm x 3 mm GI Flat	1 lot as required	1	0.0100518899		
	Motors upto 5 KW : 8 SWG GI wire	1 lot as required	1	0.0067013722		
	Lighting Fixtures, junction boxes, : 16 SWG G.I. wire conduits, etc.	1 lot as required	1	0.0293182088		
E14	Galvanised steel conduit 32mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	1 lot as required	1	0.1800975685		
E15	Electro galvanise Flexible steel conduit 32mm dia with accessories	1 lot as required	1	0.0293182088		
E16	Lightning protection Air terminal	1 lot as required	1	0.3225002970		
E17	Electrical equipment earthing materials including down conductors	1 lot as required	1	0.2722405105		
E18	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc. complete as per drawings & specifications..					
	600 mm wide	1 lot as required	1	0.0850752016		
	450 mm wide	Lot	1	0.0588980610		
	300 mm wide	Lot	1	0.0283585127		
	150 mm wide	Lot	1	0.0239954315		
E19	Aviation Distribution Board (ADB) with one 32A MCCB (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	Nos	4	0.2146513401		

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price						
Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EART ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT						
Sl. No.	Description of Item	Unit	Quantity	% weightage w.r.t. the total amount	Rate(INR)	Amount(INR)
	Total Weightage OF SUPPLY PART			7.9234297238	XXXXXX	XXXXXX
	GRAND TOTAL Weightage (SERVICE PART & SUPPLY PART)			100.00	XXXXXX	XXXXXX
SL NO	DESCRIPTION			Weightage in %	XXXXXX	XXXXXX
1.0	Weightage OF SERVICE PART			92.07657027	XXXXXX	XXXXXX
2.0	Weightage OF SUPPLY PART			7.923429724	XXXXXX	XXXXXX
3.0	GRAND TOTAL Weightage (SERVICE PART & SUPPLY PART)			100.00	XXXXXX	XXXXXX

Volume II Price Bid

T.S.No BHE/PW/PUR/WNT2-CVL CHIMNEY/1434

Part C: Format to quote total Lumpsum Price

Job: CONSTRUCTION OF 275M TALL RCC SINGLE STEEL FLUE CHIMNEY INCLUDING RAFT FOUNDATION , INSULATION, AVIATION LIGHTING & ASSOCIATED ELECTRICAL AND EARTHING SYSTEMS ALL COMPLETE AT 1x800 MW , WANAKBORI TPS, KHEDA, GUJRAT		
Sl No 1	Lumpsum Total Price for entire Scope of Work as detailed in T.S.No BHE/PW/PUR/WNT2-CVL CHIMNEY/1434	In figures:
		In Words
Note: Bidders to quote Total Lumpsum Price in this format above which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.		

Date

Signature

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