

**BILL OF QUANTITIES (BOQ) / SCHEDULE OF QUANTITIES (SOQ) FOR Construction of RCC Columns of Turbo Blower 2 & 3, Deck slab of Turbo Blower 2 & 3, civil foundations for Suction air filter of unit 2 & 3 , Civil foundations of Cold blast pipe rack and its Steel Structures ,Civil foundations of Blow off silencer for Turbo Blower 2 & 3 and its structures.**

| ST. NO  | DESCRIPTION OF ITEM  | UNIT | QTY  | RATE (In Rs) |          | Amount (In Rs) |
|---|--|------|------|--------------|----------|----------------|
|   |  |      |      | IN FIGURES   | IN WORDS |                |
| <b>100</b>  | <b>EARTH WORK</b>  |      |      |              |          |                |
| <b>Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.</b> |  |      |      |              |          |                |
| 101   | Earth work in excavation in all types of soil including 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 up to 500 m, spreading/levelling of disposed materials etc all complete for following depths below ground level. |      |      |              |          |                |
| a   | Depth from ground level but not exceeding 2 m  | CUM  | 2179 |              |          |                |
| b   | Depth exceeding 2 m but not exceeding 4 m  | CUM  | 500  |              |          |                |
| 107   | <b>Back filling</b> up to 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 <b>selected materials from compulsorily excavated soil</b> available within a lead up to 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.  |      |      |              |          |                |
| a   | Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 100  |              |          |                |
| b   | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 2000 |              |          |                |
| 108   | <b>Back filling</b> up to 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 <b>directly from excavation</b> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.   |      |      |              |          |                |
| b   | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 1129 |              |          |                |
| 109   | <b>Extra over ST No. 101</b> for carriage of excavated earth/selected materials for every 1 km or part thereof beyond an initial lead of 500m.   | CUM  | 600  |              |          |                |
| 110   | <b>Back filling</b> up to any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness <b>using/with approved borrowed soil</b> (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.  |      |      |              |          |                |
| b   | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 50   |              |          |                |
| 111   | <b>Supplying and filling sand</b> up to any depth under floors, around foundations, plinths 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.   | CUM  | 5    |              |          |                |
| <b>200</b>  | <b>CONCRETE WORKS</b>  |      |      |              |          |                |

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|--------|---|------|------------|--------------|----------|----------------|
|        |   |      |            | IN FIGURES   | IN WORDS |                |
|        | <b>Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following, using OPC 43/53 grade of cement.minimum content of cement shall be as per IS-456.<br/>NOTE: NO COMPENSATON SHALL BE MADE TOWARDS EXCESS CONSUMPTION OF CEMENT REQUIRED AS PER MIX-DESIGN OVER AND ABOVE IS STIPULATION.</b> |      |            |              |          |                |
| 201    | Concrete of <b>grade M7.5</b> (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as <b>filling course</b> at any depth below finished floor level, under and around foundations/floors, mass fill etc.   | CUM  | <b>10</b>  |              |          |                |
| 202    | Concrete of <b>grade M10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc.   | CUM  | <b>30</b>  |              |          |                |
| 203    | Concrete of <b>grade M15</b> (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc.   | CUM  | <b>10</b>  |              |          |                |
| 204    | Concrete under floors, paving, plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.   |      |            |              |          |                |
| a      | M15 Grade   | CUM  | <b>5</b>   |              |          |                |
| b      | M20 Grade   | CUM  | <b>5</b>   |              |          |                |
| 205    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size <b>in foundations/substructure, grade slab, paving, drains, under floors</b> etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete <b>as per specification &amp; drawing for the following.</b>  |      |            |              |          |                |
| a      | M25 Grade   | CUM  | <b>350</b> |              |          |                |
| 206    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size <b>in superstructure</b> at any level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete <b>as per specification &amp; drawing for the following.</b>  |      |            |              |          |                |
| a      | M25 Grade   | CUM  | <b>140</b> |              |          |                |

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|--------|---|------|------------|--------------|----------|----------------|
|        |   |      |            | IN FIGURES   | IN WORDS |                |
| 208    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in <b>top decks of all machine foundations</b> supported on vibration isolation system (excluding supply and installation of vibration system) and <b>top deck of TG foundation</b> at all levels including addition of suitable plasticizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, levelling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc, but excluding formwork, staging, reinforcement, embeddments and temperature control of concrete.<br><b>Payment terms</b> - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%. |      |            |              |          |                |
| a      | M25 grade (with 20mm nominal size graded stone aggregate)   | CUM  | <b>190</b> |              |          |                |
| 209    | Extra over St. No. 205 to 208 for <b>controlling of temperature</b> of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.   | CUM  | <b>190</b> |              |          |                |
| 210    | Extra over ST Nos. 205 to 207 for <b>conducting UPV test</b> 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  | <b>20</b>  |              |          |                |
| 213    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>precast works</b> like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.  |      |            |              |          |                |
| a      | M 25 grade  | CUM  | <b>50</b>  |              |          |                |
| 215    | <b>Dismantling concrete</b> work for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable material up to a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.   |      |            |              |          |                |
| a      | Plain cement concrete of all grades   | CUM  | <b>1</b>   |              |          |                |
| b      | Reinforced cement concrete of all grades  | CUM  | <b>1</b>   |              |          |                |
| 216    | <b>Chipping of concrete</b> in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials up to a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .   | CUM  | <b>1</b>   |              |          |                |
| 217    | Extra over and above St No 216 for <b>cutting of reinforcement</b> , all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.   | SQCM | <b>1</b>   |              |          |                |

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|            |  |      |             | IN FIGURES   | IN WORDS |                |
| 218        | Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.  | CUM  | 1           |              |          |                |
| <b>300</b> | <b>FORM WORKS</b>  |      |             |              |          |                |
|            | <b>Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>                                    |      |             |              |          |                |
| 301        | <b>Fairface form work</b> with good quality water proof ply wood of required thickness and smooth surface <b>below finished ground floor level</b> for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.  | SQM  | <b>1500</b> |              |          |                |
| 302        | <b>Fairface form work</b> with good quality water proof ply wood of required thickness and smooth surface <b>above finished ground</b> floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.                                | SQM  | <b>700</b>  |              |          |                |
| 303        | <b>Fairface Formwork</b> with good quality water proof ply wood of required thickness and smooth surface <b>for TG</b> superstructure (above base raft level) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights. | SQM  | <b>450</b>  |              |          |                |
| 304        | Providing, fixing and removing <b>formwork in block-outs/pockets</b> and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.                |      |             |              |          |                |
| a          | Up to 150 mm depth   | Each | <b>15</b>   |              |          |                |
| b          | Pockets of depths more than 150mm and up to 300 mm depth   | Each | <b>44</b>   |              |          |                |
| c          | Pockets of depths more than 300mm and up to 600 mm depth   | Each | <b>40</b>   |              |          |                |
| d          | Pockets of depths more than 600mm and up to 1000 mm depth  | Each | <b>79</b>   |              |          |                |
|            |  |      |             |              |          |                |
| <b>400</b> | <b>REINFORCEMENT</b>   |      |             |              |          |                |
| 401        | Providing, straightening, cutting, bending, placing in position at any level, binding of <b>mild steel reinforcements</b> conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement and binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.            | MT   | <b>3</b>    |              |          |                |
| 402        | Providing, straightening, cutting, bending, placing in position at any level, binding in position of <b>steel reinforcements of TMT steel of grade Fe-415</b> conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc all complete.   | MT   | <b>50</b>   |              |          |                |
|            |  |      |             |              |          |                |
| <b>500</b> | <b>WATER PROOFING WORKS</b>  |      |             |              |          |                |
|            | <b>Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |             |              |          |                |

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|            |  |      |     | IN FIGURES   | IN WORDS |                |
| 507        | Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.  | SQM  | 100 |              |          |                |
| 513        | Providing and applying concrete structures two coats of ERPB (Epoxy resin based anticorrosive and chemical resistant paint) over a coat of CPCl (concrete penetrating bipolar corrosion inhibitor) with 300 to 325 micron DFT for protection of concrete against carbonation and chloride penetration in saline/marine environment all complete of approved make and as per manufacturer's recommendation. | SQM  | 100 |              |          |                |
| <b>600</b> | <b>JOINTS AND FILLERS</b>  |      |     |              |          |                |
|            | <b>Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |     |              |          |                |
| 601        | Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumen etc. all complete.  |      |     |              |          |                |
| a          | 12 mm wide joints.   | SQM  | 10  |              |          |                |
| b          | 20 mm wide joints.   | SQM  | 20  |              |          |                |
| c          | 25 mm wide joints  | SQM  | 10  |              |          |                |
| 602        | 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:   |      |     |              |          |                |
| a          | 12mm X 25mm  | RM   | 50  |              |          |                |
| b          | 20mmX25mm  | RM   | 50  |              |          |                |
| c          | 25mmX25mm  | RM   | 10  |              |          |                |
| 603        | Supplying and filling in position hot applied bitumen sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.  |      |     |              |          |                |
| c          | 20mmX25mm  | RM   | 54  |              |          |                |
| 606        | Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:   |      |     |              |          |                |
| d          | 230 mm wide and 6 mm thick   | RM   | 20  |              |          |                |
| <b>700</b> | <b>MS EMBEDMENTS</b>   |      |     |              |          |                |
|            | <b>Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |     |              |          |                |
| 701        | Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.   | MT   | 4   |              |          |                |
| 702        | Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.   | MT   | 1   |              |          |                |

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| 703   | Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.   | MT      | 8    |              |          |                |
| 704   | Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.  | MT      | 14   |              |          |                |
| 705   | Supplying, fabricating, erecting and installing following items in concrete/brick wall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.  |         |      |              |          |                |
| a   | MS pipes of all diameters  | Quintal | 10   |              |          |                |
| b   | PVC pipes / conduits of all diameters  | Quintal | 10   |              |          |                |
| c   | UPVC pipes / conduits of all diameters   | Quintal | 10   |              |          |                |
| <b>800</b>  | <b>GROUTING</b>  |         |      |              |          |                |
|   | <b>Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>  |         |      |              |          |                |
| 804   | 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 <b>ConbextraGP-1 or equivalent</b> . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).  | CUM     | 10   |              |          |                |
| 805   | 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 <b>Conbextra GP-2 or equivalent</b> . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).  | CUM     | 5    |              |          |                |
| <b>1300</b>   | <b>FINISHES TO CONCRETE / PLASTERED SURFACES</b>   |         |      |              |          |                |
| 1308  | Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete on underground concrete surfaces.   | SQM     | 1500 |              |          |                |
| <b>1800</b>   | <b>MISCELLANEOUS WORKS</b>   |         |      |              |          |                |
|   | <b>Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>  |         |      |              |          |                |
| 1801  | <b>Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm</b> in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill. | CUM     | 5    |              |          |                |
| 1812  | Laying of <b>earthing mats/rods</b> including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. <b>(Excavation &amp; Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)</b>   | MT      | 10   |              |          |                |
| 1813  | Providing <b>Earthing pit</b> as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.  | EACH    | 10   |              |          |                |
| 1834  | <b>Dewatering</b> of accumulated/stagnant water from existing pit (excavated by other agency) to keep the area dry & workable with necessary arrangement for draining out the pumping water.   |         |      |              |          |                |

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| a           | With 5 HP Pump  | Per Hr. | 50  |              |          |                |
| b           | With 10 HP Pump   | Per Hr. | 50  |              |          |                |
| <b>2300</b> | <b>STRUCTURAL STEEL</b>   |         |     |              |          |                |
|             | <b>Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |         |     |              |          |                |
| 2301        | Supply, fabrication and erection of <b>structural steel with mild steel rolled section / built up section / combination of both</b> conforming to IS:2062, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, ladders, stairs, MS grating, columns, beams, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, stringers, treads, landings, hand-rails etc including 2 coats of inorganic Zinc Silicate coating (one coat at shop and one coat after erection), connection design & preparation of fabrication drgs and obtaining approval of BHEL Engineering division, ..... contd..   |         |     |              |          |                |
|             | .... Contd,..... cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20 Dec C for welding over 20 mm and up to 40 mm & 66Dec C for welding over 40 mm and up to 63 mm & 110Dec C for thickness over 63 mm & use of low hydrogen/ radiogenic 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 to grade St-2 / St-3 of SIS 05 5900 or cl. 7.2.1.1 & 7.2.1.2 of IS:1477 (part-1), touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. |         |     |              |          |                |
| a)          | Supply, Fabrication & One Coat of Painting  | MT      | 100 |              |          |                |
| b)          | Erection, alignment, welding  | MT      | 100 |              |          |                |
| 2304        | Providing and applying two coats of <b>synthetic enamel paint</b> with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats including protection and cleaning, scaffolding etc. all complete.   | MT      | 100 |              |          |                |
| 2307        | Supplying, fabrication, erection and alignment of factory made <b>electroforged galvanised grating units</b> with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.   | MT      | 5   |              |          |                |
| 2309        | Extra over above ST NO. 2301 for <b>finishing</b> with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.   | MT      | 1   |              |          |                |
| 2312        | <b>Dismantling of steel structure</b> , lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.   | MT      | 1   |              |          |                |

**BILL OF QUANTITIES (BOQ) / SCHEDULE OF QUANTITIES (SOQ) FOR Construction of RCC Columns of Turbo Blower 2 & 3, Deck slab of Turbo Blower 2 & 3, civil foundations for Suction air filter of unit 2 & 3 , Civil foundations of Cold blast pipe rack and its Steel Structures ,Civil foundations of Blow off silencer for Turbo Blower 2 & 3 and its structures.**

| ST. NO                            | DESCRIPTION OF ITEM  | UNIT | QTY | RATE (In Rs) |          | Amount (In Rs) |
|-----------------------------------|--|------|-----|--------------|----------|----------------|
|                                   |  |      |     | IN FIGURES   | IN WORDS |                |
| 2313                              | Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:  |      |     |              |          |                |
| a                                 | In erected position  | MT   | 1   |              |          |                |
| b                                 | In fabrication yard  | MT   | 1   |              |          |                |
| 2314                              | <b>Re-erection of dismantled fabricated structural steel</b> members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members(weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete. | MT   | 1   |              |          |                |
| 2319                              | Supply, fabrication and fixing of <b>Mild steel pipe hand railing</b> of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..   | RM   | 58  |              |          |                |
| 2320                              | Supply, fabrication and fixing of <b>GI pipe hand railing (900 mm high)</b> of 32 mm/40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..  | MT   | 50  |              |          |                |
| 2321                              | Conducting <b>radiography test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | RM   | 100 |              |          |                |
| 2322                              | Conducting <b>ultrasonic test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.  | RM   | 100 |              |          |                |
| 2323                              | Conducting <b>ultrasonic test on steel plates</b> as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.  | SQM  | 50  |              |          |                |
| 2324                              | Conducting <b>magnetic particle test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | RM   | 50  |              |          |                |
| 2325                              | Conducting <b>dye penetration test on welds</b> wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)   | RM   | 50  |              |          |                |
| <b>TOTAL AMOUNT ( IN FIGURES)</b> |  |      |     |              |          |                |
| <b>IN WORDS Rs.. .....</b>        |  |      |     |              |          | <b>ONLY</b>    |