



Fabrication Plant, Jagdishpur
TENDER ENQUIRY No. BHE/FP/CVL/014

BILL OF QUANTITIES AND PRICE SCHEDULE FOR CONSTRUCTION OF FABRICATION SHOP AND ASSOCIATED WORKS INCLUDING ARCHITECTURAL WORKS AT JAGDISHPUR
(Incl.Corrigendum-I)

SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
1.1	Layout of building including making of reference pillars etc. complete.	Sq.M.	38,400			
1.2	Earth work in excavation in foundation trenches in ordinary soil including all lead and lift and disposal of surplus earth as directed	Cu.M.	34,560			
1.3	Anti-termite treatment by injecting chemical emulsion and creating a chemical barrier under foundations and floors, junction of wall and floor, along the external perimeter of expansion joints, as per IS 6313 (part-II 1981) at the rate as specified.	Sq.M.	27,325			
1.4	Filling of Earth in foundation trenches etc. with ordinary soil with 1.5m lift and 50m lead including dressing, and ramming.	Cu.M.	23,086			
1.5	Sand filling in plinth under floors including watering, flooding, ramming, consolidating and dressing complete including supply of all material, labour and T&P required for proper completion of work and also including all royalties, duties paid for sand supply from river banks.	Cu.M.	8,448			
1.6	Supply and filling of good earth as per specifications including filling in layers, watering, compacting, consolidating as per specifications upto required OMC/MDD and levelling, dressing complete. Work to include supply of material, labour, T &Ps, royalties paid for supply and required for successful completion of work as directed by engineer for all leads and lifts.	Cu.M.	19,200			
2	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) COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER AND INCLUDING COST OF MIX DESIGN AND APPROVED ADMIXURES FOR THE FOLLOWING INCLUDING. MS SCAFFOLDINGS AND CLAMPS FOR SUPPORTS AT HEIGHTS:					
2.1	Providing and laying cement concrete in 1:4:8, cement, coarse sand and 40mm gauge stone aggregates under foundation, floors & Grade Beams and curing complete excluding cost of form work and including cost of all materials and T&P required for proper completion of work	Cu.M.	2,500			
2.2	R.C.C.[M20] works below ground in Footings, Pile cap, Column, ground floor slab and pedestal with cement, coarse sand (F.M.-2.2) and 20mm gauge graded stone aggregates in the proportion to produce M-20 concrete excluding cost of reinforcement and shuttering and including cost of all materials and T&P required for proper completion of work.	Cu.M.	5,500			
2.3	R.C.C.[M20] works above ground at any level in Column, Gantry brackets with cement, coarse sand (F.M.-2.2) and 20mm gauge graded stone aggregates in the proportion to produce M-20 concrete excluding cost of reinforcement and shuttering and including cost of all materials and T&P required for proper completion of work.	Cu.M.	2,504			



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2.4	R.C.C.[M20] works in Beams with cement, coarse sand (F.M.-2.2) and 20mm gauge graded stone aggregates in the proportion to produce M-20 concrete excluding cost of reinforcement and necessary shuttering cantering etc. and including cost of all materials and T&P required for proper completion of work.	Cu.M.	1,430			
2.5	R.C.C.[M20] works in Lintels, Sun-shades Fins etc with cement, coarse sand (F.M.-2.2) and 20mm gauge graded stone aggregates in the proportion to produce M-20 concrete excluding cost of reinforcement and necessary shuttering cantering etc. and including cost of all materials and T&P required for proper completion of work.	Cu.M.	192			
2.6	R.C.C. [M20] works in roof Slabs with cement, coarse sand (F.M.-2.2) and 20mm gauge graded stone aggregates in the proportion to produce M-20 concrete excluding cost of reinforcement and necessary shuttering centering etc. and including cost of all materials and T&P required for proper completion of work.	Cu.M.	1,600			
2.7	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundations , under floors 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 excluding cost of reinforcement and necessary shuttering cantering etc. and including cost of all materials and T&P required for proper completion of work.	Cu.M.	5,000			
2.8	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure at all heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete. excluding cost of reinforcement and necessary shuttering cantering etc. and including cost of all materials and T&P required for proper completion of work.	Cu.M.	1,000			
2.9	Breaking existing concrete work including dismantling or demolishing at any level including cutting reinforcements , removing the rubbish within a lead of 2Km. inside or outside plant area as directed, including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, all complete and as directed by Engineer.	Cu.M.	326			
2.10	Dismantling and Demolishing all types of brick work including stacking of serviceable material and disposal of unserviceable material within 1 Km lead from the dismantled structure.	Cu.M.	384			
2.11	Boring, Providing and installing cast in situ single under reamed piles of specified diametre and length below pile cap in M35 cement concrete, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap including all material, labour, T & P, IMTEs and as directed by engineer. Also including cost of concrete but excluding cost of reinforcement which shall be measured item 4 of this BOQ (Length of pile for payment shall be measured upto the bottom of pile cap)					
2.11(a)	450mm dia. piles	Metre	600			



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2.11(b)	550mm dia. piles	Metre	2,400			
2.12	Extra over item no.2.11 for boring providing and installing cast in situ double under reamed piles, instead of single under ream of specified diameter and length. (Only the quantity of extra bulbs are to be paid)	1 bulb	192			
2.13	Conducting Vertical load test (initial and routine test)of piles above 50 tones and upto 100 tonne capacity pile in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer-in-charge and including all material, labour, T &P, IMTEs etc.	Each test	8			
2.14	Conducting Cyclic vertical load testing of pile in accordance with IS code of practice IS: 2911 (part IV) including preparation of pile head etc for single pile upto 50 tonne capacity including all material, labour, T &P, IMTEs and as directed by engineer.	Each test	4			
2.15	Conducting Lateral load testing of single pile in accordance with IS code of practice IS: 2911 (Part IV) for determining safe allowable lateral load on pile above 50 tonne and upto 100 tonne Capacity piles including all material, labour, T &P, IMTEs and as directed by engineer.	Each test	3			
3.0	FORMWORK					
	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, MS SCAFFOLDING WITH CLAMPS COMPLETE INCLUDING POCKETS ETC. AND INCLUDING PROPPING, SCAFFOLDINGS, SHUTTERING OIL ETC AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:					
3.1	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	Sq.M.	12,288			
3.2	Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	Sq.M.	16,067			
3.3	Extra over item no.3.1 & 3.2 for curved form work for beams, walls, trenches etc as per specification.	Sq.M.	384			
4	REINFORCEMENTS					



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4.1	Taking reinforcement steel material from BHEL. Straightening, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements confirming of grade Fe-415 confirming to IS:1786 including cost of binding wire, labour, transportation to & from stores to work site, unloading of steel from BHEL trailer/ trucks, verification, sagregation dia-wise etc complete all as per specifications, drawings and as directed by Engineer. Authorised lapping shall be measured. Reinforcement steel shall be supplied by BHEL as free issue material. Scrap generated shall be deposited at BHEL stores. Contractor shall make arrangement for unloading of steel directly from BHEL lorry, verification, sagregation of steel dia-wise, stacking in contractor's steel yard, security of material and it's insurance.	MT	1,800			
5	WATER PROOFING AS PER SPECIFICATIONS, DRAWINGS AND SPECIALISED MANUFACTURER'S RECOMMENDATIONS.					
5.1	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete. (8Kg/cum consumption is the average consumption considered)	KG	1,152			
5.2	Supplying and laying one layer of TAR felt or any other equivalent approved material at the junction of wall and roof as per direction, including necessary overlap, giving coat of approved mastic paint below the Tar felt and including supply of all material, labour and T&P required for proper completion of work.	Sq. M.	19			
5.3	Providing and laying Brick Koba Water Proofing treatment with 10 years of performance guarenteed to vertical and horizontal surfaces of depressed portions of WC, Kitchen, Roof Terracing etc., consisting of -	Sq. M.	1,900			
	1st course of applying cement slurry @4.4kg/sqm. Mixed with water proofing compound 'Impermo' of Snowcem or equivalent conforming to IS 2645 in recommended proportions.					
	2nd course of laying Cement Concrete using broken bricks/ brick bats 25mm to 100mm size with 50% of cement mortar 1:5 (1 cement: 5 Course sand) admixed with proprietary water proofing compound conforming to IS: 2645 over 20mm thick layer of cement mortar of mix 1:5 (1 cement: 5 course sand) admixed with proprietary water proofing compound confirming to IS: 2645 to required slope and treating simillarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.					
	After two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound confirming to IS: 2645					
	3rd course of finishing the surface with 20mm thick jointless cement mortar plaster of mix 1:3 (1 cement : 3 coarse sand) admixed with proprietary water proofing compound mixed as per manufacturers specification and finally finishing the surface with trowel with neat cement slurry and making of 300x300mm square.					
	The whole terrace so finished shall be flodded with water for a minimum period of two weeks for curing and for final leak test and after the surface is dried up then apply 4th course of blown or residual bitumen applied hot at 1.7kg per sqm on area.					



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
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	5th course of 400micron thick PVC sheet. (Overlaps at joints of PVC sheet shall not be less than 100mm wide and pasted to each other with hot blownbitumen @ 1.7kg/sqm). The average thickness of above treatment shall be 120mm and minimum thickness at khurras as 65 mm and the work shall be carried out under strict supervision of approved specialised agency for proprietary items and as directed by engineer.					
5.4	Providing and laying protective wearing course of average thickness 25 mm thick PCC (1:2:4) with 6 mm down aggregate laid in 1200 square mm panels alternatively cast reinforced with 0.56 mm dia galvanised chicken wire mesh with a gap of 6 mm between two adjacent panels gaps shall be filled with silicon sealant 6 mm deep filled over baker rod for expansion and contraction all complete with labour, material, equipment and as per specification/drawing and to the satisfaction of engineer .	Sq.M.	1,229			
5.5	Making Khurras 45x45 Cm with average minimum thickness of 5 Cm cement concrete 1:2:4 (1 cement:2 course sand: 4 graded stone aggregate of 20 mm nominal size) over PVC sheet 1m x 1m x 400 microns, finished with 12 mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	Each	31			
5.6	Screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness to maintain the required grade complete.	Cu.M.	154			
5.7	Applying 3 coats of bitumen of approved make on foundations before backfilling including supply of material,workmen and tools and plants required for application and as directed and approved by engineer.	Sq.M.	2,669			
6	SUPPLYING & INSTALLATION OF PREMOULDED JOINT FILLER OF APPROVED MAKE IN BETWEEN EQUIPMENT FOUNDATIONS, MAT FOUNDATIONS, PILE CAPS, WALLS, BASEMENT SLABS ETC. COMPLETE INCLUDING LABOUR, EQUIPMENT AND MATERIALS, SEALING OF JOINTS INCLUDING COST OF SEALING COMPOUND (POLYSULFIDE BASE SEALANT AS PER IS:12118) ETC. COMPLETE AS PER SPECIFICATIONS AND DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING: (Depth of the joint considered as 500 mm)					
6.1	12mm thick joints.	Sq.M.	77			
6.2	20mm thick joints.	Sq.M.	1,344			
6.3	25mm thick joints.	Sq.M.	250			
7	M.S. EMBEDMENTS INCLUDING STEEL SUPPLY BY CONTRACTOR					
7.1	Supply, fabricating and fixing of embedments, MS inserts , pipe sleeves, guide rails, angle pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer.	Kgs	25,000			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
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7.2	Supply, fabrication, transportation, delivery at site and erection, installation and alignment of MS Foundation bolts (Grade- 1 of IS: 432 & IS: 2062) assembly in concrete along with nuts, locknuts (IS: 1363, IS: 1364 & IS: 3138), washers, anchor plates, stiffener plates, protective tapes etc. upto & inclusive of 50mm diameter and upto 2000mm long, for columns including pipe sleeves, templates wherever necessary etc. all complete as per specifications and directed by the Engineer.	Kgs	15,000			
8	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:					
8.1	Providing and grouting of pocket holes , pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.	Cu.M.	125			
9	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC. COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
9.1	Providing and fixing 40mm thick solid core flush door shutters (single or double) with commercial faces and hard board edges. Core of solid core doors shall be of block board or wood particle board of approved make including all fixtures, Godrej make Mortice lock with 3 no keys and 2No master keys for each building with handle on both sides, shop painting/polishing as per specification all complete including test certificates. Flush door shutters to be of decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3ply veneering with vertical grains or cross bands and face veneers on both faces of shutters including ISI marked Stainless Steel butt hinges with necessary screws, including cost of all materials and T&P required for proper completion of work. (Rate to include cost towards aluminium tower bolts and door stoppers)	Sq.M.	154			
9.2	Providing and fixing anodized extruded aluminium windows and ventilators (single or double shutter) powder coated with approved colour including aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL , JINDAL or approved equivalent having minimum 2 mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.0mm thickness of approved make e.g SaintGobain, Modifloat Etc including snap fit type beading, concealed screws, fixtures with handle on both sides etc complete. Rates to include cost of floor springs . Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	Sq.M.	572			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
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9.3	Providing and fixing anodized extruded aluminium doors (single or double shutter) part pannelled and part glazed with prelaminated flat pressed particle board (NOVAPAN, ECOBOARD etc) of approved colour and make. Aluminium sections shall be powder coated with approved colour with aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL, JINDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 6.0mm thickness of approved make e.g SaintGobain, Modifloat Etc including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock Godrej make Mortice lock with 3 no keys for each door and 2 master keys for each building with handle on both sides etc complete. Aluminium section shall be smooth, free of stains,rust free, straight, mitred & jointed mechanically wherever required. Prelaminated board shall be 12mm thickness with all fixtures. Rates to include cost of floor springs of approved make	Sq.M.	46			
9.4	Providing and fixing aluminium glazed partition part pannelled and part glazed with prelaminated flat pressed particle board (NOVAPAN, ECOBOARD etc)boards of approved colour and make. Aluminium sections shall be powder coated with approved colour and of extruded sections of INDAL, JINDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating/ powder coated of minimum 15 microns thickness. Glazing shall be clear float glass of 5.5mm thickness of approved make e.g SaintGobain, Modifloat Etc including snap fit type beading, concealed screws, hold fast, fixtures (like tower bolts, handles, door stoppers with rubber shoes, "L" drops, stays, floor springs, hydrolic door closers etc),C.P. brass/ stainless steel screws, providing and fixing hinges/pivots, and making provisions for fixing of fittings where ever required including the cost of PVC/neoprene gas fits all complete, Godrej make Mortice lock with 3 no keys for each door and 2 master keys for each building with handle on both sides, necessary fillingup of gaps at the junctions,at top, bottom and sides, etc complete. Rates to include cost of floorsprings of approved make. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required.	SQM	19			
9.5	Providing and fixing of over head hydraulic door closers of "Yale" make or approved equivalent & quality as directed by Engineer.	NOS	8			
9.6	Supply and fixing ceiling fan Hook Box made of 18 gauge M.S. sheet and 16mmØ rod	Nos	61			
9.7	Supply and fixing powder coated rolling shutters of approved make and with mechanical arrangement for opening and closing including all standard accessories as per specifications made of required size MS laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5 cm long wire springs grade No 2 and MS top cover of required thickness for rolling shutters . The lath size shall be 80x 1.25mm MS laths with 1.25 mm thick top cover including ball bearing for rolling shutters and as directed by engineer.	Sq.M.	500			
10	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING INCLUDING. MS SCAFFOLDINGS AND CLAMPS FOR SUPPORTS AT HEIGHTS:-					



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10.1	Providing Brick work of thickness between 230mm and 254mm with 1st class bricks of class designation 100 in 1:4 cement and sand (F.M. 1.25) mortar in foundation & plinth , including supply of all materials, labour and T&P required for proper completion of work as directed by engineer but excluding plastering and painting, using bricks of best locally available quality of nominal dimensions as per specification including supply of all material, labour and T & P required for proper completion of work.	Cu.M.	494			
10.2	Providing Brick work of thickness between 230mm and 254mm with 1st class bricks of class designation 100 in cement mortar 1:4 (1cement : 4 coarse sand) in walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, complete but excluding plastering and painting, using bricks of best locally available quality of nominal dimensions as per specification including supply of all material, labour and T & P required for proper completion of work.	Cu.M.	2,500			
10.3	Providing Brick work with 1st class bricks of class designation 100 of thickness between 115mm and 127mm in cement mortar 1:3 (1 cement : 3 coarse sand) in partition walls, chambers etc. at all heights, places and position above or below plinth/graded level including providing 2 nos. 6mm dia. MS bars at every third layer, raking out joints, curing, scaffolding etc. all complete using bricks of best locally available quality of nominal dimensions excluding plastering and painting as per specification. Cost of providing reinforcement shall be measured separately under item 4.1	Sq.M.	5,760			
10.4	Making openings in existing finished brick wall or partition wall including making good the broken edges/surface with cement mortar, fixing concrete section as lintel (concrete section to be paid separately), painting, finishing to match with existing finishing, scaffolding/ staging works, gas cutting of reinforcement/structural work, cleaning and removing of all debris within 1 Km lead etc. all complete and as directed by Engineer.	Sq.M.	403			
11	DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
11.1	Damp Proof Course 25mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification.	Sq.M.	653			
12	CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING INCLUDING. MS SCAFFOLDINGS AND CLAMPS FOR SUPPORTS AT HEIGHTS:-					
12.1	10mm thick plastering in 1:4 cement and sand (FM 1.25) mortar over brick work and RCC work including rounding, chamfering, etc. finished smooth including cost of all material labour and T&P required for proper completion of work.	Sq.M.	23,274			
12.2	15mm thick plastering in 1:4 cement and sand (FM 1.25) mortar over wall or half brick wall and RCC including rounding, chamfer, etc. finished smooth including cost of all material labour and T&P required for proper completion of work	Sq.M.	16,128			



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12.3	10mm thick plastering in 1:3 cement and coarse sand (FM 2.2) mortar in ceiling including rounding, chamfer, etc. finished smooth including cost of all material labour and T&P required for proper completion of work.	Sq.M.	1,732			
12.4	Providing 15mm thick neat plaster in cement mortar 1:4 (1 cement:4 sand) in drains/culverts as per specification.	Sq.M.	307			
13	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING INCLUDING. MS SCAFFOLDINGS AND CLAMPS FOR SUPPORTS AT HEIGHTS:-					
13.1	Two or more coats of white washing with lime to give an even shade on ceiling including a priming coat complete.	Sq.M.	2,112			
13.2	Two or more coats of colour wash as per IS 627 of approved brand and manufacture to give an even shade on walls including a priming coat as per specifications.	Sq.M.	1,920			
13.3	Two or more coats of water proofing cement paint of approved brand and manufacture & of required shade to give an even shade on walls complete.	Sq.M.	13,210			
13.4	Two or more coats of distempering with oil bound washable distemper as per IS:428 of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete over P.O.P.	Sq.M.	10,000			
13.5	Painting walls with two coats of Plastic Emulsion paint of approved brand and manufacturer of required shade over new surface including one priming coat of water proof oil bound approved primer and finished with BIRALA or equivalent Putty after thoroughly brushing the surface to give an even shade including cost of all material, labour and T&P required for proper completion of work.	Sq.M.	4,000			
13.6	Painting walls with two coats of Acrylic Smooth exterior paint "Trump/Apex paint" or equivalent of required shade over new work (two or more coats applied @3.28ltr/10sqm) over and including base coat of water proofing cement paint "Snowcem Plus" or equivalent applied @2.20kg/10sq. including curing, cost of all material, labour and T&P required for proper completion of work.	Sq.M.	8,000			
13.7	Painting two coats with high gloss super synthetic enamel paint such as Luxol3, or equivalent approved brand or manufacturer over one coat of red oxide paint on steel and other metal surfaces after cleaning and brushing the surface free of dirt, dust, rust etc. to give an even shade including cost of all material, labour and T&P required for proper completion of work.	Sq.M.	5,760			
14	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
14.1	Providing and laying granite stone slab of 20mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	Sq.M.	115			



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(Incl. Corrigendum-I)

SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
14.2	Providing and laying Heavy Duty dust pressed Ceramic Tiles of size 300x300 (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO, ORIENT, SOMAY KAJARIA, SPARTECH or equivalent make in colours such as white, Ivory, Grey, Fume Red Brown, laid on 20mm thick cement mortar 1:3 (cement : 3 coarse sand) including pointing the joints with white cement and matching pigment etc., complete including cost of all materials and T&P required for proper completion of work thick of reputed manufacturer of approved finish shade and colour.	Sq.M.	96			
14.3	Providing and fixing White glazed tiles of size 150x150mm, 5.5mm to 6mm thk in dado , projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts coarse sand by weight, fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry, including pigments, curing etc all complete.	Sq.M.	230			
14.4	Providing and laying screed concrete 1:1.5:3 by volume laid in slope (with 6 to 10mm nominal size stone chips) including all labour, materials, scaffolding etc. complete for all lifts, all leads and of 50 mm average thickness.	Sq.M.	1,152			
14.5	Providing and laying 50 mm thick heavy duty I.P.S flooring in specified panels with glass strips with metallic hardener pigmented topping comprising of uniform graded treated iron particles in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) laid on top of 230mm boulder soling with aggregates of size 63mm & down packed with small aggregates of size 12.5mm and down and moorum compacted with roller including top layer of 12mm thick metallic concrete complete. Proportion of the metallic hardener shall be as specified or as indicated by the manufacturer. However, in absence of any such direction 1 part metallic hardener shall be mixed dry, with 4 parts cement, by weight. To this mixture 6 mm nominal size stone chips shall be added in proportion of 1 part cement (mixed with hardener) to 2 parts of stone chips by volume and uniformly mixed. Minimum quantity of water shall be added to make it workable.	Sq.M.	30,000			
14.6	Providing and laying 50 mm thick heavy duty cement concrete with metallic hardener pigmented topping comprising of uniformly graded treated iron particles in skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete in proportion as specified in item 14.5 above.	Sq.M.	845			
15	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.					
15.1	Providing and fixing PVC (heavy duty) rain water drainage system and down commers of size 160mm of approved colour and make including all couplers, end caps, tee, elbow with outlets, clamps, brackets, clips, rubber gaskets, lock, specials, bends, shoe, heads and necessary accessories etc complete as per specifications and as directed by engineer.	RM	4,608			
16	MISCELLANEOUS ITEMS					



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
16.1	Providing and fixing in position 25mm wide and 25mm thick blown bitumen in expansion joints as per specification.	RM	211			
16.2	Clearing the area including antiweeding, uprooting of trunks, vegetation, grass bushes etc. including removing of existing rubbish and broken insulators and its disposal upto 1 km inside or outside plant area as directed and dressing and levelling the ground at existing grade and work to be executed as approved by engineer. rates to include cost of all supplied materials, labours and T & Ps for successful execution of the item.	Sq.M.	30,000			
16.3	Providing and fixing bitumen impregnated fibre joint filling board of 25 mm thickness, fillers along with PVC water bar etc for expansion joint in water retaining structures all complete as per specifications, drawing and as directed by Engineer.	RM	211			
16.4	Providing and laying 50 mm thick interlocking machine made clay brick paver flooring over 150 mm thick bed of lean concrete 1:5:10 (1 cement: 5 coarse sand: 10 graded stone aggregate)	Sq.M.	384			
16.5	Supplying and laying of rounded gravels 40mm thick in transformer yards, switch yard floors etc. as directed by Engineer.	Cu.M.	96			
16.6	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing conforming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accessories as per specification all complete. Excavation, Concrete ,reinforcement and backfilling quantities as per drawing for erecting chain link fencing shall be measured in relevant items of this BOQ.	Sq.M.	269			
16.7	Providing and fixing fire proof steel door shutters (single or double shutter) conforming to IS:3614(part-1 & part-2). Shutters shall be minimum 60mm thick flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers with mineral wool insulation, primer and epoxy based painting including door frame, all fittings complete as per specification. and shall be TAC approved with minimum 2 hrs. fire rating.	Sq.M.	46			
16.8	Providing and encasing of structural steel member with masonry work around flanges, webs etc and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification.	Cu.M.	38			
16.9	Providing services of unskilled manpower at BHEL office with skills in dealing with the office environment .(one manmonth is calculated on the basis of normal working hours as per minimum wages act)	Manmonth	50			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
16.10	Providing services of semiskilled manpower at BHEL office e.g Plumber, Electrician, Carpenter etc with skills in dealing with the office environment as well as possessing proficiency of their assigned work and having skills to execute assigned work with good workmanship .(one manmonth is calculated on the basis of normal working hours as per minimum wages act)	Manmonth	20			
16.11	Providing and fixing UV stabilised fibreglass reinforced plastic sheet roofing up to any pitch including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8 mm dia GI plain/ bitumen washers but excluding the cost of purlin , rafters, trusses etc. The sheets to confirm as per IS: 10192 and IS 12866. The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified with 2mm thick corrugated or step-down or flat as specified.	Sqm	500			
16.12	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within plant premises .	Sqm	10,000			
16.13	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking in BHEL stores within plant premises.	Kgs.	2,000			
17	M.S. GATES.					
17.1	Supply, fabrication, erection of motorised M.S entrance gates as per drawing and specifications complete with all fixtures .Excavation, Concrete ,reinforcement and backfilling quantities as per drawing for erecting gate shall be measured in relevant items of this BOQ .	Kgs.	4,000			
18	SANITARY					
	SUPPLY AND FIXING SANITARY ITEMS AS PER ITEM DESCRIPTION INCLUDING ALL ACCESSORIES, SPECIALS, BENDS ETC. AND INCLUDING ALL MATERIAL, LABOUR, T&Ps ACCORDING TO MANUFACTURER'S SPECIFICATION , DRAWINGS AND AS APPROVED AND DIRECTED BY ENGINEER					
18.1	Providing & fixing White Vitreous China water closet Squatting Pan Orissa Pattern W.C. , Pan (PARRYWARE, HINDUSTAN or approved equivalent make)of size 580x440 with integral type Foot Rest, Flush Pipe & Over flow arrangement with 100 mm sand cast Dron- P or S Traps 10 ltr. Low level P.V.C. flushing Cistern (of approved make) with fittings, CI/MS brackets 32mm dia. Flush Pile with fittings and clamps.	Each	58			
18.2	Providing & fixing White Vitreous China Flat back or wall corner type, lipped front Urinal Basin (PARRYWARE, HINDUSTAN or approved equivalent make)of size 460x260x350 size with 5ltrs white PVC two way electronic controlled automatic flushing cistern with standard flush pipe and C.P. brass spreaders with fitting and CS/MS brackets.	Each	69			
18.3	Providing & fixing White Vitreous China Squatting Plate (PARRYWARE, HINDUSTAN or approved equivalent make) with an integral longitudinal flushing pipe, white PVC automatic flushing cistern, Perryware/Hindware/Seabrid/Orient (coral) with fitting standard size G.I. flush pipe for back and front flush with standard	Each	23			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
18.4	White Vitreous China Wash Basin (PARRYWARE, HINDUSTAN or approved equivalent make) of size 630x450 with CS/MS brackets, 32 mm C.P. brass Waste of standard pattern, including painting of fittings and brackets, with single 15m C.P. Brass Pillar Cock.	Each	69			
18.5	Providing & fixing PVC Flexible waste Pipe, of 40mm dia. for sink or wash basin coupling etc. complete.	Each	138			
18.6	Providing & fixing Stainless Steel Jali (Grating) with or without hole for waste pipe for N. Trap. Weight not less than 70 grms.	Each	219			
18.7	Providing & fixing Mirror of superior quality and size 600mmx450mm with bevelled edge with 6mm thick hard board back fixed to wall with wooden cleats and C.P. brass screws & washers complete.	Each	69			
18.8	Providing & fixing Mirror of superior quality of Rectangular shape 1500x450mm with plastic moulded frame of approved make and shade with 6mm thick hard board back complete.	Each	8			
18.9	Providing & fixing CI Water or Vent pipe 100 mm internal dia.	RM	780			
18.10	Providing & fixing CI Water or vent pipe 75 mm internal dia.	Each	530			
18.11	Providing & fixing 100mm dia. Inlet & 75mm dia outlet, Sand cast Iron Nahani Trap of self cleaning design with sand cast iron screwed down or hinged grating with or without vent arm complete.	Each	204			
18.12	Providing & fixing Cutting holes in brick masonry or R.C.C. for 100/75mm dia sand cast iron pipes and making good the same with cement concrete 1:3:6 cement, coarse sand and 12.5mm nominal size grit and plastering the surface with 1:4 mortar	Each	150			
18.13	Providing and laying non-pressure NP2 class (light duty) RCC pipes with collors jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete for following dia. Of pipes.					
18.13.1	150mm	RM.	250			
18.13.2	250 mm	RM.	400			
18.13.3	450 mm	RM.	300			
19.00	<u>WATER SUPPLY</u>					
	SUPPLY AND FIXING WATER SUPPLY AS PER ITEM DESCRIPTION INCLUDING ALL ACCESSORIES, SPECIALS, BENDS ETC. AND INCLUDING ALL MATERIAL, LABOUR, T&Ps ACCORDING TO MANUFACTURER'S SPECIFICATION , DRAWINGS AND AS APPROVED AND DIRECTED BY ENGINEER					



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
19.1	Providing & fixing Concealed G.I. pipe fitting of 15mm dia. Nominal bore including G.I. fittings as required including painting with anti-corrosive bitumenastic paint and making good the chase	RM	795			
19.2	Providing and fixing Open G.I. pipe fitting of 20mm dia. Nominal bore including G.I. fittings as required including trenching and refilling including trenching and refilling.	RM	1,036			
19.3	Providing & fixing Open G.I. pipe fitting of 32mm dia. Nominal bore including G.I. fittings as required including trenching and refilling.	RM	346			
19.4	Making connection of G.I. distribution branch with G.L/PVC mains of size 50 to 80mm nominal bore including clamps etc. complete.	Each	12			
19.5	Providing and fixing 32mm dia. brass Gate Valve ISI marked (IS: 778 Class 1, PN-1 Mpa) with wheel of approved quality (screwed end) 20 mm nominal bore.	Each	12			
19.6	Providing and fixing 20mm dia. Nominal bore Brass Ball Valve.	Each	23			
19.7	Providing and fixing 15mm dia. Nominal bore Plasticized P.V.C. connection pipe with brass union 45 cms. Length.	Each	219			
19.8	Providing and fixing 150mm dia. C.P. Brass Shower Rose with 15mm dia inlet.	Each	23			
19.9	Providing and fixing 15mm dia. Nominal bore C.P. Brass long body Bib Cock of approved quality confirming to IS:8931 weighing not less than 690 gms.	Each	81			
19.10	Providing and fixing 15mm dia. Nominal bore C.P. Brass Stop Cock (concealed) of approved quality confirming to IS:8931.	Each	23			
19.11	Providing and fixing 15mm dia. Nominal bore C.P. Brass Angle Valve of approved quality confirming to IS:8931	Each	219			
19.12	Providing and placing on terrace 1000ltrs. Capacity high density polyethelene water storage tank of approved brand and manufacturer e.g Sintex or equivalent with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes and the base support for tanks and including float ball valve of standard quality.	Each	23			
19.13	Supply and fixing 100mm internal dia S.W. Pipe over a concrete bed laid in 1:4:8 Cement, fine sand (F.M. 1.25) and 40mm gauge stone aggregate including jointing of pipes with Jute and 1:1 cement and fine sand.	RM	415			
19.14	Supply and fixing 150x100mm size square mouth S.W. Gully Trap P type, with C.I. grating, brick masonry chamber, and water tight C.I. cover frame 300x300mm size inside The wt. of cover & frame to be not less than 7.2 kg.	Each	46			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
19.15	Constructing brick masonry Man holes chamber in 1:4 cement mortar of inside size 900x800 and 450mm, with circular C.I. cover & frame(Heavy Duty) of size 560 internal diameter along with inside plaster 15mm thick with 1:3 cement mortar along with providing galvanised rungs as per drawing with a floating coat of neat cement and making channels in cement conc. 1:2:4 mix and finishing smooth including curing and testing.	Each	23			
19.16	Providing & fixing & testing in position of ISI marked (IS: 1239) GI pipes (class-B) complete with all GI fittings including trenching and refilling etc (external work) including painting of GI pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality for following dia. pipes for Main Water supply and distribution including embedding the pipes 450mm below ground level, laid over soft sand bed including bends, Tees , specials, clamps etc. including complete supply as per manufacturer's specifications including cost of all material, labour and T & P required for proper completion of work.					
19.16.01	100 mm dia nominal bore	RM	1,700			
19.16.02	80 mm dia nominal bore	RM	300			
19.16.03	65 mm dia nominal bore	RM	250			
19.16.04	50 mm dia nominal bore	RM	500			
19.16.05	40 mm dia nominal bore	RM	500			
19.16.06	32 mm dia nominal bore	RM	500			
19.16.07	25 mm dia nominal bore	RM	100			
19.16.08	20 mm dia nominal bore	RM	250			
19.17	Providing & fixing & testing in position of ISI marked (IS: 1239) GI union in existing GI pipe line, cutting and threading the pipe and making long screws including excavation, refilling the earth or cutting of wall and making good the same complete wherever required including complete supply as per manufacturer's specifications including cost of all material, labour and T & P required for proper completion of work.					
19.17.01	100 mm dia nominal bore	Each	100			
19.17.02	80 mm dia nominal bore	Each	200			
19.17.03	65 mm dia nominal bore	Each	200			
19.17.04	50 mm dia nominal bore	Each	200			
19.17.05	40 mm dia nominal bore	Each	200			
19.17.06	32 mm dia nominal bore	Each	200			
19.17.07	25 mm dia nominal bore	Each	200			
19.17.08	20 mm dia nominal bore	Each	200			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
19.18	Providing and laying & testing in position ISI marked (IS:1536) S & S Centrifugally cast (Spun) iron pipes (Class LA) suitable for tyton joints with rubber gasket 100 mm dia.	RM	250			
19.19	Providing and laying S&S CI standard specials such as tee, bends, collars tapers and caps etc as per IS: 1538. Suitable for tyton joints with rubber gasket upto 300 mm dia.	Quintal	5			
19.20	Providing push-on-joints to centrifugally (spun) cast iron pipes including testing of joints and including the cost of rubber gasket 100 mm dia.	Each	850			
19.21	Providing , fixing ISI marked (IS: 780) Class II (PN-1.6 Mpa) CI Sluice Valve (with cap) complete with bolts, nuts, rubber insertion flanges etc complete for 100 mm dia.	Each	5			
19.22	Constructing brick masonry chamber 300 x 300 x 500 mm, inside with F.P.S. brick work in cement mortar 1: 5 (1 cement : 5 fine sand) for Stop Cock , with C. I. surface box 100 x 100 x 75 mm (inside) with hinged cover fixed in cement concrete cover 1:2:4mix (1cement : 2 coarse sand:4 grade stone aggregate 20mm nominal size); necessary excavation, foundation concrete 1:5:10 (1 cement :5 fine sand: 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.	Each	20			
19.23	Constructing brick masonry chamber 600 x 600 x 750 mm inside with F.P.S. brick work in cement mortar 1:5 (1 cement : 5 fine sand) for Sluice Valve , with C. I. surface box 100 mm top diameter, 160 mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab with 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 grade stone aggregate 20 mm nominal size); necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand: 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.	Each	4			
19.24	Design and Construction of R.C.C. leakproof Under Ground Tank with supply of all material, labour, shuttering, scaffolding, including supply, fixing and connecting ISI marked (IS 1536) CIDF (class-B) inlet, outlet, overflow and washout pipes and isolating valves complete as required including grouting of base and walls (design to meet fire norms and be approved by BHEL and their appointed architect)					
	200 KL capacity	Each	1			
19.25	Providing, fixing, testing and commissioning of single stage, horizontal, centrifugal, 2 pole, single/three phase, 50 HZ, AC, monoblock pumps (as per IS : 9079) incorporating C.I. casing and frame, carbon steel shaft, bronze shaft sleeve mounted on grease lubricated deep groove ball bearings, cast iron impeller, TEFC induction motor directly coupled to the pump, IP44 protection, class B insulated, C.I. body, hydraulically and dynamically balanced to give vibration free operation, with mechanical seal arrangement, fixed on a base plate with suitable vibration eliminator pads complete with RCC foundation, bolts grouted in 100 mm thick CC blocks of 1:2:4, electrical control panel with suitably rated DOL / star-delta starter fixed to wall complete with pressure gauge on the delivery side including provision of foot valve, non-return valve, isolating valves, strainer on suction and delivering sides as required, suction and delivery headers complete in all respects.. The duty of pump shall be -					
	(Make : Kirloskar/Mather & Platt)					
	Discharge : 2000 liter per minute at 50 meter head	set	2			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
19.26	Construction of bore well : All items include supply and fixing including labour, material and T&P charges for complete work for drilling 600 /500 mm dia.bore hole with R.C.Machine.					
19.26.01	Drilling 600 mm dia bore From Ground level to 65 metres.	RM	130			
19.26.02	Drilling 500 mm dia bore From 65 to 130 metres.	RM	130			
19.26.03	Drilling 450 mm dia bore Beyond 130 metres.	RM	4			
19.26.04	Extra for drilling in sand stone, stone and boulders etc. over and above rates in above item.	RM	2			
19.26.05	Supply of MS, ERW (As per IS : 4270) pipes & accessories at site of work for following diameters					
19.26.06	300 mm dia housing pipe	RM	100			
19.26.07	200 mm dia casing pipe	RM	100			
19.26.08	Supply of 150 mm dia LCG Johnson screen	RM	60			
19.26.09	Lowering of MS, ERW pipes / screen including jointing etc. complete into drilled hole for following diameters					
19.26.10	300 mm dia housing pipe housing pipe 7.1 mm thick	RM	100			
19.26.11	200 mm dia casing / screen pipe sloated	RM	160			
19.26.12	200 mm dia ms plain pipe 7.1mm barrel thickness	RM	20			
19.26.13	Providing and packing 1.6 to 4.8 mm size Lal Kuwan Pea gravel duly washed alround the pipe with shrouding charges.	cum	80			
19.27	Providing, fitting, fixing and lowering in position including cutting, jointing of following accessories.					
19.27.1	300 mm. dia. well cap	Each	2			
19.27.2	300 mm. dia. M.S. housing clamp, rings	Each	2			
19.27.3	300x 200 mm. dia. MS reducer, nipples	Each	2			
19.27.4	300x 200 mm MS centre guide ring	Each	16			
19.27.5	200 mm. dia. bail plug	Each	2			
19.27.6	300 mm dia M.S. Ring	Each	16			
19.27.7	200 mm dia M.S. Ring	Each	30			
19.27.8	Borewell assembly support made of ISMB 150x 3m long, ms plates,well plugs	Each	2			
19.28	Transport of Rig machine and equipments including octroi and taxes.	Lump sum	2			
19.29	Erection of Rig machine and its dismantling after completion of work.	Lump sum	2			
19.30	Transportation, Erection & Dismantling of over pumping unit at site	Lump sum	2			
19.31	Development of Tubewell by over pumping unit/ compressor	Hrs	300			
19.32	Chemical and bacteriological examination of water.	Job	2			
19.33	Sanitary sealing of tubewell as per specifications.	Job	2			
19.34	Disinfection of the tubewell	Job	2			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
19.35	Construction of auxillary tubewell if required or water supply charges required for construction of tubewell	Job	2			
19.36	Providing submersible pump of approved make with suitable capacity motor having 2000 liter per minute discharge working on 415 Volts + 6% volts, 50 Hertz electrical supply and required head as per water table including electrical control panel /switchgears of legrand / ABB/ L&T make with S/D starter, ammeter, voltmeter, single phasing preventor cutouts, protection rings, transformer oil and all motor protection arrangement complete in all respects including main pipes and valves. (Pump make : KSB/Groundfos as approved by engineer)	Set	2			
19.37	Providing 80 mm dia. MS column pipe (heavy grade - class C, IS : 1239) threaded & socketed with interlocking arrangement complete.	RM	90			
19.38	Providing 80 mm. dia butterfly valve.	Each	4			
19.39	Providing 80 mm dia non return valve.	Each	2			
19.40	Providing 80 mm. dia. Rubber packing with nut & bolts.	Job	2			
19.41	Providing 80 mm dia CIDF Bend (IS : 1538)	Each	4			
19.42	Providing 80 mm dia CIDF Tee (IS : 1538)	Each	2			
19.43	Providing 80 mm dia CIDF Pipe (IS : 1538)	RM	6			
19.44	Providing 3 core PVC insulated armoured submersible cable.	RM	100			
19.45	Fabrication of tubewell connection line suitable for accommodating valves and pressure gauge by providing bends and Tees as required.	Job	2			
19.46	Providing pressure gauge 100 mm dial graduated 0-10 kg/cm ² with gun metal isolating cock.	Each	2			
19.47	Fixing, testing and commissioning for erection and lowering of submersible pump, column pipe, valves, submersible cable up to the control panel, supporting clamps, cable clips, pressure gauge, connection line and all other accessories required for the proper completion of the work as desired on the site and by the Engg-in-charge.	Job	2			
19.48	Providing, erection, testing & commissioning of electro mechanical type liquid chlorinator pumping plant for disinfection complete in all respects	Set	2			
19.49	Supply and laying of 200mm MS DF pipe line incl. packing, nut bolts etc and supporting pillar at different heights as per requirements and as directed by engineer	RM	250			
19.50	Interconnection with old rising mains and providing and fixing CI special as per requirement e.g fixing of T-slucice valve etc	Job	2			



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BILL OF QUANTITIES AND PRICE SCHEDULE FOR CONSTRUCTION OF FABRICATION SHOP AND ASSOCIATED WORKS INCLUDING ARCHITECTURAL WORKS AT JAGDISHPUR
(Incl. Corrigendum-I)

SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
20.00	STRUCTURAL STEEL WORKS: All items for fabrication should include shop fabrication of complete structures involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders and all types of steel structures and members, making shop fabrication drawings as per specifications including shop painting with a coat of primer and also inclusive of all necessary quality test to the satisfaction of engineer and loading, transportation for shop fabricated steel structures to site including unloading, stacking, handling, re-handling, preservation and verification of shop fabricated steel structures at site for the following details and sub-items. (Structural steel shall be supplied by BHEL as free issue material. Scrap generated shall be deposited at BHEL stores. Unloading of steel directly from BHEL lorry, it's verification, saggregation of steel type/size-wise, steel stacking in contractor's steel yard, security of steel and it's insurance shall be in contractor's scope)					
20.01	Fabrication, erection, alignment, welding, primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate as per IS:2074 & IS:1477 (Parts I & II). One coat to be applied at shop and the other after erection) of structural steel made from mild steel conforming to IS:2062, pipes conforming to IS:1161/IS:1239, chequered plate conforming to IS: 3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails, toeplates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays,	MT	1,750			
	louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts & nuts (weight of erection bolts & nuts not payable). Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately, assembly, edge preparation, preheating (& use of low hydrogen/ radiogenic electrodes as per specification) 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 (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures.					
20.02	Providing & application of synthetic enamel paint of Berger make and colour in coats of minimum 50 micron over steel sections(DFT) already having primer coats at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer.	MT	1,750			



Fabrication Plant, Jagdishpur
TENDER ENQUIRY No. BHE/FP/CVL/014

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(Incl. Corrigendum-I)

SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
20.03	Supplying, fabrication, transportation, erection and alignment of factory made electroforged gratings with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade 'C' mild steel bolts and nuts to be paid separately under all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) followed by two coats of red oxide zinc-chromate primer and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer.	MT	25			
20.04	Extra over item no 20.03 above for finishing the fabricated grating unit with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, as per specifications, drawings and instructions of Engineer instead of painting with 2 coats of red oxide primer followed by two coats of enamel finish paint.	MT	25			
20.05	i) Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the Engineer.	Quintal	50			
20.06	ii) Supply and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work complete as per specification, drawings and instructions of the Engineer.	MT	5			
20.07	Dismantling of steel structure at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to 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) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	MT	5			
20.08	Dismantling of G.I. sheet in cladding at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	SQM	500			
20.09	Addition to, alterations in and/or modification of " Erection Marks " either in erected position or in the shop including cutting of parts, gouging 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), complete as per specifications, drawings and instructions of the Engineer.					
20.09.01	In erected position	MT	10			



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20.09.02	In fabrication yard	MT	10			
20.10	Re-erection of dismantled fabricated structural steel members requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately 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) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	MT	42			
20.11	Conducting radiography test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	100			



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SL NO.	DESCRIPTION OF ITEM OF WORK	UNIT	Qty	Rates		AMOUNT(Rs)
				In Figures, Rs	In Words, Rs	
20.12	Conducting ultrasonic test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	100			
20.13	Providing corrugated GS sheet roofing including vertical/ curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia. With bitumen and GI limpet washers or with GI limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto any pitch in horizontal/ vertical or curved surfaces) excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. CGS Sheet to be 1.00 mm thick with zinc coating not less than 275 gm/sqm.	SQM	500			
					SUB-TOTAL "A"=	
21.00	Service tax including edu. cess and SAH edu. cess @ 4.12% on sub-total "A" as per SCC Clause 8.3				SUB-TOTAL " B"=	
					GRAND TOTAL =(A+B)=	