

BHEL: PS-WR
TS; BHE/PW/PUR/UKT-CVL/573
REVISED PRICE BID- PART-II, VOL-III (REVISION-01)

REVISED SCHEDULE OF QUANTITIES FOR MAIN CIVIL PACKAGE 1X500 MW TPS GSECL UKAI #6						
SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:(Measurement shall be done as per IS 1200)					
101	Excavation with lift up to 2.0 meters including providing coffer dams, shoring, strutting, sheeting, bracing, draining and pumping out water other than water below ground water table, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer including a lead up to 100 meters , loading and unloading etc:					
i)	In all types of soils including expansive soil, ash, morrum, laterite	CUM	110,233			
ii)	In soft rock and weathered rock, ordinary rock which can be excavated by means of crow bar, pick axe, pneumatic rock bracker attachment with poclain/excavator, etc. but does not require chiselling, chemical grouting and blasting	CUM	43,313			
iii)	In hard rock by means of controlled blasting including provision of sensor to asses the impact of blast on the adjacent structures, or by any other approved means	CUM	5,297			
iv)	In hard rock blasting Prohibited by means of chiseling, wedging, etc. (near freshly laid concrete, existing structures which may fall within allowable distance as per relevant IS Code)	CUM	1,889			
102	Extra over item 101 above, for all types of soil/rock, for additional lifts beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:					
i)	In all types of soils					
a	beyond initial lift of 2m and upto 4m (for qty. of excavation between 2m. to 4m. Depth)	CUM	37,728			
b	beyond initial lift of 2m. and upto 7m (for qty. of excavation between 4m. to 7m. Depth)	CUM	11,174			
c	beyond initial lift of 2m. upto 10m (for qty. of excavation between 7m. to 10m. Depth)	CUM	1,950			
d	beyond initial lift of 2m. upto 15m (for qty. of excavation between 10m. to 15m. Depth)	CUM	430			
ii)	In all types of rocks					
a	beyond initial lift of 2m and upto 4m (for qty. of excavation between 2m. to 4m. Depth)	CUM	31,000			
b	beyond initial lift of 2m. and upto 7m (for qty. of excavation between 4m. to 7m. Depth)	CUM	22,500			

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c	beyond initial lift of 2m. upto 10m (for qty. of excavation between 7m. to 10m. Depth)	CUM	4,150			
d	beyond initial lift of 2m. upto 15m (for qty. of excavation between 10m. to 15m. Depth)	CUM	1,820			
103	Extra over item 101 above for excavation below ground water table including lowering of ground water table to maintain dry working conditions for all activities up to filling/testing, water proofing all complete as per specifications, drawings and instructions of the engineer	CUM	108,700			
104	Extra over item 101 above for carriage (in/outside of Plant area earmarked by Customer) of all types of excavated materials beyond the initial lead of 100 m (initial lead, loading & unloading included in item 101 above) all complete as per specifications, drawings and instructions of the engineer for the following leads					
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	37,880			
ii)	Carriage beyond initial lead of 100 m but not exceeding 2.5 Km	CUM	65,000			
iii)	Carriage beyond initial lead of 100m but not exceeding 5 Km	CUM	1,000			
iv)	Carriage beyond initial lead of 100m but not exceeding 10 Km	CUM	5,000			
105	Filling using selected excavated materials (from stock piles) in trenches, plinths, sides of foundations and other underground structures, levelling in layers not exceeding 250 mm thickness within a lead from 500M to 2.5KM and all lifts and including re-excavation, loading from stock pile ,carting, unloading, filling, watering and compacting/ramming each layer, all complete as per specifications drawings and as directed by the engineer to achieve following densities: (Earth available in stock piles from 500m to 2.5km shall be used for this					
i)	Ordinary manual compaction	CUM	6,430			
ii)	90% Standard Proctor density	CUM	87,004			
iii)	95% Standard Proctor density	CUM	8,050			

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106	Filling using selected excavated materials <u>directly from excavation area</u> in trenches, plinths, sides of foundations and other underground structures, levelling etc. in layers not exceeding 250 mm thickness including lall lifts , filling , watering , compacting/ramming each layer all complete as per specifications drawings and as directed by the engineer to achieve the following densities					
i)	Ordinary manual compaction	CUM	1,196			
ii)	90% Standard Proctor density	CUM	8,968			
iii)	95% Standard Proctor density	CUM	2,762			
107	Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other under ground structures, in layers not exceeding 250 mm in thickness including all lifts and including excavating, loading , unloading , carting , filling , watering , compacting/ramming each layer all complete as per specifications drawings and as directed by the engineer to the following works including cost of material (means from contractor's own borrow area) for all leads, loading, unloading, royalty and transportation. (payment for solid measure of the consolidated filling).					
	with selected soil brought from borow areas arranged by contractor, including royalties,					
i)	90% Standard Proctor density	CUM	7,739			
ii)	95% Standard Proctor density	CUM	1,933			
ii)	With selected sand brought from quarries/river bed arranged by contractor, and compacting to 80% relative density etc. for all leads	CUM	3,534			
108	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 225 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85% of original volume of stone stack for all lifts complete as per instructions of engineer-in-charge	CUM	7,929			

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109	Filling in transformer pits etc. , with clean 40 mm nominal size stone aggregate including all labour, materials, royalties, equipments etc. complete as per instructions of engineer in charge.	CUM	191			
110	Buldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	CUM	2,250			
111	Cutting of trees , including transportation, stacking at storage yard/area earmarked by customer and disposal of unused materials per the direction of engineer in charge.					
i)	300 mm upto 600 mm girth	Nos.	100			
ii)	601 mm upto 900 mm girth	Nos.	150			
112	Providing Anti-termite treatment as per relevant IS Code and standard practices	Sq.m	100			
200	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 AS PER DRAWING AND SPECIFICATIONS UNLESS SPECIFIED OTHERWISE FOR THE FOLLOWING : (Using Ordinary Port land Cement - 43 Grade)					
201	Concrete of grade M7.5 as filling course at any level below finished floor level, under and around foundations/floors, mass dumps etc with 40 mm nominal size graded aggregate.	CUM	2,100			
202	Concrete of grade M10 as lean concrete levelling course , mud mat under and around foundations/floors, mass dumps etc with 40 mm nominal size graded aggregate.	CUM	7,415			
203	Concrete of grade M20 in under floors, paving, pipe encasing etc complete with 20 mm nominal size graded aggregate.	CUM	4,800			

SIGN OF BIDDER WITH SEAL

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203A	Extra over the item no. 203 for the integral finish	Sqm	30,000			
204	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 12.5 mm graded aggregate by volume) as under bed to floors etc complete.	CUM	2,800			
205	Concrete of grade M-25 in underground structure like foundations, columns below finish floor level plinth beams slab on grade drains etc. complete with 20 mm nominal size graded aggregate including .	CUM	39,000			
206	Concrete of grade M-25 in superstructure from finished floor level complete at all heights with 20 mm nominal size graded aggregate	CUM	8,400			
207	Concrete in TG Block and machine foundation at all heights from finished floor level except mill foundation top deck supported over vibration isolation system including addition of suitable plastisizer confirming to IS 9103 latest to achieve a slump more than 125mm in concrete as per manufacturers recommendation with 20 mm nominal size graded aggregate including ultra- sonic Pulse Velocity(UPV) test at 300mm c/c.					
a.	M25 (with 20 mm nominal size graded stone aggregate)	CUM	2,000			
b.	M30 (with 20 mm nominal size graded stone aggregate)	CUM	1,400			

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208	Providing and laying Design mix cement concrete for reinforced concrete work using graded aggregate in mill foundation, top deck of machine foundation supported on vibration isolation system (excluding supply and installation of vibration system) at all level including addition of suitable plastisizer confirming to IS 9103 latest to achieve a slump more than 125mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by BHEL/Customer, including all labour, metairals, 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 aggregates etc., all complete as per specification, drawings and instructions of engineer including UVP testing as directed by engineer in-charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity(UVP) testing by cement /epoxy grout etc. ...					
	contd.. but excluding formwork, reinforcements, embedments and temperature control of concrete.					
i)	M30 (with 20 mm down graded stone aggregate)	CUM	2,225			
ii)	M35 (with 20 mm down graded stone aggregate)	CUM	20			
iii)	M40 (with 20 mm down graded stone aggregate)	CUM	10			
209	Extra over St. No. 207/208 above, for controlling of temperature of freshly laid concrete (Temperature to be maintained between 18 Deg.C. to 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, drawings and instructions of engineer-in-charge	CUM	2,000			
210	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 drains etc complete.	CUM	1,000			

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211	Concrete of grade M-25 in precast works 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 M30concrete 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	CUM	400			
212	Concrete of grade M25 in water retaining/conveying structures including addition of suitable plastisizer cum waterproofingcement additives conforming to IS 9103 latest to achieve a slump more than 125mm in concrete as per manufacturers recommendation and subsequent reduction in cement content upto a maximum 10%complete and confirming to limits of permeability as per IS 2545 as per specification with 20mm nominal size graded aggregate					
i)	below ground level including providing with min. two coat of bituminous painting of grade 85/25 @1.7kg/sqm for water/damp proofing conforming to IS 702 on soil face	CUM	9,500			
ii)	above ground level	CUM	500			
213	Concrete of Grade M-15 (in plinth protection, pipe encasing etc. complete with 20 mm nominal size graded aggregate.	CUM	125			
214	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto 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					
i)	Plain cement concrete of all grades	CUM	30			
ii)	Reinforced cement concrete of all grades	CUM	60			

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215	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions etc all complete as per specification, drawings and instructions of engineer-in-charge but excluding cutting of reinforcement	CUDM	300			
216	Extra over and above St No 214 for cutting of reinforcement , 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.	Sqcm	75			
300	SUPPLYING, 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. FOR THE FOLLOWING:					
301	Ordinary form work (reasonably good steel/plywood surface) below finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	84,755			
302	Fairface form work (using commercial laminated plywood with steel/wooden frame)below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc. for exposed concrete work	SQM	12,836			
303	Ordinary form work (reasonably good steel/plywood surface) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights.	SQM	22,865			
304	Fairface form work (using commercial laminated plywood with steel/wooden frame) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights	SQM	28,068			

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305	Fair face formwork for TG superstructure and other VIS supported equipment foundation including deck (above raft top level) including necessary design & drawing for staging and scaffolding arrangement as per the approved civil drawing at all levels complete (staging arrangement including design & drawing to be submitted by the bidder for approval of BHEL before execution for deck). Structural steel required for decks shall be under contractor's scope	SQM	7,000			
306	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm contact surface area with concrete) 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, drawings and instructions of engineer-in-charge					
i)	Upto 300 mm depth	Nos.	100			
ii)	From 301 mm upto 600 mm depth	Nos.	110			
iii)	From 601 mm upto 1000 mm depth	Nos.	55			
400	REINFORCEMENTS (Reinforcement Steel is in BHEL's Scope of supply).					
401	Taking delivery from BHEL stores/store yard, loading, transporting and unloading at site,, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements in concrete conforming to relevent IS code including cost of binding wire, labour etc. complete all as per specifications & drawings.	MT	30			
402	Taking delivery from BHEL stores/store yard, loading, transporting and unloading at site,, straightening, cutting, bending, placing in position at any level, binding in position Fe-500 high yield strength steel reinforcements in concrete including cost of binding wire, labour etc. complete all as per specifications & drawings.	MT	7,500			
403	Taking delivery from BHEL stores/store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of binding wire, labour etc. complete all as per specifications & drawings.	MT	5			

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404	Taking delivery from BHEL stores/store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork including cost of binding wire, labour etc. complete all as per specifications & drawings	MT	2			
500	WATER PROOFING AS PER SPECIFICATIONS. (Contractor has to furnish a guarantee for material and workmanship for a minimum period of 10 years.)					
501	Providing, laying and fixing PU based roof water proofing treatment using two successive liquid coatings of high solid content urethane pre-polymers to form elasomeric membrane having overall dry film thickness of min. 1.5mm subject to min. 750gm/sq.m/coat application rate including primer coat consisting of polyurethane or any other equivalent materials, finishing coat and surface finish complete laid over cement plaster (1:6) grading on screed concrete (cement plaster and screed shall be paid seperately under relevant items) mix all complete including all labour, materials, equipment, handling,scaffolding,transporting, testing etc complete as per specification, drawings and instructions of engineer	SQM	17,500			
502	Providing and laying foam concrete block insulation over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125KCL/Sqmm/Degree C and weight shall be from 0.3 to 0.5 gm/cucm. all complete with fillets as per specifications					
i)	75mm thick	SQM	10			
ii)	100mm thick	SQM	10			
503	Providing and laying pressed precast concrete tiles over water proofing of minimum size 600 X 600 and minimum thickness 20 mm confirming to IS 13801 including 15 mm thick cement mortar (1:4) bedding. (water proofing paid else where)	SQM	13,100			
504	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.	KG	45,500			

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600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:					
601	Supplying & installation of bitumin impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin, labour, material, equipments etc. all complete at all levels as per specification, drawing and instruction of engineer-in-charge					
a	12mm thick joints.	SQM	30			
b	20mm thick joints.	SQM	25			
c	25mm thick joints.	SQM	310			
d	50mm thick joints.	SQM	1,315			
602	Supplying and filling in position hot applied bitumin sealing compound(Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints at all levels including application of primer, labour, material, equipment etc. all complete as per specification/drawing and instruction of engineer-in-charge	Kg	850			
700	M.S. EMBEDMENTS					
701	Supply, fabricating and fixing of embedments, MS inserts, pipe sleeves, guide rails, angle pieces, foundation bolts, anchor bolts, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipments, transportation, loading, unloading, handling welding rivetting, bolting cutting drilling scaffolding and setting as per specification and drawing	MT	250			
702	Transportation from stores, delivery at work spot, fixing of embedments, MS inserts, pipe sleeves, rails, guide rails angle pieces, anchor bolts of various diameters, plates of dimensions as required including cost of all labour, materials/ templates and equipment for fixing in position, scaffolding and setting in position, transportation from stores within the plant boundary to work spot, loading, unloading, etc complete as per specification and drawing	MT	100			

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703	Providing, fabricating, transporting, erecting and installing at all elevations miscellaneous steel/PVC pipes, expansion fasteners in concrete/brickwall, for all kind of works, including the cost of labour, material and equipment, setting material in concrete , layout, scaffolding, handling at site , cutting, forming, grinding, drilling, bolting, welding, jointing, testing atc. all complete as per specification, drawings and instruction of engineer					
i	MS pipes of all diameters	Quintal	38			
ii	PVC conduits of all sizes	Quintal	15			
iii	Expansion fasteners (galvanised) of HILTI make or equivalent of safe tension capacity as specified below:					
	250 kg	Each	990			
	500 kg	Each	720			
	750 kg	Each	270			
704	Supply, fabrication, transportation, delivery at site, erection, installation and allignment of MS foundation/anchor bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts (IS:1363, IS:1364 & IS:3138), anchor plates, stiffner plates, protective tape etc. upto and including 80mm dia 3000mm long including furnishing of labours, materials, equipments, welding, cutting, grinding, threading, drilling, pipe sleeves etc. all complete as per specification, drawings and instruction of engineer	MT	74			
705	Placing, locking and relesing of vibration isolation spring modules over foundation at all elevations including transportation from store levelling, alignment all complete as per drawings and instruction of engineer in-charge. The coated rate shall include all arrangement required for compression of spring modules at store, providing all T&Ps, cranes etc. (other than compression machine) for compression and placement/ erection of VIS, providing all necessary assistance, labours etc. for compression, placement and also making required scaffolding & manpower for releasing of VIS.	nos.	250			
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:					

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801	Providing & grouting cement slurry mix at any elevation/depth with pressure pump for water retaining concrete structures, including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by the Engineer	SQM	150			
802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection and alignment if necessary of heavy machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with CobextGP-2 of Fosroc or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of contractor)	CUM	35			
803	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection and alignment if necessary of heavy machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with CobextGP-1 or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of contractor)	CUM	90			
804	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection and alignment if necessary of secondary structures, machinery and pipe supporting structures at any elevations including roughening surface, cleaning, ramming, curing, etc with 1:1:2 cement sand 6mm down stone chips all complete as per specification (Cost of all material and cleaning the pocket by compressed air shall be in the scope of contractor)	CUM	20			
900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTIONS ETC. COMPLETE AT ALL ELEVATION INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION AND DRAWINGS (all steel doors, windows and rolling shutters etc. shall be blast cleaned to near white metal surface (Sa 2 1/2), painted with two coat of red oxide zinc primer and finished with two coats of synthetic enamel paint confirming to IS 2074)					
901	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35 mm thick homogeneous particle board bonded with BWR type phenol formaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35X12 mm thick teak wood beading all around including preparation of working drawings, butt hinges, tower bolts, sliding bolt, handles, knobs, door stoppers (all fitting shall be anodised aluminium colour dyed), final synthetic paint over primer, screws etc complete as per drawings, specifications and instructions of engineer-in-charge	SQM	180			

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902	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned teak wood free from large or loose knots, cracks or other defect inclusive of sand paper smoothening, holdfasts, beading, primer including final synthetic painting etc, complete as per specifications with proper wood joinery, accurately set to required lines, levels and rigidly secured in place	CUM	5			
903	Providing, fitting and fixing door shutter as per IS 1003 with (35mm thick, 150mm wide vertical rail and 125mm wide horizontal rail) teakwood shutter frame and (12mm thick) interlock panels of teakwood including beading, preparation of working drawing, butt hinges, tower bolts, sliding bolts, handles, knobs, door stoppers (all fitting shall be anodised aluminium colour dyed), final synthetic paint over primer, screw etc complete as per drawings, specifications and instructions of engineer-in-charge with proper wood joinery	SQM	10			
904	Providing and fixing hard wood frame conforming to IS 4021 made of approved quality seasoned wood free from large or loose knots, cracks or other defect inclusive of sand paper smoothening, hold fast beading, primer including final synthetic painting etc, complete as per specifications with proper wood joinery accurately set to required lines or levels and rigidly secured in place	CUM	5			
905	Providing and fixing steel single or double door shutters. Shutters shall be 45mm thk 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 c/c, side, top, bottom edges of shutter shall be of pressed steel channels of 1.2mm thk voids to be filled with mineral wool (48 kg/cum density) including all fittings like tower bolts, handles, stoppers, aldrops etc. and painting with minimum 2 coats of synthetic enamel paint on primer complete.	SQM	305			
906	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk 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 including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, Doors shall as per IS specification & shall meet TAC requirements. Minimum ratings shall be 2 Hrs.	SQM	150			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
907	Providing and fixing anodised aluminium work of INDAL/HINDALCO/ JINDAL for doors, windows, ventilators and partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC /neoprene felt for bi-mettalic protection etc. including preparation of	KG	28,000			
	working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge(Glazing and panelling shall be paid seperately).					
907 (a)	Providing, fitting and fixing in position window grills made of anodised aluminium section as per approved design patterns at all elevations and of all sizes including with or without opening for operating window, handles with all laour, material, handling, equipment complete etc as per specification, drawing and instructions of engineer in charge.	kg	2,800			
908	Providing and fixing of over head hydraulic door closers of approved make & quality as directed by Engineer.	Nos	160			
909	Providing and fixing floor mounted Hydraulic door closer of approved make & quality as directed by engineer	Nos	30			
910	Providing and fixing pressed steel frames fabricated from 1.4 mm thk (16 gauge) M.S sheet, mortised, reinforced strikes, hold fasts, adjustable floor anchors, floor tiles/weather bars,painting with min. two coats of synthetic enamel paint on primer etc. complete as per specifications.	KG	3,600			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
911	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm, hot rolled double dipped galvanized steel 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 including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Mechanically operated.	SQM	200			
912	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm, hot rolled double dipped galvanized steel 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 including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Hand operated.	SQM	70			
913	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm hot rolled double dipped galvanized steel 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 including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Electrically operated.	SQM	172			
914	Providing, fitting and fixing of glazing including poly carbonate sheet of superior (selected) quality, first grade class, at various elevations, where required, cleaning after fixing, gaskets, clips, hardware with all labour and material etc. complete as per specification, drawing and instructions of engineer in charge.					
i)	4 mm clear sheet glass	SQM	150			
ii)	4 mm clear float glass	SQM	180			
iii)	6 mm clear float glass	SQM	410			
iv)	6 mm wired glass	SQM	1,400			
v)	6 mm thick polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	90			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
vi)	4mm ground glass	SQM	200			
vii)	Two nos. 6 mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	167			
viii)	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	45			
ix)	6mm thick toughened float glass	SQM	191			
x)	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6 mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	418			
xi)	6mm thick laminated glass	SQM	410			
915	Providing, fitting and fixing heavy duty minimum six lever mortised lock of godrej or equivalent make with handles or knobs to single and double leaf door (wooden/steel/aluminium) with duplicate set of keys and masterkeyed locks, openable from one side by the key and from the other side by the handle etc. all complete as per drawing, specification and instruction of engineer in charge.	Each	122			
916	Providing and fixing PVC doors of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	85			
917	Supplying & fixing weather stripping of approved make & quality to doors as per instruction of Engineer In charge and specification complete	RM	45			
918	Providing and fixing steel openable or fixed windows/ventilators with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. Glazing shall be of 6.0mm thick wired glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete. Glazing shall be paid separately under item no. 914 above.	SQM	1,800			
919	Providing and fixing factory made prelaminated particle board of minimum 25 mm thickness(MDF exterior grade) door including hollow extruded section of minimum 3 mm thickness as manufactured by INDAL/JINDAL with electrocolour coating of minimum 15 micron thickness including all fixtures complete.	SQM	95			
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC. COMPLETE, AS PER SPECIFICATIONS.					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1001	Providing brick work in cement mortar 1:5 (1 part cement & 5 parts coarse sand) in walls, chambers etc. in thickness varying from 250mm to 500mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	198			
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm ² and minimum percentage of fly ash shall be 25%	CUM	54			
iii)	Using best quality locally available ordinary bricks (burnt clay kiln bricks) of class designation 5 (crushing strength 5N/mm ²) of nominal dimension	CUM	1,200			
1002	Providing brick work in cement mortar 1:5 (1 cement 5 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.					
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	869			
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm ² and minimum percentage of fly ash shall be 25%	CUM	223			
iii)	Using best quality locally available ordinary bricks (burnt clay kiln bricks) of class designation 5 (crushing strength 5N/mm ²) of nominal dimension	CUM	7,300			
1003	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	72			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1004	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls , chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing H.B. wetting at every third layer, raking out joints, curing, scaffolding etc complete Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² Using clay ash bricks shall be as per IS 13757 minimum percentage of fly ash shall be 25%excluding plastering and painting as per specification.					
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	113			
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm ² and minimum percentage of fly ash shall be 25%	SQM	46			
iii)	Using best quality locally available ordinary bricks (burnt clay kiln bricks) of class designation 5 (crushing strength 5N/mm ²) of nominal dimension	SQM	1,600			
1005	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	21			
1006	Breaking of existing brick partition wall at all levels including plastering, cutting of reinforcement, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	SQM	22			
1007	Providing and encasing of structural steel member with masonry work (using best quality locally available ordinary burnt clay kiln bricks of class designation 5) around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with checken wire mesh with 50mm lap etc. complete as per specification.	CUM	77			
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	81			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	1,000			
1010	Providing and filling brick bats in soak pits, below plinth protection etc. complete.	CUM	45			
	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS.					
1101	Damp Proof Course 40mm thk. 1:1.5:3 concrete (10mm down aggregate) with 2% of approved admixture of water proofing compound. Hot bitumen of grade 85/25 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification.	SQM	450			
1200	CEMENT MORTAR PLASTER INCLUDING ALL MATERIALS SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION					
1201	Providing 12 mm thick plaster in cement mortar 1:6 on walls, finished to a smooth finish as per specification.	SQM	28,000			
1202	Providing 12 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification.	SQM	6,700			
1203	Providing 12 mm thick plaster in cement mortar 1:6 on walls with a paste of neat cement @1kg/sqm and rubbed smooth with trowel as per specification.	SQM	2,622			
1204	Providing 18 mm thick (12mm + 6mm) plaster in two layers in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification.	SQM	31,214			
1204 (a)	Providing & adding water proof compound admixture for the top 6mm layer in external plastering	Kgs	5,000			
1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.	SQM	20,692			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1206	Providing and making decorative plaster over existing plastered surface of all types and design on walls, ceilings, arcs, columns with various thickness upto 20 mm including finishing all complete.	SQM	200			
1207	Providing Plaster of Paris/ white putty (birla white) 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	SQM	14,666			
1208	Providing screed/grading plaster of average 20 mm thickness in ratio 1:6 nominal by volume including finishing smooth and even etc. all complete at all levels above or below grade level.	SQM	100			
1209	Providing and making decorative interior plaster of heritage finish over existing plastered surface of all types and design on walls, ceilings, arcs, columns including finishing all complete.	SQM	50			
1210	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	563			
1211	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	1,200			
1212	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over galvanised hexagonal chicken wire of 0.9 mm wire diameter and 19 mm mesh size as per IS3150 including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of enginner in charge (rate shall include the cost of GI chicken wire mesh)	SQM	1,530			
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE (paints of reputed brand of reputed manufacturer like ici/burger/asian paints or equivalent)					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1301	Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface with POP as per manufacturers guideline but excluding cost of plaster of paris punning minimum 2 mm. which shall be paid under item no. 1207	SQM	35,500			
1302	Providing and applying two or more coats of acrylic destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface with POP as per manufacturers guideline but excluding cost of plaster of paris punning minimum 2 mm. which shall be paid under item no. 1207	SQM	700			
1303	Providing and applying two or more coats of cement paint (for internal use) of approved brand and manufacture to give an even shade including priming coat complete.	SQM	364			
1304	Providing and applying two or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	1,320			
1305	Two or more coats of oil resistant paints epoxy based and ammine cured, 150 micron over primer of approved grade and manufacture to give an even shade.	SQM	351			
1306	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface with POP as per manufacturers guideline but excluding cost of plaster of paris punning minimum 2 mm. which shall be paid under item no. 1207	SQM	1,000			
1307	Providing & applying two or more coats of exterior emulsion paint of approved brand, shade and manufacture complete as per specifications.	SQM	17,200			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1308	Providing and applying two or more coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	300			
1309	Providing and applying two or more coats of weather paint of Asian make or approved equivalent make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	662			
1310	Providing and applying two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	300			
1400	FLOORING AND SKIRTING INCLUDING ALL MATERIALS, LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS AND DESCRIBED IN SPECIFICATIONS FOR THE FOLLOWING:.					
1401	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles over underbed of 1 part cement, 1.5 part sand and 3 parts chips (10mm down, well graded) by volume (only sufficient water added to give workable consistency) in flooring complete as per specification.	SQM	20,000			
1402	Same as above without mtallic hardner.	SQM	100			
1403	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4457 of minimum thickness 20 mm thick in flooring/Dado .The tiles shall be abrasion resistant and durable. The potassium silicate as per IS 4832, 6 mm thick mortar used for setting or for under bed shall be durable strong and chemical resistant epoxy mortar including pointing etc. after laying bitumen primer as per IS 158 and 12 mm thick bitumastic complete as per IS 9510 and IS 412 as per specification.Min. size of tiles shall be 100x200mm.	SQM	1,500			
1404	Providing and applying epoxy coating 150 micron over epoxy primer over MS Grating/Chequered plate/any other steel structure complete as per engineer in charge.	SQM	5			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1405	Providing and laying polished Kota stone 20 mm thk in flooring. staircase over min. 20mm thick underbed of 1 part lime, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The kota stone slab shall be min. size 600mmx600mm and laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, making corners,granite polishing etc. complete.	SQM	441			
1406	Providing and laying polished Kota stone 20 mm thk in flooring laid in pattern with white marble strip 20mm thick as per approved floor design over min. 20mm thick underbed of 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The kota stone/marble slab laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	2,500			
1407	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .	SQM	113			
1408	Providing and laying polished Granite stone of approved color and texture 20 mm thk in flooring over underbed 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The granite stone slabs/tiles laid over pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete .	SQM	30			
1409	Providing and laying polished Granite stone 20mm thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	10			
1410	Providing and laying polished Granite slab 12 mm thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	10			
1411	Providing and laying 7 mm thick non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS profile limited' or equivalent over 30mm thick underbed of 1 part cement and 3 part coarse sand by weight mixed with sufficient water complete as per specification laid in pattern of following sizes					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
i)	300x300mm	SQM	1,115			
ii)	600x600mm	SQM	1,842			
1412	Providing and laying glazed ceramic tiles of approved color and design in dado of approved size of reputed manufacturer topped with 50mm wide matching ceramic trims complete as per specification including all materials labour etc.					
i)	5mm thick	SQM	793			
ii)	7mm thick	SQM	248			
1413	Providing and laying Granite slab 20 mm thickness single piece for wash basin slab, wall of black or approved colour with making corner, cutting and opening complete.	SQM	72			
1414	Providing and laying of PVC flooring & skirting of min. thickness 3mm anti static flexible tiles as per IS 3462 and IS 5318.	SQM	700			
1415	Providing and laying 12 mm thick cast in situ terrazo finish consisting of marble chips of size 1 mm to 12 mm nominal size laid in white/grey cement or mixture of both in proportion 1:1.5 (1 part cement, 1.5 parts chips) with marble powder 3:1 (3 parts cement, 1part marble powder) in proportion mix dry in cement including pigments, rubbing, grinding, polishing etc in floors, skirtings, treads, risers and landings complete.	SQM	1,200			
1416	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.					
i)	Glass strips 40 mm wide and minimum 6 mm thick.	RM	1,200			
ii)	Aluminium strips 40 mm wide and minimum 3 mm thick.	RM	100			
1417	Providing and laying 50mm thick anti skid precast interlocking concrete paver (M30 grade concrete) of approved shape as per the approval of engineer in charge specification complete including min. 40mm thick sand underbed.	SQM	2,000			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1418	Providing and laying 40 mm thick heavy duty cement concrete flooring with metallic hardener , pigmented topping of 12mm thick uniform graded treated iron particle including non-skid self levelling epoxy in flooring complete as per specification,	SQM	4,500			
1419	Providing and laying polished Marble Slab (Aranga white) 20/25mm thick of size 1500X600mm in flooring over min. 20mm thick underbed of 1 part lime putty, 1 part surkhi, and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass The marble slabs shall be laid over under-bed pressed and tapped down with wooden mallet to the proper level lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigment, curing grinding granite polishing etc complete.	SQM	10			
1420	Providing polished Marble 20mm thick in skirting projection 6mm from adjacent plaster all complete.	SQM	10			
1421	Providing and laying polished Marble Slab (Aranga white) 20mm thick in staircase landing/skirting and corridors over min. 20mm thick underbed of 1 part lime putty, 1 part surkhi, and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed pressed and tapped down with wooden mallet to the proper level lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigment, curing grinding making corners, granite polishing etc complete.	SQM	10			
1422	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600x600x35mm with 0.05mm thick alluminum foil lining at bottom & with 2mm thick antistatic PVC topping including proprietary floor supporting systems complete as per specification.	SQM	90			
1423	Providing and laying 7 mm thick vitrified ceramic tiles of polished variety of size 300x300mm from reputed manufacturer (Kazaria or equivalent), complete as per specification.	SQM	482			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1426	Providing and laying 7 mm thick vitrified ceramic tiles of unpolished variety of size 300x300 from reputed manufacturer (Kazaria or equivelant), complete as per specification.	SQM	36			
1427	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300X300X25 thick of approved shade as per IS 1237, laid in floors and landings, jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.	SQM	350			
1428	Providing & laying 40 mm thick IPS flooring as per specification	SQM	50			
1429	Providing and applying ready made Epoxy Paint over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer.	SQM	25			
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING FLASHINGS (NO SEPERATE PAYMENT SHALL BE PAID FOR FLASHINGS) LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. COMPLETE FOR THE FOLLOWING:					
1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate as per IS:513 over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum 0.8mm (base metal excluding coating), with minimum trough depth of 44 mm, with minimum yeild strength of 240Mpa and shall serve as permanent shuttering to the cast-in-situ roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete,imposed loads and construction loads over a span of around 1800mm between purlins as per manufacturer's recommendations/calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc.complete as per engineers approval and specification. The sheet shall be permanently coated with silicon modified polyster paint of minimum 20 micron DFT on exposed surface (Facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising as per IS:277 at the rate of 275 gm/sqm including	SQM	6,400			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
	contd.....fixing of sheet to purlin with self tapping self drilling white zinc plated heat treated high carbon steel screws of minimum 5.5 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. (height of trough required as per design should be included in the cost). Measurement shall be of the plan area of roof covered by MS trough metal decking.					
1502	Providing and fixing self tapping, self drilling shear connectors of 16mm dia and min. 75mm projected length above purlin of mild steel studs passing through metal decking as per relevant IS codes and specification	Quintal	29			
1503	Design, supply & erection of permanent colour coated thermally insulated sandwiched metal cladding for external walls with troughed galvanized MS sheeting of 0.6mm thickness and 275 g/sqm of galvanization or Hi tensile steel (350 Mpa) 0.5 mm thick, coated with zinc aluminium alloy @ 150 g/sqm. Outer exposed face shall have silicon modified polyester coating of DFT 20 microns over primer having life span sustenance against weathering action, inner sheeting shall have 7 micron of precoating, sandwiched insulation of min.50mm thick bonded mineral wool blanket conforming to IS 8183 (min. density of 32 kg/cum for glass wool and 48 kg/cum for rock wool or 40-45 kg/cum for polyurethane foam (fire retardants and non-toxic) conforming to IS 12436, cladding shall be fixed to support/rails by concealed fixing system with corrosion resistant self tapping/self drilling type fasteners provided with suitable cap. Flashing shall have the same material and minimum overlap of 100 mm. side laps & siphoning feature to prevent leakage including <u>fixing of inner sheet to the structures ...contd</u> by self drilling fastners & concealed clips (including sub grits of size 50x50x50mm manufactured out of 16g GI Z shape) to connect the external sheet (without penetrating the external sheet) and including an insulation of 50mm thick rock wool (rockloyd-300 or equivalent) of density 48kg/cum confirming to IS 8183 between the two sheets including flashings complete as per specification)	SQM	10,440			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1504	Design, supply & erection of permanent colour coated single skin metal cladding (external sheet) of approved color for external walls comprising of profiled sheet of 0.55mm TCT (total coated thickness) permanently colour coated zinalume steel (150gsm zinc - alluminum alloy coating) having 300 Mpa yield strength with colour coating of SMP/Super polyster XRW including colour coating of 20 micron finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on the reverse side. The sheet having 500mm cover width 75mm hiegh crests at 250mm c/c with special male/femal side laps and siphoning feature to prevent leakage including fixing of sheet by concealed clips (including sub grits of size 50x50x50mm manufactured out of 16g GI Z shape without penetrating the external sheet) complete including flashing as per specification	SQM	6,400			
1505	Design, supply & erection of permanent colour coated single skin metal cladding (internal sheet) of approved color comprising of 0.6mm TCT of SMP/Super polyster XRW coated zinalume steel 150 gsm having 550Mpa yield strength or 180gsm galvanised of 240 Mpa including colour coating of 20 micron finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on the reverse side. The sheet having 980mm cover width, 28mm hiegh crests at 195mm c/c with special male/femal side laps and siphoning feature to prevent leakage including fixing of sheet to the structure by self drilling fastener complete including flashing as per specification	SQM	1,163			
1506	Providing & fixing 50mm thick insulation of rock wool (rockloyd-300 or equivelant) of density 48kg/cum. conforming to IS 8183 including wrapping in black polythene back supported over welded mesh 75x75x1.6mm dia. to hold in position as per manufacture recommendation including all labours materials scaffolding, equipment etc. all complete as per specification, drawing and instruction of Engineer Incharge.	SQM	1,163			
1507	Providing & fixing insulation of resin bonded mineral wool of specified thicknes (25/50mm nominal) conforming to IS 8183 having a density of 32 kg/cum. Glass wool or 48kg/cum of rockwool for under deck insulation including appication of glue & tying with lacing wire, for glass/rock wool as per manufacture recommendation all labours materials scaffolding, equipment etc. all complete as per specification, drawing and instruction of Engineer Incharge.	CUM	118			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1508	Providing and installing under deck insulation using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips, all labour, material, scaffolding, equipment etc (but excluding cost of insulation which shall be paid under item no. 1507) all complete as per specification, drawing and instructions of engineer in charge.	SQM	2,000			
1600	PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, WORKING LAYOUT DRAWINGS AND DETAILS, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING MAKING RECESS FOR LIGHT FIXTURES, ALUMINIUM DIFUSERS, FIRE ALARMS ETC., POLISHING/PAINTINGS, LABOUR ETC., ALL COMPLETE AS PER SPECIFICATION.					
1601	Providing and fixing glass reinforced gypsum (GRG) ceiling system consisting of supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.					
i)	12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	315			
ii)	12 mm thick GRG board in profile (dome etc.) with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	27			
iii)	12 mm thick GRG board in tile of 600x600mm with double web design galvanised steel with prepainted steel capping of approved shade color supporting Tee frame 24mmx38mm.	SQM	23			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1602	Providing, fixing & laying permanently colour coated aluminium false ceiling of approved colour with stove enamel finish and Luxalon of hunter douglas make or equivalent with corrosion resistance aluminium alloys panels of min. thickness 0.5mm including 50mm thick mineral wool insulation (as per IS 8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixture, A.C. ducts etc. Suitable MS channel (min.MC 75) grid 1200 c/c max. shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixture, AC duct etc. The work to be completed as per specifications drawings, and direction of engineer. Material for structure platform/ grid made up of MS channels/ Beams/ Angles shall be supplied by BHEL free of cost and shall be paid under SI item no. 2301)	SQM	2,500			
1603	Providing, fixing & laying annodised natural colour matt finised aluminium false ceiling of Indal make with corrosion resistance aluminium alloys panels of min. thickness 0.5mm including 50mm thick mineral wool insulation (as per IS 8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixture. A.C. ducts etc. Suitable MS channel (min.MC 75) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixture, AC duct etc. The work to be completed as per specifications drawings, and direction of engineer. Material for structure platform/ grid made up of MS channels/ Beams/ Angles shall be supplied by BHEL free of cost and shall be paid under SI item no. 2301)	SQM	27			
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS					
1701	GI down take pipes conforming to IS 1239 / IS 3589 as per specification of following dia.					
i)	100 mm dia	RM	10			
ii)	150 mm dia	RM	2,500			
iii)	200 mm dia	RM	20			
1800	MISCELLANEOUS					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1801	Providing and fixing PVC water stops 225mm wide, 6 mm thick.	RM	2,500			
1802	Supplying and installation of 25mm thick vibration damping, resilient pads around foundation of vibrating equipment and other locations as directed by the Engineer-in-charge including cost of all materials, labour, equipment etc. complete as per drawing and specifications.	SQM	29			
1803	Providing 50 mm thick premix carpet surfacing laid to slope in two layer 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @52kg/cum including compaction and cost of all material, labour all complete as per specification and as directed by the engineer	SQM	1,540			
1804	Providing 50 mm thick anticorrosive layer laid to slope consisting of compacted crushed stone screening fine gravel clean sand or similar material, as directed by the engineer, mixed in hot asphalt 10% by volume and rolled or compacted complete as per drawing and specification below fuel oil tanks and at such other places as per specification and as directed by the engineer	SQM	271			
1805	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including aluminium screws, rawl plugs all complete as per specification.	RM	25			
1806	Taking delivery of materials from BHEL stores/store yard, loading, transporting, unloading at site and fixing transformer rails including guide rails in concrete including jointing of rails, anchoring lugs etc complete as per specification. (Rails & Guide channel shall be supplied by BHEL free of cost)	MT	100			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1807	Providing and fixing weep holes in Drains/retaining wall etc. consisting of 100 mm dia LDPE pipe sleeves along with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening along with 300 X 300 mm sq., 300 mm deep, 40 mm aggregates to cover fabric mesh mouth complete as directed by engineer in charge.	Nos.	5,000			
1808	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc complete as per specification and as directed by Engineer. Earthwork excavation & backfilling shall be paid separately under relevant items.	MT	150			
1809	Design, supply, fabrication, erection of stoplog gates in CW Pumps as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, cold galvanisation (application of EPILUX-4 of Berger or equivalent zinc rich primer -63992 with catalyst - 635901 followed by one coat of black EPILUX-5 CTE-65580 with catalyst 655921 and second coat after final erection having min. total paint thickness of 80 micron) along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel, SS including embedments shall be considered for payment purpose)	MT	15			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
1810	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work at all levels for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting /welding of joints, cleaning, sand blasting, cold galvanisation (application of EPILUX-4 of Berger or equivalent zinc rich primer -63992 with catalyst -635901 followed by one coat of black EPILUX-5 CTE-65580 with catalyst 655921 and second coat after final erection having min. total paint thickness of 80 micron) complete as per drawing and directed by Engineer.	MT	70			
1811	Providing and fixing GI rungs in concrete/brick walls at all elevations including zinc coating of min. 900 g/sqm all complete.	KG	1,200			
1812	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160mm dia housing pipe of minimum length 3.75m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall all complete as per specifications, drawings and instructions of engineer in charge	Nos.	80			
1813	Providing and fixing LDPE pipes (medium duty with wall thk. 3mm) in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.					
	i) 100 mm dia	RM	302			
	ii) 150 mm dia	RM	216			
	iii) 200 mm dia	RM	216			
2000	FENCING AND GATES.					
2001	Supplying and erecting in position 2.4m high PVC coated galvanised chain linked fencing of minimum 8gauge (including PVC coating) of mesh size 50mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12gauge. GI barbed wire fencing conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of height of 600 mm including all accesories as per specification all complete. Earthwork & concrete for post foundation, structural fabrication etc. shall be paid separately under relevant item and MS angle/channel for post shall be supplied by BHEL free of charge.	SQM	2,000			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2002	Supplying and fixing G.I. barbed (2 ply) wire in fencing @ 150mm c/c (specing between the runs) and two diagonal ties between the post with mild steel Angle posts, clips, anchors, one coat of redoxide zinc chromate primer and two coats of approved aluminium paint etc complete as per specification, drawing and as directed by the Engineer. Earthwork & concrete for post foundation, structural fabrication etc. shall be paid separately under relevant item and MS angle shall be supplied by BHEL free of charge. For further details of barbed wire ref. Section D, Sub-sec. D17	SQM	1,000			
2003	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes & sheets including stiffners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, ball bearing arrangements, castor wheels, anti corrosive synthetic enamel painting over two coats of primer etc. all complete as per drawing, specification and as directed by Engineer-in-charge with 600mm high GI barbed wire fencing at top all complete.	MT	10			
2100	WATER SUPPLY					
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc. complete 15mm nominal bore.	NO.	87			
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc. complete as directed by Engineer 15mm nominal bore.	NO.	59			
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	NO.	25			
2104	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	NO.	17			
2105	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. and clamps including cutting and making good the walls etc. complete (internal work) 15 mm nominal bore.	RM	318			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2106	Providing and fixing GI pipes of class B-Medium complete with GI fittings a clamps including cutting and making good the walls etc. complete (internal work) 20 mm nominal bore.	RM	149			
2107	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. and clamps including cutting and making good the walls etc.complete (internal work) 25 mm nominal bore (N.B).	RM	149			
2108	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc. complete (external work) 15mm nominal bore (N.B).	RM	135			
2109	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 20mm nominal bore (N.B).	RM	131			
2110	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 25mm nominal bore (N.B).	RM	131			
2111	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 50mm nominal bore (N.B).	RM	131			
2112	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc. complete with CP screws as per specification.	NO.	69			
2113	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc. complete as per specification.	NO.	72			
2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod (1.00m long) with C.P. brackets etc. all complete as per specification.	NO.	30			
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc.complete as per specification.	NO.	77			

SIGN OF BIDDER WITH SEAL

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2116	Providing and fixing C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc. complete as per specification.	NO.	80			
2117	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. complete as per specification	NO.	44			
2118	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	No.	15			
2119	Providing & fixing P.V.C. water tank (Syntex or equivalent) in position . The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels					
i)	2000 Litres Capacity	NO.	11			
ii)	5000 Litres Capacity	NO.	3			
2120	Providing & Fixing approved stainless steel sink with integrated drainboard complete including painting the fitting cutting and making good the wall where required as per specification. The work to be complete as per specification drawing and direction of engineer.	NO.	4			
2200	SANITARY WORKS					
2201	Supply and fixing vitreous china wash basin size 600x450 with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc. complete as per specifications	NO.	99			
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink of size 600x450x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass bottle trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	NO.	6			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2203	Providing and fixing colour European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed stone water flushing cistern with valveless fittings, necessary C.P connections etc. complete as per specification.	NO.	28			
2204	Providing and fixing glazed vitreous china pan with foot rests and high level 12.5 litre C.I flushing cistern with valveless fittings, necessary C.P connections, foot rests shall be made of white glazed vitreous china with chequered surface allcomplete with cistern painting, C.I brackets etc. as per specification.	NO.	42			
2205	Providing and fixing wall type glazed vitreous china sensor type urinals with flush pipes,sensors, lead pipes, gratings, CP bottle traps and necessary C.P fittings all complete as per specifications.	NO.	308			
2206	Supply, laying and jointing 75mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead cocking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	423			
2207	Supply, laying and jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	163			
2208	Supply, laying and jointing 150mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, a coat of bitumenous paint, M.S holder bats/clam lead caulking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	188			
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete, as per specifications. for dia.					
i)	150 mm	RM	100			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
ii)	200 mm	RM	90			
iii)	250 mm	RM	95			
iv)	300 mm	RM	150			
v)	450mm	RM	5			
vi)	600 mm	RM	150			
vii)	900 mm	RM	125			
viii)	1000mm	RM	10			
2210	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. as per specifications for dia:					
i)	150mm	RM	150			
ii)	250mm	RM	200			
iii)	300mm	RM	400			
iv)	400mm	RM	5			
v)	500mm	RM	5			
vi)	600mm	RM	50			
vii)	750mm	RM	10			
2211	Providing and fixing C.I Manhole cover (Medium grade) of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	25			
2212	Providing and fixing circular heavy duty man hole cover of 600mm dia with frame all complete as per specification.	NO.	29			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 100x100mm P or S Type.	NO.	14			
2214	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x100mm P or S Type.	NO.	11			
2215	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x150mm P or S Type.	NO.	22			
2216	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	172			
2217	Providing and installing approved brand single tap water cooler of 80 L cooling capacity complete in all respect.	NO	17			
2218	Providing and installing approved brand single tap water cooler of 150 L cooling capacity complete in all respect.	NO	8			
2219	Providing and fixing white vitreous urinal partitions all complete as per specification.	NO.	60			
2300	STRUCTURAL STEEL WORKS All items for fabrication should include fabrication drawings as per specifications including painting with a coat of primer and also inclusive of all necessary quality test to the satisfaction of engineer/customer for the following. (Supply of Structural steel is in BHEL's Scope).					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2301	<p>Taking delivery of materials from BHEL store/store yard, loading, transportation, unloading at site, Fabrication, Erection, alignment, welding, primer painting (primer coat consisting of 2 coats of redoxide zinc-phosphate as per IS:10897. (reaffirmed 2002) 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, gratings 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..... contd</p>					
	<p>contd....walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails (G.I. M.S.), toeplates, MS Rungs, insert plates, edge angles embedments, lugs, posts, stays, 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 erection bolts & nuts not payable, Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately under ST NO. 2309 (i)), assembly, edge preparation, preheating (min. preheat and interpass temperature of 66 degree centigrade for welding over 40mm & upto 63mm & 111 degree centigrade for thickness over 63mm) & use of low hydrogen/ radiogenic electrodes as per specification post heating, testing of welders, inspection of welds, visual inspection, non destructive and</p>					
	<p>contd....rectification and correction of defective welding works, production test plate, inspection & 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 by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour material electrodes & other consumables, equipment, testing (mechanical and non-destructive) preparation of fabrication drawing joint design calculation and all other general and special requirement including appointment of a seperate agency approved by BHEL for review and approval of fabrication drawings in consultation with BHELcontd</p>					

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
	contd.....prepared by the bidder and all other activities required for completion of the work including return of surplus/waste steel materials to stores etc. as per specification drawing and instruction of the enginner. Approval of febrication drawing does not relieve the bidder from the responsibility of its correctness and accuracy.					
a)	Fabrication	MT	12,855			
b)	Erection, alignment, welding	MT	12,855			
2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(St-2) and applying epoxy based zinc phosphate primer in phenolic alkyd medium in coats of minimum 35 micron (DFT) at shop and 35 micron (DFT) after erection, including touch-up painting etc complete as per specification.	MT	12,855			
2303	Extra over ST NO. 2301 for providing and application of two coats of primer consisting of chemical resistant epoxy resin and hardener (Minimum 1 Kg of primer mix shall be consumed for priming of 4 to 5 m2 area of surface) instead of primer coat of red oxide zincchromate, including touch up painting as per specification and instruction of the Engineer	MT	20			
2304	Providing & application of synthetic enamel paint of Berger or approved equivalent make and colour in two coats of minimum 50 micron total thickness (DFT) already having primer coats (as per ST NO. 2301) 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.(Total thickness (DFT) including primer shall not be less than 100 micron.) conforming to IS:2932	MT	12,855			
2305	Providing & application of epoxy based colour finish paint in two coats with minimum 50 micron total thickness (DFT) of approved make and shade over steel sections already having primer coats (as per ST NO. 2302) 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 instruction of the Engineer.(Total thickness (DFT) including primer shall not be less than 100 micron.)	MT	25			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2306	Providing & application of Anti corrosive synthetic enamel paint of berger or approved equivalent make and colour in two coats with minimum 50 micron total thickness (DFT) of approved make and shade over steel sections already having primer coats (as per ST NO. 2301) 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 instruction of the Engineer.(Total thickness (DFT) including primer shall not be less than 100 micron.)	MT	200			
2307	Supplying, fabrication , transportation, erection and alignment of factory made 40mm thick electroforged galvanised gratings of steel (having min. galvanisation of 610g/sqm) 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 ST NO. 2309 (i), 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	100			
2308	Supply, fabrication and delivery at the site hot dipped galvanisation 40mm thick MS grating @610gm/sqm over blast cleaned steel surface as per specifications, drawings and instructions of the Engineer. instead of painting with two coats of red oxide primer followed by two coats of enamel finish paints.	MT	35			
2309	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	14			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
	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.	QUINTAL	221			
2310	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	52			
2311	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.					
	i) In erected position	MT	7			
	ii) In fabrication yard	MT	16			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2312	Re-erection of dismantled fabricated structural steel members requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2310 and 2311 respectively) 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	17			
2313	Taking delivery of SS materials from BHEL store/store yard, fabrication & erection of 3.15mm thick stainless steel liner of grade AISI-304 finish grade 2B (cold rolled, Annealed & Packed & skin passed) on MS plate for inside surface of hopper & mouth of hopper of bunkers as directed by engineer including fixing with stainless steel studs bolting (including countersunk) welding etc. complete as per specification and IS standards Electrode classification shall be E308L for welding of stainless steel to stainless steel and E309L for stainless steel to mild steel etc. as per specification, drawing and instruction of the engineer in-charge. SS liner shall be supplied by BHEL free of cost.	MT	45			
2315	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of (+or -) 50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc complete as per specification, drawing and instruction of the engineer.					
i)	Vertical Load of 20 Tons	Nos.	35			
ii)	Vertical Load of 25 Tons	Nos.	2			
iii)	Vertical Load of 30 Tons	Nos.	15			
iv)	Vertical Load of 40 Tons	Nos.	2			

SIGN OF BIDDER WITH SEAL

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
v)	Vertical Load of 50 Tons	Nos.	6			
vi)	Vertical Load of 60 Tons	Nos.	2			
2316	Providing and fixing flexible open ended bellow strap of neoprene of min. th. Of 2mm & min. width 200mm with aluminium strip edges as sealing below top of bunker and bottom of tripper floor to avoid coal dust nuisance.	RM	150			
2317	Conducting radiography test on weld where specified by the engineer including provision of necessary equipment measuring devices gauges materials and labour as per specification complete (over and above the work already specified in the specification)	RM	69			
2318	Conducting ultasonic test on weld where specified by the engineer including provision of necessary equipment measuring devices gauges materials and labour as per specification complete (over and above the work already specified in the specification)	RM	48			
2319	Conducting magnetic particle test on weld where specified by the engineer including provision of necessary equipment measuring devices gauges materials and labour as per specification complete (over and above the work already specified in the specification)	RM	46			
2320	Conducting dye penetration test on weld where specified by the engineer including provision of necessary equipment measuring devices gauges materials and labour as per specification complete (over and above the work already specified in the specification)	RM	49			
2321	Conducting ultasonic test on steel plate as per ASTM-A435 or equivalent wherever specified by the engineer including provision of necessary equipment measuring devices gauges materials and labour as per specification complete (over and above the work already specified in the specification)	SQM	157			
2322	Supply fabrication & delivery at site transportation , loading/unloading of various sizes GI hand railing 32 NB including painting (primer and finish) and fixing as per specification labour and materials complete for medium duty class. Rate shall be inclusive of cost of GI pipes.	MT	45			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2400	ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPECIFICATION, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER-IN-CHARGE FOR THE FOLLOWING.					
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/rock, dressing to camber and consolidating the base including making good the undulation etc. and disposal of surplus earth within plant boundary all complete as per specification.	CUM	2,588			
2402	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required camber etc. complete as per specification.	CUM	642			
2403	Providing & Laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size , stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of binding material moorum etc. including cost of material labour all complete.	CUM	973			
2404	Providing & Laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size , stone screening and binding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of binding material moorum etc. including cost of material labour all complete.	CUM	973			
2405	Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone screening and binding material including screening, sorting , spreading to template and consolidation with road roller including carriage spreading and consolidation of binding material moorum etc. Including cost of material , labour all complete.	CUM	3,893			
2406	Providing and applying Tack coat of low viscosity liquid bitumen of a suitable approved grade conforming to IS 73, 217 or 454 as applicable @ 10 kg/10sqm for an untreated WBM surface including scraping, cleaning with compressed air etc. complete.	SQM	3,893			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2407	Providing, mixing and laying of compacted 75 thk. Bituminous Macadam Course . Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling all complete.	SQM	3,893			
2408	Providing, mixing and laying premix carpet (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on a prepared base. Mixing applying rolling as per IRC specification.	SQM	3,893			
2409	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling as per specification all complete.	SQM	3,893			
2410	Supply and laying (400mm x 150mm X 350mm deep) precast concrete kerb stone of grade M20 with 20 mm aggregate and of shape as per detailed drawing including fixing in 13mm thk. cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc. complete as per specification.	RM	45			
2411	Providing and laying 230 mm wide bricks , with crushing strength of 50 kg/cm ² , on edge for protection including fixing in 13mm thk. cement mortar 1:6 complete.	RM	1,328			
2412	Dismantling of existing road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1Km etc. complete and as directed by Engineer.	SQM	90			
2413	Providing 25mm thick premix carpet on existing/damaged road surfaces (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on the existing base including tack coat, cleaning of existing surface, mixing applying rolling as per IRC specification.	SQM	3,893			

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SL. NO	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT
				In figures	In words	
2414	Concrete of grade M-30 in roads etc complete with 20mm nominal size graded aggregate complete as per specification.	CUM	18			
2415	Filling below Concrete roads with stone (63mm down graded) in layer not exceeding 200mm thickness including breaking of boulder to required sizes filling the interstices with selected sand and compacting to 85% of original volume of stone stack for all lifts all complete as per instruction of engineer in-charge.	CUM	450			
	TOTAL OF ALL ABOVE ITEMS IN RS					
	TOTAL OF ALL ABOVE ITEMS IN WORDS (RS					