



BHEL:PS-WR
TS: BHE/PW/PUR/SLPP-BOP/451
PRICE -BID -RATE SCHEDULE (BOP)

PART-II, VOL-III (BOP)

2X125 MW SURAT LIGNITE POWER PLANT				BOQ CONSISTING OF General civil works		
for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
				In figures	In words	
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS					
101	Excavation including providing cofferdams, 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					
i)	In all types of soils including silty clay, clayey sand, ash, murrum, laterite, coal sim etc.					
a	beyond 0 m and upto 2 m	CUM	174858			
b	beyond 2 m and upto 4 m	CUM	90531			
c	beyond 4 m and upto 7 m	CUM	15353			
d	beyond 7 m and upto 10 m	CUM	622			
e	beyond 10 m and upto 15 m	CUM	500			
i)	Excavation in Soft rock , Ordinary rock, Sandy soft rock which can be excavated with pneumatic rock breaker attachment of poclain, crow bars, pick axe etc.					
a	beyond 0 m and upto 2 m	CUM	10000			
b	beyond 2 m and upto 4 m	CUM	30000			
c	beyond 4 m and upto 7 m	CUM	20000			
d	beyond 7 m and upto 10 m	CUM	2000			
e	beyond 10 m and upto 15 m	CUM	1000			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
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	8772			
104		Extra over item 101 above for carriage/disposal of all types of excavated materials beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads in/outside of the plant including levelling & grading the disposed earth					
i)		Carriage beyond initial lead of 100m but not exceeding 1 Km.	CUM	50000			
ii)		Carriage beyond initial lead of 100m but not exceeding 2 Km.		100000			
iii)		Carriage beyond initial lead of 100m but not exceeding 5 Km.	CUM	184694			
105		Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes, are levelling etc. in layers not exceeding 250 mm thickness including lead upto 100 m and all lifts and including 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 the following densities:					
i)		Ordinary manual compaction	CUM	383			
ii)		90% Standard Proctor density	CUM	15000			
iii)		95% Standard Proctor density	CUM	2000			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
106	Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other under ground structures, pipes etc. in layers not exceeding 250 mm in thickness including all lifts and including excavating, loading, unloading, carting, filling, watering and compacting/ramming each layer, all complete as per specifications, drawings and as directed by the engineer for the following works					
i)	With selected good earth brought from borrowed areas arranged by contractor, including royalties, fees etc. for all leads (4 to 5 K.M.) and compacted to following densities					
a	90% Standard Proctor density	CUM	69554			
b	95% Standard Proctor density	CUM	2000			
ii)	With selected sand brought from quarries/river bed arranged by contractor, and compacting to 80% relative density etc. for all leads	CUM	200			
107	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 200 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 all complete as per instructions of engineer-in-charge.	CUM	500			
107A	Providing, laying C.N.S. material , in layers well compected with 95 % proctor density, with all materials (from 3 to 4 K.Ms.), tools, labours etc. all complete.	CUM	43634			
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:					
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	200			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
202	Concrete of grade M10 as levelling course , under and around foundations/floors etc. with 40mm nominal size aggregate at all elevations.	CUM	5683			
203	Concrete of grade M25 in foundations, under floors etc complete. with 20mm down graded aggregate at all elevations	CUM	21748			
204	Concrete of grade M25 in superstructure from finished floor level complete at all elevations with 20mm graded aggregate	CUM	4124			
207a	Providing and laying 150 mm thick cement concrete coping with cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) with drip mould at top of compound wall.	CUM	148			
208	Concrete of grade M25 in precast works like roof slabs/trench covers etc.including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection and fixing in position & setting in cement-sand mortar 1:3 etc. complete but excluding cost of reinforcement which will be paid under relevant item.	CUM	71			
209	Concrete of grade M25 in foundation, superstructure and in water retaining structures either below or above finished floor level including addition of suitable plastisizer confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and subsequent reduction in cement content upto a maximum 10% complete etc. as per specification.	CUM	3500			
210	Concrete of Grade M-20 in paving, plinth protection, pipe encasing, wall foundation etc. complete.	CUM	194			
210A	230 thk Rubble soling with interstices properly filled with grits below RCC paving and 150 thk. Rubble soling below PCC plinth protection paving etc with sand/moorum packing	CUM	7763			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
211		Breaking existing concrete work at any level including reinforced concrete, removing the rubbish within a lead of 1Km., including transportation, loading, unloading, etc. all complete as directed by Engineer	CUM	1			
212		Cutting and making openings in existing concrete work including cutting of reinforcement, making good all surfaces, complete as per engineer in charge.	CUM	1			
300		SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATIONS, AS PER SPECIFICATIONS AND INCLUDING ALL LABOUR MATERIAL, SCAFFOLDINGS COMPLETE INCLUDING POCKETS ETC. FOR THE FOLLOWING:					
301		Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	54664			
302		Fairface form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc. for exposed concrete works.	SQM	1754			
303		Ordinary form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights.	SQM	8847			
304		Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights.	SQM	5691			
400		REINFORCEMENTS					


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
401	Taking delivery of steel materials from BHEL store/ storeyard, transportation, loading, unloading, storage at site, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements including cost of binding wires, labour etc. complete all as per specifications & drawings.(Reinforcement Steel will be supplied by BHEL free of cost)	MT	172			
402	Taking delivery of steel materials from BHEL store/ storeyard, transportation, loading, unloading, storage at site, straightening, cutting, bending, placing in position at any level, binding of High yield strength deformed st reinforcements/TMT bars including cost of binding wires, labour etc. complete all as per specifications & drawings.(Reinforcement Steel will be supplied by BHEL free of cost)	MT	2187			
500	WATER PROOFING AS PER SPECIFICATIONS. (Contractor has to furnish a guarantee for material and workmanship for a minimum period of 20 years.)					
501	Providing and laying roof water treatment with high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM C-898 . Thickness of membrane shall be min 1.5 mm. Treatment shall include application of polymerized mastic over roof achieving a smooth surface. Wearing course on the top of membrane shall consist of 40 mm thick PCC (1:2:4) cast in panels of maximum size 1.2 X 1.2 m and reinforced with 0.56 mm dia galvanised chicken wire mesh and sealing of joints using sealing compound / elastomeric water proofing membrane complete complete as directed by engineer in charge.	SQM	954			
502	Providing and laying chequered concrete tiles for pathways of size 200 X 200 and minimum thickness 22 mm confirming to IS 13801 over water proofing membrane including cement mortar bedding. (water proofing membrane paid else where)	SQM	23			
503	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	50			
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:					


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
601	Supplying & installation of bitumin impregnated fibre board confirming 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, drawings and instruction of engineer in charge:					
a	12mm thick joints.	SQM	300			
b	20mm thick joints.	SQM	50			
c	25mm thick joints.	SQM	150			
d	50mm thick joints.	SQM	25			
602	Supplying and filling in position hot applied bitumin sealing compund(Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compmpound in gaps in joints at all levels including application of primer, labour, material, equipments etc. all complete as per specification/drawing, instruction of engineer in charge.	Kg	50			
	Supplying and filling in position two parts polysulphide sealent confirming to IS 12118 including cleaning, mixing, pouring/injecting sealing compmpound in gaps in joints at all levels including labour, material, equipments etc. all complete as per specification / drawing, instruction of engineer in charge.	Kg	50			
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 equipment, transportation, loading, unloading, handling, welding, rivetting, 'bolting, cutting, drilling, scaffolding and setting as per specifications and drawings.	MT	11			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
702	Taking delivery from BHEL store/ storeyard, loading, unloading, transporting, storage & preservation at site, fixing of embedments, MS inserts, pipe sleeves, rails, guide rails angle pieces, anchor bolts of various diameters, plates supplied by BHEL units including cost of all labour, materials and equipment for fixing in position,scaffolding and setting in position including certain modifications if required as directed by engineer-in-charge complete as per specifications and drawings.	MT	12			
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 etc. all complete as per drawings and specifications and instructions of engineer.					
i	MS pipes of all diameters	Quintal	10			
ii	PVC conduits of all sizes	Quintal	10			
iii	Expansion fasteners (galvanised) of HILTI make or equivalent of safe tension capacity as specified below:					
	250 kg	Each	50			
	500 kg	Each	50			
	750 kg	Each	50			
800	GROUTING AS PER SPECIFICATION AS FOLLOWS.					
801	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1 (1 part cement :1 part sand) at any elevation including roughening surface, cleaning, ramming, curing etc. complete (pressure grout).	CUM	13			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
802		Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1 part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc. complete (non-shrink hand grout using approved admixture.)	CUM	2			
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 painted with two coat of zinc chrome primer and finished with three coats of synthetic enamel paint confirming to IS2074) [Aluminium alloy used for doors, windows, ventilators & partitions shall conform to designation HE9-WP of IS:733]					
901		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 or equivalent with electrocolor coating of minimum 15 microns thickness including all fixtures complete.	SQM	25			
902		Providing and fixing openable/fixed steel windows and ventilators with steel sections as per IS:1038 including painting with minimum 2 or more coats of synthetic enamel paint on primer complete.	SQM	412			
903		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 on centers side, top, bottom edges of shutter shall be of pressed steel channels of minimum 18 G, 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 or more coats of synthetic enamel paint on primer complete.	SQM	49			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
904	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 rein- forced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting & minimum 2 or more coats with fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.		SQM	20			
905	Providing and fixing single or double shutter anodized aluminium doors with electrocolor coating of minimum 15 microns thickness including concealed screws, hold fast, fixtures etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing 5.5 mm thick float glass or flat transparent sheet glass.		KG	200			
906	Providing and fixing single or double shutter anodized aluminium doors with electrocolor coating of minimum 15 microns thickness including concealed screws, hold fast, fixtures etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing 6 mm thick wired glass .		KG	200			
907	Providing and fixing aluminium glazed partition with electro color coating of minimum 15 microns thickness including glass beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for double glazing of two 6.0mm thick clear toughened safety glass hermetically sealed and separated by 12 mm thk gap for thermal insulation.		KG	200			
908	Providing and fixing aluminium glazed partition with electro color coating of minimum 15 microns thickness including glass beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for single glazing of 5.5 mm thick float glass or flat transparent sheet glass confirming to IS:2835.		KG	200			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
909		Providing and fixing anodised aluminium openable glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing of 4mm thick ground / frosted glass complete.	KG	50			
		Double glazing shall consist of two 6 mm thk. Clear toughened safety glass of min. 5.5 mm conforming to IS:2553, hermetically sealed & seperated by 12 mm thick gap for thermal insulation.					
910		Providing and fixing anodised aluminium openable glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing of 4mm thick plain sheet glass complete.	KG	50			
911		Providing and fixing aluminium ventilators/windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL/Jindal or equivalent shall be used for shutter frame. Provision shall be made for 6 mm thick fire and u/v resistant (suitable for use at 100 degee centigrade temprature) Multiwall Polycarbonate plain or tinted sheet .	KG	50			
912		Providing and fixing anodised aluminium openable/fixed glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL/Jindal or equivalent shall be used for shutter frame. Provision shall be made for glazing of 6mm thick wired glass complete.	KG	50			
915		Providing and fixing of over head hydraulic door closers of approved make & quality as directed by Engineer.	Nos	5			
916		Providing and fixing floor mounted Hydraulic door closer of approved make & quality as directed by engineer	Nos	5			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
919	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S 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	56			
920	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S 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	34			
921	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S 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, 3 coats of approved enamel paint etc., all complete as per specification- Electrically operated.	SQM	12			
922	Providing anodised aluminium Grills in Windows of approved design.	Kg	50			
923	Providing and fixing glazing in aluminium doors/partitions complete with glass panes of 5.5 mm thick float glass or flat transparent sheet glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50			
924	Providing and fixing glazing in aluminium doors complete with glass panes of 6 mm thick wired glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50			
926	Providing and fixing glazing in aluminium windows complete with glass panes of 4mm thick ground glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50			


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927	Providing and fixing glazing in aluminium windows complete with glass panes of 4mm thick plain sheet glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50			
929	Providing and fixing glazing in aluminium windows/ventilators, water proof Sky light/North light complete with 6 mm thick fire and u/v resistant (suitable for use at 100 degree centigrade temprature) Multiwall Polycarbonate plain or tinted sheet for preventing solar radiations complete with aluminium beading and sealed at ends as per manufacturers recommendations. Measurement shall be of glazing area in between extruded main sections.	SQM	50			
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC. COMPLETE, AS PER SPECIFICATIONS.					
1001	Providing brick work in cement mortar 1:5 (1 part cement 5 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm 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/cm2 at all depths, places and positions below plinth . Cement may also be used in stead of Lime without any extra cost.	CUM	5772			
ii)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 at all heights, places and positions above plinth . Cement may also be used in place of Lime without any extra cost.	CUM	1754			
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS.					


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2X125 MW SURAT LIGNITE POWER PLANT				BOQ CONSISTING OF General civil works		
for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1101	Damp Proof Course 50mm thk. 1:1.5:3 concrete (10mm down aggregate) with 2% of approved admixture of water proofing compound. Hot bitumen @ 1.7Kg./sqm shall be applied before & after the DPC as per specification.	SQM	53			
1200	CEMENT MORTOR PLASTER (Plastering work conforming to IS:1661 & IS:2042 sand used conforming to IS:1542) INCLUDING ALL MATERIALS SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION					
1201	External face of all walls shall be Providedwith 18 mm thick cement mortar plastering with an under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4 with approved water proofing compound conforming to IS:2645 as per specification.	SQM	3359			
1201A	For internal walls 18 mm thick plaster in C.M. 1:4 on uneven side of wall (under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4)	SQM	2731			
1201B	For internal walls 18 mm thick plaster in C.M. 1:6 on uneven side of wall (under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4)	SQM	394			
1201B	For internal walls 12 mm thick plaster in C.M. 1:4 on even side of wall.	SQM	2537			
1202	Providing 20 mm thick plaster in cement mortar 1:5 on compound walls, as per specification.	SQM	10200			
1203	Providing 15 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	100			
1204	Providing 20 mm thick plaster in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification.	SQM	100			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.	SQM	2140			
1206	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	100			
1207	Providing Plaster of Paris 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	SQM	2310			
1207a	15 mm thick 1:4 cement mortar on inside surface of C. W. 1200 mm dia. Pipes including reinforcement mesh.	SQM	9702			
1207b	Provide Steel wire fabric at the junction of brick masonry & concrete.	SQM	250			
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE. [note:- (1) 3 finishing coats of paint over a primer) (2) painting on masonry or concrete surfaces shall preferably be applied br rollers.]					
1301	Two or more coatscoats of exterior masonry paint (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and finest available pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant, alkali resistant and extremely durable with color fastness as per specification.	SQM	326			
1301A	Two or more coats of Water proof cement based paint as per IS: 5410 on external faces of walls, sun shades, etc.	SQM	12392			
1302	Three 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	200			
1303	All buildings interior walls shall be provided with two or more coats of oil paint upto a height of 1.5 m. from each floor.	SQM	206			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1304	Providing and applying two or more coats of oil bound distemper 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 as per manufacturers guideline.	SQM	2942			
1305	Providing and applying two or more coats of oil bound distemper for Ceiling 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 as per manufacturers guideline	SQM	1398			
1306	Chlorinated rubber based paint as per IS:9862 over walls.	SQM	2258			
1307	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 as per manufacturers guideline	SQM	2030			
1400	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS AND DESCRIBED IN SPECIFICATIONS.					
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 in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). Glass strip at all panel joints.	SQM	678			
1402	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 in skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	SQM	765			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1402A	Providing and laying 50 mm thick heavy duty I. P. S. flooring Granolithic finish with non metallic floor hardener topping of 12 mm thick in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). Glass strip at all panel joints.	SQM	153			
1402B	Providing and laying 50 mm thick heavy duty I. P. S. flooring with metallic floor hardener topping of 12 mm thick in flooring, skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	SQM	26			
1402C	Minium 2 coats of oil resistant painting over IPS floor finish.	SQM	32			
1417A	Providing and laying Heavy duty ceramic tiles of size 300x300x7.5 mm from SPARTEX / REGENCY MAKE or equivalent of approved shade & colour, complete as per specification.	SQM	561			
1417B	Providing and laying Heavy duty ceramic tiles of size 300x300x7.5 mm from SPARTEX / REGENCY MAKE or equivalent of approved shade & colour, for skirting and dado up to specified height complete as per specification.	SQM	1127			
1420	Providing and laying granite stone slab of 12mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	SQM	66			
1427	Providing and laying cinder filling in the toilets complete as directed by engineer in charge.	CUM	255			
1429	Providing and laying screed concrete 1:1.5:3 by volume laid in slope (with 6 to 10 mm nominal size stone chips) including all labour, material, scaffolding etc. complete for all lifts, all leads and of following average thickness:-					
a	40 mm	CUM	87			
b	30 mm	CUM	32			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING 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:						
1502	Designing, providing and fixing permanently color coated galvanized M.S. trough metal sheet roofing of approved profile and color over roof purlins for In-situ roof slab as per IS 14246. Thickness of deck plate shall be minimum 1.25 mm (18 gauge) and minimum trough depth of 38 mm and minimum yield strength of 250 Mpa. Zinc coating shall be conforming to IS:277 Class II Grade - 600. The external face shall have permanent color coating of PVF2 paint of minimum DFT 20 microns over primer and inner surface shall be coated with silicon modified polyester paint of minimum DFT 20 microns.		SQM	850			
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.						
1601A	Providing, fixing and laying Aluminium false ceiling system shall comprise of 84 mm wide 12.5 mm deep closed type plain panels of approved colour, roll formed out of 0.5 mm thk. corrosion resistant aluminium alloy AA 5050 fixed on roll formed carriers Additional hangers & height adjustment clips shall be provided for return air grills, supply air diffuser, light fixtures, AC duct etc. metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification A.C. ducts etc. suitable M.S. channel (minimum MC 100 @ 1.2m) grid shall also beprovided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. MS channel grid shall be paid separately under relevant structural items		SQM	51			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1601B	Under deck insulation shall comprise of 50mm thick resin bonded mineral wool insulation mat conforming to IS:8183. This mat shall be backed with 0.05 thick aluminium foil and 24G x24 mm wire mesh netting. They shall be fixed to ceiling or wall as the case may be with 100x50x6 slotted mild steel plate welded to MS plate embedment and 14 G steel wire drawn through slots and fixed to wire netting.		SQM	77			
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT SYNTHETIC ENAMEL PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.						
1701	MS (ERW) down take pipes conforming to class Medium of IS:1239 of following dia.						
i)	100 mm dia		RM	163			
ii)	150 mm dia		RM	46			
iii)	200 mm dia		RM	20			
	MS (ERW) Galvanised down take pipes conforming to class Medium of IS:1239 of following dia. of following dia.[for TG, Bunker bldgs.]						
i)	100 mm dia		RM	20			
ii)	150 mm dia		RM	36			
iii)	200 mm dia		RM	20			
1800	MISCELLANEOUS						
1801A	Providing and fixing PVC water stops 225mm wide, 6 mm thick.		RM	1334			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1806	Taking delivery of materials from BHEL store/ storeyard, loading, unloading, transportation, fabrication, erection, alignment, welding, primer (two coats), three finish coats (synthetic enamel paint) , of structural steel made from Mild Steel (Rolled Sections and Plates) shall conform to Grade 'A' of IS:2062 for thickness upto and including 20mm and shall conform to Grade 'B' of IS:2062 for thickness beyond 20mm thickness. Medium and High Strength steel shall conform to grade 'Fe-490B' of IS: 8500 or equivalent. Rolled Sections and Plates up to and including 20mm thickness shall be semi-killed condition. Plates beyond 20mm thickness shall be killed condition. All steel upto and including 40mm thickness shall be in as Rolled condition. Plates beyond 40mm thickness shall be Normalised and Ultrasonically tested. Pipes shall conform to IS:1161 Hollow(square and rectangular) Steel Sections shall be Hot Formed conforming to IS:4923 and shall be of Minimum grade Yst 240. Chequered Plate shall conform to IS:3502 and shall be minimum 6mm thick excluding projection, Steel for chequered Plates shall conform to Grade 'A' of IS	MT	1081			
	(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, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, toe plates, 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. 1806 b (i & ii), assembly, edge preparation, preheating					


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
	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, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, toe plates, 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.					
	1806 b (i & ii), assembly, edge preparation, preheating (& use of low hydrogen/ radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non- destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc. as per specification, drawings and instructions of Engineer.					
	(BHEL will supply above materials as per required technical specification free of cost).					
1806a	Supply, fabrication and delivery at site, transportation, loading/unloading of various sizes, GI pipe hand railing (1000 mm high) of 40 mm dia (Medium Grade) and fixing , conforming to IS:1161 including labour and material etc complete as per specifications.	MT	7			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1806b	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	1			
	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	1			
1806c	Supplying, fabrication , transportation, erection and alignment of factory made electroforged gratings 40 mm thick with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 1806b), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) and shall be complete as per specifications, drawings and instructions of the Engineer.		MT	10			
1807	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails. Anchoring lugs etc. complete as per specification.		MT	10			
1808	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding,drilling for vertical electrodes etc. complete as per specification and as directed by Engineer-in-charge.(BHEL will supply MS rods free of cost) Earthwork for trenching & backfilling shall be paid under relevant item		MT	20			
1809	Providing and fixing weep holes in Drains 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.	66			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1810	Providing and fixing GI rungs in concrete/brick walls at all elevations including @ zinc coating shall not be less than 900 g/sqm all complete.	KG	500			
1811	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 fasteners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection 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 including embedments shall be considered for payment purpose)	MT	15			
1812	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, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, complete as per drawing and directed.	MT	20			
1813	Providing and laying dry stone pitching of minimum thickness of 230 mm for slope protection in cement mortar 1:6 with hammer dressed 230 mm size stones including racking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. complete.	CUM	11332			
1814	Dismantling of existing compound brick wall Above Ground with plasters, coping 150mm thk. In PCC , 600 mm high anti-climbing device etc. all complete & disposing to a place as directed.	R/M	816			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
1814A	Dismantling of existing 4m wide 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 1 Km etc. complete and as directed by Engineer.		R/M	306			
1815	Anti termite treatment to column pits, wall trenches, foundatios, filling below floors etc.		SQM	53562			
1817	Two coats of bitumin painting of grade 85/25 conforming to IS 702 @ 1.7 kg / SqM of water/damp proffing.		SQM	61803			
1819	Water proof cement paint as per IS: 5410.		SQM	2285			
2000	FENCING AND GATES.						
2001	Min.3.0 m high fencing above toe wall. Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm and galvanised concertina. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire on inclined fencing confirming to IS 298 at top of chain link fencing shall be provided of height of 600 mm. 3 lines of 12 gauge high tensile spring steel wire shall be provided for the entire length of fencing.also 50x6 galvanised MS flats at every fifth post sandwiching the fencing with post using GI nuts & bolts. RCC toe wall. Fencing post galvanised MS angle section Struts at bends & at every fifth post of galvanised MS angle section including all accesories as per specification all complete.[Including concrete fdns., brickwork etc.]		R/M	33			
2004	600 mm high anti-climbing device of eight strands galvianised barbed wire with Y shaped fence post (MS angle fixed to pilasters including painting) on compound wall.		R.M.	1377			
2100	WATER SUPPLY						
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks of Jaquar, Marc or equivalent including sockets, union, nut etc. complete 15mm nominal bore.		NO.	26			


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2X125 MW SURAT LIGNITE POWER PLANT				BOQ CONSISTING OF General civil works		
for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
2102	Providing and fixing in position heavy duty brass stop cock of Jaquar, Marc or equivalent including all specials etc. complete as directed by Engineer 15mm nominal bore.	NO.	51			
2103	Providing and fixing in position heavy duty brass full way valve with wheel of leader or equivalent make 25mm nominal bore.	NO.	26			
2104	Providing and fixing in position heavy duty brass full way valve of Leader or equivalent make with wheel of approved quality 50mm nominal bore.	NO.	11			
2105	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples (GI fittings shall be of heavy duty "R" brand) etc. and clamps including cutting and making good the walls, with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc. complete (internal work) 15 mm nominal bore.	RM	816			
2106	Providing and fixing "C" Class GI pipes complete with GI fittings (GI fittings shall be of heavy duty "R" brand) a clamps including cutting and making good the walls with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc. complete (internal work) 20 mm nominal bore.	RM	510			
2107	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples (GI fittings shall be of heavy duty "R" brand) etc. and clamps including cutting and making good the walls with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc.complete (internal work) 25 mm nominal bore (N.B).	RM	510			
2108	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples, (GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground including trenching & refilling, Connections shall be smoke tested etc. complete (external work) 15mm nominal bore (N.B).	RM	816			
2109	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples, (GI fittings shall be of heavy duty "R" brand)with hessein wrapped & bituminous coated for below ground etc. including trenching & refilling, Connections shall be smoke tested etc.complete (external work) 20mm nominal bore (N.B).	RM	510			


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for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
2110	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples,(GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground, including trenching & refilling Connections shall be smoke tested etc.complete (external work) 25mm nominal bore (N.B).	RM	1224			
2111	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples,(GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground including trenching & refilling, Connections shall be smoke tested etc.complete (external work) 50mm nominal bore (N.B).	RM	510			
2112	Providing and fixing wall to wall Bath room 5.5 mm thk float glass mirror from reputed mirror manufacturer with bevelled edges including all fittings. Mirror shall be mounted with glass adjustable revolving CP brackets etc. complete with CP screws as per specification.	Sq. m.	61			
2114	Providing and fixing 600x20mm dia Stainless steel wall mounted towel rail etc. all complete as per specification.	NO.	26			
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc.complete as per specification.	NO.	51			
2116	Providing and fixing Stainless steel liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on Stainless steel brackets etc.complete as per specification.	NO.	51			
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.	26			
2118	Providing and fixing chromium plated brass shower rose of Jaquar, Marc or equivalent with 15 or 20 mm inlet all complete.	No.	20			
2119	Providing & fixing P.V.C. water tank (Syntex or equivalent) in position of 2000 litres capacity. 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	NO.	8			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
2120	Providing and fixing in position in the base slab of water retaining structures non return valves of 90mm diameter non metallic PRV pipe and 160mm diameter OD perforated PVC housing pipe 430mm long including graded gravel filters as per IS:4558-1995 and as shown in the drawings all complete.	Nos.	224			
	Stainless steel kitchen sink 750 mm in size including 12 mm thick polished granite stone slab over RCC slab all complete.	Nos.	6			
	An eye & face fountain combined unit with receptacle along with wash basin conforming to IS:10592 shall be provided in battery room, DM Plant & Chlorination plant.		6			
2200	SANITARY WORKS					
2201	Supply and fixing vitreous china wash basin , Hindustan or Vitreous makes or equivalent makes, size 600x450 (oval shape) with all fittings as per IS:2556 (Part 6 sect.1) to be fixed on concrete platform finished with 12 mm thk. polished granite stone, 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.	26			
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink , Hindustan or Vitreous makes or equivalent makes, 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			
2203	Providing and fixing colour European type water closet, Hindustan or Vitreous makes or equivalent makes , with siphon, open front solid plastic seat and plastic cover, 390 mm high 12.5 litre glazed stone water flushing cistern with valveless fittings,C.I brackets with paint necessary C.P connections with toilet roll holder etc. complete as per specification.	NO.	15			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
2204	Providing and fixing WC (indian type) Orissa pattern, Hindustan or Vitreous makes or equivalent makes, (580x440 mm) 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.	15			
2205	Providing and fixing wall type glazed vitreous china urinals, Hindustan or Vitreous makes or equivalent makes , with C.I photo-voltaic flushing cistern with flush pipes, lead pipes, gratings, CP bottle traps and necessary C.P fittings all complete as per specifications.	NO.	51			
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 150mm dia , as per specifications.	RM	1137			
2210	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 200mm dia , as per specifications.	RM	25			
2211	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 250mm dia , as per specifications.	RM	26			
2212	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 300mm dia , as per specifications.	RM	474			
2213	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 500mm dia , as per specifications.	RM	100			
2214	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 600mm dia , as per specifications.	RM	347			
2215	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 900mm dia , as per specifications.	RM	92			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
2218		Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all completeas per specifications.	NO.	10			
2219		Providing and fixing circular heavy duty man hole cover of 600mm dia with frame all complete as per specification.	NO.	5			
2220		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.	5			
2221		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.	5			
2222		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.	5			
2223		Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	5			
2226		Providing and fixing white viterous urinal partitions, Hindustan or Vitreous makes or equivalent makes , all complete as per specification.	NO.	26			
2227		Breaking of existing 300 thk RCC wall to receive 900 MS pipe at 4m below ground for RWR forebay & disposing the debris to the place earmarked by customer.	CUM	1			
2228		Dismantling of existing 7.0 m. wide road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, including disposal of debris within a lead of 2 to 5 Km etc. (Including shoulder)	R/M	153			


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for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.							
		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
Raw water reservoir, Grading and leveling and Part Lignite Pile Run-off pond							
1	Earth work in stripping of top soil (minimum 300mm depth) for seat of embankment including 2.50m wide strips beyond and continuous with the base of embankment on both upstream and downstream side so as to exclude all debris, grass, bushes, trees including roots and organic materials etc from the area and disposal of the stripped materials outside reservoir area etc all complete as per specification and as directed by the engineer-in-charge.		SQ.M.	11220			
2	Earthwork in excavation in all type of soils and soft rock including moorum, ash, decomposed rock etc upto any level for foundations, inside reservoir, trenches, drains, pipelines, sumps and substructures etc including site clearance, setting out, dewatering, shuttering and shoring if required, dressing of sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated materials within a lead of 1km etc all complete as per specification and as directed by the engineer-in-charge.						
a	Earthwork in excavation in all type of soil, moorum,ash etc. as above		CU.M.	40894			
b	Earthwork in excavation in all type of soft rock, decomposed rock which can be excavated with crow bars, pneumatic rock breaker attachment with poclain as above		CU.M.	20000			
3	Disposal of surplus excavated earth/soft rock beyond an initial lead of 1km and upto a lead of 5km, dumping, spreading and levelling the dumped soil etc all complete as specified and as directed by the engineer-in-charge.		CU.M.	30600			
4	Earthwork in embankment filling using selected approved quality of soil (suitability of soil as per IS:1498) from approved borrow areas (borrow areas to be acquired by the bidder at no extra cost) including setting out, sorting, breaking clods, handling, transportation, spreading, watering, compaction in layers to minimum 95% of maximum dry density (Standard Proctor Test), levelling, dressing, finishing to required slopes and grades, dewatering if necessary including all lifts and leads etc all complete as per specification and as directed by the engineer-in-charge.		CU.M.	12964			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
5	Supplying, stacking and laying sand of approved quality as sand blanket/filter at the prepared base of reservoir, in body and slopes of embankment including screening, washing, watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CU.M.	8619			
6	Supplying, stacking and laying 150mm thick gravel filter of approved quality below rip rap in slopes of embankment including screening, washing, watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CU.M.	51			
7	Providing and placing approved quality of 1mm thick high density polyethylene liner (HDPE) films manufactured from polyethylene resin over sand blanket in the base of reservoir as well as on side slopes of embankment to prevent seepage including joining with approved method, fixing at the edges in plain cement concrete by providing 300mm wide and100mm thick plain cement concrete 1:2:4 on the top of embankment as shown in the drawing etc all complete as per specification and as directed by the engineer-in-charge. Minimum width of HDPE liner shall be 6m.	SQ.M.	26010			
8	Providing and placing 300mmx300mm size and 50mm thick precast concrete tiles of grade M-15 over 25mm thick cement sand mortar of 1:4 on HDPE liner at the bed of reservoir and on side slopes of embankment, joints to be filled with cement sand mortar 1:4 etc all complete as per specification and as directed by the engineer-in-charge. The rate shall be inclusive of cement sand mortar as well.	SQ.M.	25092			
9	Providing and fixing in position 90mm diameter pressure relief valve in the bed of reservoir including non metallic PRV pipe and 430mm long 160mm diameter (OD) perforated PVC housing pipe, nylon jali, perforated end plug, collar, graded filter etc as per IS:4558, excavation, fixing in HDPE liner with joints water tight etc all complete as per drawing and as directed by the engineer.	Each	15			
10	Supplying, stacking and laying hand placed rock toe at the down stream of embankment with approved quality of rock fragments including necessary excavations if any etc all complete as per specification, drawing and as directed by the Engineer-in-Charge.	CU.M.	1530			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
11	Supplying, stacking and laying hand placed rip rap on the outer slope of embankment with approved quality of rock fragments including materials and necessary excavations if any etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CU.M.	102			
12	Supplying, stacking and laying boulder pitching with cement sand mortar 1:4 caulking on the slopes and outside the reservoir area with approved quality of rock fragments including materials and necessary excavations if any etc all complete as per drawing, specification and as directed by the engineer-in-charge.	CU.M.	20			
13	Providing and placing turfing with approved quality of grass on the outer slope of embankment including cost of all labour, materials, transportation and watering etc all complete as per specification and as directed by the engineer-in-charge.	SQ.M.	1734			
14	Providing and laying 400mm diameter R.C.C hume pipes of class NP3 conforming to IS:458 with collars, jointing the pipes with cement sand mortar 1:2 and testing of joints etc all complete as per specification and as directed by the engineer-in-charge.	R.M.	26			
15	Providing and laying 500mm diameter R.C.C hume pipes of class NP3 conforming to IS:458 with collars, jointing the pipes with cement sand mortar 1:2 and testing of joints etc all complete as per specification and as directed by the engineer-in-charge.	R.M.	26			
16	Providing and fixing of 150mm square and 900mm long guard stones over the top of embankment (cost of PCC grade M10 for encasement will be paid seperately) etc all complete as per drawing, specification and as directed by the engineer-in-charge.	Each	255			
17	Supplying, stacking and providing crushed or broken stone aggregates of size 63mm & down for WBM (to be laid in three courses with suitable gradings as per drawing) including necessary excavation, packing with screenings, binding materials like murrum, watering and compaction with road rollers 8-10T capacity to make required line, slope and levels etc all complete as per drawing, specification and as directed by the engineer-in-charge.	CU.M.	270			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
18	Providing and applying tack coat of low viscosity liquid bitumen of suitable approved grade conforming to IS: 73, 217 or 454 as applicable at the rate of 10kg/10sq.m on untreated WBM surface etc all complete as per drawing, specification and as directed by the engineer-in-charge.	SQ.M.	893			
19	Providing, mixing and laying premix carpet of compacted 25mm thickness in a single course composed of suitable small size aggregates premixed with a bituminuous binder on the prepared base (as per IRC) etc all complete as per specification and as directed by the engineer-in-charge.	SQ.M.	893			
20	Providing and applying liquid seal coat comprising of an application of a layer of bituminuous binder at the rate of 9.8 kg/10 sq.m followed by a cover of stone chips at the rate of 0.09cum/10sq.m including rolling etc all complete as per specification and as directed by the engineer-in-charge.	SQ.M.	893			
21	Earth work in back filling around foundations, plinths, retaining walls, sumps and drains etc to proper grade and level with selected good soil free from shingle, salts, organic materials, roots, sods or any other foreign substances within a lead of 1km from available excavated soil including re-excavating loose soil, transportation, watering and ramming in layers of 25cm thickness (loose) and compacted to minimum 90% maximum dry density (Standard Proctor test) by manual/ mechanical means, dressing etc all complete as per specification, drawings and as directed by the engineer-in-charge.	CU.M.	122			
	Providing and placing concrete work including cost of labour, materials and equipments for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) etc complete as per drawing and specification unless specified otherwise for the following.					
22	Concrete of grade M-10 as levelling course below finished floor level, under and around foundations/floors, drains, pits, sumps, mass dumps, encasing guard stones etc at all levels complete.	CU.M.	41			
23	Concrete of grade M-25 in foundations, under floors, culverts, retaining walls, abutments, substructures and superstructures etc at all levels complete.with 20mm nominal size graded aggregate	CU.M.	128			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
24	Concrete of grade M-20 in paving, plinth protection, pipe encasement etc including finishing of concrete monolithically complete.	CU.M.	26			
	Supplying, fixing and removing formwork at any elevation as per drawing, specification and as directed by the engineer-in-charge including all labour, materials, scaffoldings and providing pockets etc all complete for the following.					
25	Ordinary form work at any level below and above finished ground floor level for foundations, footings, bases of columns, walls, pilasters, beams, mass concrete, trenches etc for unexposed concrete works.	SQ.M.	1275			
26	Fairface form work at any level above finished ground floor level for columns, walls, beams, roofs, suspended floors, lintels, cantilevers, staircases, landing, balconies, arches, domes etc for all heights.	SQ.M.	255			
	Reinforcements					
27	Taking delivery of steel materials from BHEL store/ storeyard, transportation, loading, unloading, storage at site, straightening, cutting, bending, placing in position at any level, binding of High yield strength deformed st reinforcements/TMT bars including cost of binding wires, labour etc. complete all as per specifications & drawings.(Reinforcement Steel will be supplied by BHEL free of cost)	MT	9			
	Miscellaneous					
28	Providing and laying of 200mm diameter RCC hume pipes class NP2 conforming to IS:458 with collars, jointing with cement mortar 1:2 including testing of joints etc all complete as per specification and as directed by the engineer-in-charge .	R.M.	10			
29	Providing and fixing 225mm wide PVC water stops in concrete walls etc as per specification and as directed by engineer-in-charge.	R.M.	102			
30	Providing all concrete surfaces in contact with soil with three coats of bitumen paint etc all complete as per specification and as directed by engineer-in-charge.	SQ.M.	459			
31	Supply, fabrication and erection of 32mm nominal bore GI pipes conforming to IS: 1239 heavy type including all connectors with screwed ends and fixing them to the hand rail posts etc all complete as per specification and as directed by engineer-in-charge.	R.M.	1224			


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PART-II, VOL-III (BOP)

2X125 MW SURAT LIGNITE POWER PLANT				BOQ CONSISTING OF General civil works		
for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
32	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km. in all types of soil including ash, laterite, moorum etc all complete as per specification and as directed by the Engineer in-Charge.	CUM	30600			
33a	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km in soft rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with poelain and as approved by engineer.	CUM	7968			
33b	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km in hard rock which can be excavated by means of controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer. Prior approval of blasting from all the concerned department including safety measures shall be a part of this job within the quoted rates		2000			
34	Disposal of surplus excavated earth beyond an initial lead of 1km and upto a lead of 5km	CUM	20400			
35	Earth work in filling for levelling and grading using borrowed good earth (borrowed good earth to be arranged by the contractor at his own cost including royalty etc.) on prepared surface obtained by compacting with mechanical means including setting out, filling in horizontal layers not exceeding 250mm compacted thickness, spreading, sorting, breaking clods, watering, compaction with proper moisture content to achieve a minimum 95% of maximum dry density (standard Proctor density), dewatering (if required), testing, approaches, finishing to required lines, grades and slopes, levelling etc complete as per specification, drawing and as directed by the engineer.	CUM	239700			
36	Providing, stacking and laying 300mm thick boulder pitching with caulking and pointing with cement sand mortar (1:4) on the slopes of earth fill/cut with approved quality of rock fragments	CUM	6987			
	R O A D S					


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PART-II, VOL-III (BOP)

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for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.						
	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
	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.					
101	Excavation In all types of soils including, Preparation of sub grade by excavating earth to required depth in all type of soils including ash, laterite, morrum etc, dressing to camber and consolidating the base including making good the undulation and stacking/disposal of surplus excavated material within a lead of 1.0km etc all complete.	CUM	25500			
102	Preparation of sub grade by excavating earth to required depth in soft rock including weathered rock which can be excavated by means of crow bar, pick axe etc but does not require chiselling or blasting , dressing to camber and consolidating the base including making good the undulation stacking/ disposal of surplus excavated material within a lead of 1.0km etc all complete.	CUM	587			
103	Disposal of surplus excavated earth beyond an initial lead of 1km and upto a lead of 5km.	CUM	25500			
104	Earthwork in filling/embankment filling using approved quality of cohesive non swelling soil from approved borrow areas (borrow areas to be acquired by the bidder at no extra cost) including stripping of borrow areas, excavation, lifting, handling, sorting, breaking clods, transportation, laying, spreading, watering, compaction in layers to achieve a minimum of 97% maximum dry density (Standard Proctor Test), levelling, dressing, finishing to required camber, slopes and grades, dewatering if necessary including lifts and leads etc all complete.	CUM	12925			
106	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required degree and finishing to required level, slope/camber etc all complete.	CUM	1664			
107	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates of 90 to 40 mm size, stone screenings 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	5050			


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		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
108	Providing & laying water bound macadam base course in layers of required thickness with stone aggregates of 63mm to 40mm size, stone screenings 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	3801			
109	Providing & laying water bound macadam base course with stone aggregates of 50mm to 20mm size, stone screenings 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	1959			
110	Providing and applying tack coat of low viscosity liquid bitumen of suitable approved grade confirming to IS:73, 217 or 454 as applicable @ 10 kg/10sqm on untreated WBM surface including scraping, cleaning with compressed air etc all complete.		SQM	17186			
111	Providing and applying tack coat of low viscosity liquid bitumen of suitable approved grade confirming to IS:73, 217 or 454 as applicable @ 5kg/10sqm on a bituminous macadam base including cleaning the base surface with a mechanical broom or any other approved equipment/method etc all complete.		SQM	17186			
112	Providing, mixing and laying dense bituminous macadam course of compacted 75 mm thickness with bitumen of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling etc all complete.		SQM	17186			
113	Providing, mixing and laying 20 thick premix carpet (as per IRC-14) of compacted 20mm thickness in a single course composed of suitable small size aggregates premixed with a bituminous binder on a prepared base as per specification including rolling etc all complete.		SQM	34372			


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	 DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
114	Providing, mixing and laying compacted 50mm thick Asphaltic Concrete (Bituminous Concrete) wearing course with a bitumen content of 6% by weight of total mix, aggregates and filler including hot mixing, hot laying, rolling etc all complete as per specification and as directed by the engineer. Bitumen shall be of a suitable approved grade complying with IS:73 standards.	SQM	17186			
115	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 etc as per specification all complete.	SQM	34372			
116	Providing, laying and fixing 400mm long x 150mm thick x 350mm deep precast concrete kerb stone blocks of approved pattern with concrete grade M20 using 20mm down size aggregates as per drawing including fixing in 13mm thick cement sand mortar 1:2 in joints, finishing the joints with neat cement paste, making drainage openings wherever required etc all complete.	RM	6399			
117	Providing and laying 60mm thick interlocking precast concrete blocks of approved colour and pattern with concrete grade M30 using 20mm down size aggregates including providing necessary bedding, fixing the precast concrete blocks and finishing the joints etc as per manufacturer's specification.	SQM	102			
118	Dismantling of existing road consisting of premix carpet, curb stone/brick on edge, bitumen macadam course, WBM, preparing subgrade to receive new WBM including camber consolidation, shoulder, disposal of debris within a lead of 1km etc	RM	26			
119	Providing and laying of 150 mm diameter R.C.C hume pipes (scupper drain) of class NP2 conforming to IS:458 with collars, jointing the pipes with cement sand mortar 1:2 and fixing in position etc all complete.	RM	1224			
120	Providing and laying of 300 mm diameter R.C.C hume pipes (scupper drain) of class NP2 conforming to IS:458 with collars, jointing the pipes with cement sand mortar 1:2 and fixing in position etc all complete.	RM	518			

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for balance of Plant like Raw water reservoir, CW Pump house, Clarified water pump house, DG Building, transformer yard, MCC, Service transformer, VFD, Analyser room, Fuel oil tanks and pump house, compressor building, CST Tank foundation, ARCW Pump house and air washer unit, Fire water tank and pump house, CW pipeline, civil & structural work for pipes and cable racks, including Land Grading & leveling, Roads, Storm water drainage, Septic Tanks, etc.							
		DESCRIPTION	UNIT	Total	RATE in Figure	RATE in Words	AMOUNT in RS.
121	Providing and laying of 600 mm diameter R.C.C hume pipes (scupper drain) of class NP2 conforming to IS:458 with collars, jointing the pipes with cement sand mortar 1:2 and fixing in position etc all complete.		RM	347			
	TOTAL OF ALL ABOVE ITEMS IN RS						
	(TOTAL IN WORDS RS.....						