

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS				
101	Excavation 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(disposal) up to 100 meters and a lift up to 2.0 meters.				
i)	In all types of soils including expansive soil, ash, morrum, laterite	CUM	542507		
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 2 m and upto 4 m	CUM	605489		
b	beyond 4 m and upto 7 m	CUM	58896		
c	beyond 7 m and upto 10 m	CUM	73950		
d	beyond 10 m and upto 15 m	CUM	1530		
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	92387		
104	Extra over item 101 above for carriage of all types of excavated materails 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				
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	137636		
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	157379		
iii)	Carriage beyond initial lead of 2 Km but not exceeding 5 Km	CUM	123932		
iv)	Carriage beyond initial lead of 5 Km but not exceeding 10 Km	CUM	207693		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
105	BACKFilling using selected excavated materials in trenches, plinths, foundations and other underground structures, pipes, etc. in layers not exceeding 200 mm thickness including re-excavation and loading from stock pile, transporting, unloading, filling, watering and compacting/ramming each layer to required degree as mentioned below for all leads and lifts all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	Minimum 85% Standard Proctor density	CUM	26049		
ii)	Minimum 90% Standard Proctor density	CUM	40887		
iii)	Minimum 95% Standard Proctor density	CUM	130070		
105A	BACKFilling using selected excavated materials directly from excavation area in trenches, plinths, foundations and other underground structures, pipes, etc. in layers not exceeding 200 mm thickness including filling, watering and compacting/ramming each layer to required degree as mentioned below for all leads and lifts etc all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	Minimum 85% Standard Proctor density	CUM	1050		
ii)	Minimum 90% Standard Proctor density	CUM	36106		
iii)	Minimum 95% Standard Proctor density	CUM	56666		
106	BACKFilling in trenches, plinths, foundations, and other underground structures, pipes etc using selected soil from borrow areas in layers not exceeding 200 mm in thickness and including excavating, loading, unloading, transporting, filling, watering and compacting/ramming each layer to required degree for all lead and lifts etc all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	With selected soil non expansive soil brought from borow areas arranged by contractor including royalties, fees if any etc.				
a	Minimum 90% Standard Proctor density	CUM	146612		
b	Minimum 95% Standard Proctor density	CUM	297648		
ii)	With selected sand brought from quarries/river bed arranged by contractor including royalties, fees if any and compacting to minimum 80% relative density etc.	CUM	10044		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
106A	Filling using selected materials from borrow areas below foundations and other under ground structures, pipes etc. in layers not exceeding 200 mm in thickness including excavating, loading, unloading, transporting, filling, watering and compacting/ramming each layer etc for all leads and lifts all complete as per specifications, drawings and as directed by the engineer for the following .	CUM	147334		
	With selected non expansive soil brought from borrow areas arranged by contractor, including royalties, fees etc. if any compacted to 100% Standard Proctor Density				
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	17869		
108	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	374		
109	Buldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	CUM	102		
110	Cutting of trees, including transportation, stacking at storage yard and disposal of unused material as per the direction of engineer in charge.				
i)	300 mm upto 600 mm girth	Nos.	15		
ii)	601 mm upto 900 mm girth	Nos.	15		
	GRADING & LEVELLING				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
111	Earth work in stripping of top soil upto a minimum depth of 0.20m below ground level so as to exclude all debris, grass, vegetation, bushes, trees including roots and organic materials etc for levelling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means including stacking/ disposal of stripped materials/earth, debris, vegetation, bushes, trees etc within a lead of 1km etc all complete as per specification and as directed by the engineer.	SQM	91800		
112	Earth work in cutting (excavation) upto any level in all types of soil and soft rock including ash, laterite, moorum, weathered rock, decomposed rock etc which can be excavated by means of crow bar, pick axe etc but does not require chiselling or blasting for levelling and grading including dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of excavated material within a lead of 1km etc all complete as per specification and as directed by the engineer.	CUM	18360		
113	Earth work in cutting (excavation) upto any level in hard rock requiring blasting/controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means without damaging the existing structures for levelling and grading including dressing the sides, levelling to grade and ramming the bottom, supply, storage & handling of blasting materials, stacking/disposal of excavated material within a lead of 1km etc all complete as per specification and as directed by the engineer.	CUM	2040		
114	Disposal of surplus excavated earth beyond an initial lead of 1km and upto a lead of 5km including levelling the disposed material etc all complete as specified and as directed by the engineer.	CUM	5100		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
115	Earth work in filling for levelling and grading using approved quality of borrowed cohesive non swelling soil (borrowed earth to be arranged by the bidder at no extra cost to the Owner/BHEL) on prepared surface obtained by compacting with mechanical means including setting out, sorting, breaking clods, handling, transportation, spreading, dewatering if necessary, watering, compaction in layers not exceeding 200mm compacted thickness compacting to a minimum 95% of maximum dry density (modified Proctor test) obtained as per IS:2720, Part VIII, levelling, dressing, finishing to required slopes and grades including all lifts and leads etc all complete as per specification and as directed by the engineer.	CUM	18360		
116	Providing, stacking and laying 300mm thick boulder pitching on the slopes of earth fill/cut with approved quality of rock fragments including necessary excavation (if any) compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	306		
117	Providing anti termite treatment under floors etc. as per specifications.	SQM	10907		
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: (IN CASE OF UNDERGROUND WATER AGRESSIVENES, SPECIAL CORRESPONDING CEMENT TO BE USED)				
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	381		
202	Concrete of grade M10 as levelling course , under and around foundations/floors etc with 40 mm nominal size graded aggregate.	CUM	1000		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
202 A	Concrete of grade M15 as levelling course , under and around foundations/floors etc with 40 mm nominal size graded aggregate.	CUM	17622		
203	Concrete of grade M20 in foundations, under floors etc complete with 20 mm nominal size graded aggregate.	CUM	8261		
203A	Concrete of grade M20 (1 part cement, 2 part sand, 4 parts of 12.5 mm graded aggregate by volume) as under bed to floors etc complete.	CUM	1500		
204	Concrete of grade M-25 in foundations, under floors etc complete with 20 mm nominal size graded aggregate.	CUM	46676		
205	Concrete of grade M-25 in superstructure from finished floor level complete at all heights with 20 mm nominal size graded aggregate	CUM	15541		
206	Concrete of grade M-25 in T.G. Block and machine foundations at all heights from finished floor level except top deck including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate.	CUM	10914		
207	Concrete of grade M-30 in top deck of TG or other machine foundations including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate.	CUM	1428		
208	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 complete.	CUM	459		

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209	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, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjusant precast units with M30 concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm).	CUM	1189		
210	Concrete of grade M25 in foundation, superstructure of 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 with 20 mm nominal size graded aggregate.	CUM	27389		
211	Concrete of Grade M-20 in paving, plinth protection, pipe encasing etc. complete with 20 mm nominal size graded aggregate.	CUM	158		
212	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	20		
ii)	Reinforced cement concrete of all grades	CUM	41		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
213	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, drawing, instructions of engineer in charge but excluding cutting of reinforcement	CUDM	1020		
214	Extra over and above St No 213 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.	SQM	306		
214 A	Providing and laying 50mm thick lime concrete below earth fill complete as per specifications	SQM	140000		
215	Providing and adding of ice of approved quality in concrete to maintain concrete tenmprature below 23 degree centigrade	CUM	867		
300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATIONS FOR ALL STRUCTURES, AS PER SPECIFICATIONS AND INCLUDING ALL LABOUR MATERIAL, SCAFFOLDINGS AND CENTEREING 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	88504		
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	31858		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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	5413		
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	105029		
305	Formwork for TG superstructure-fairface. (above finished floor level)	SQM	5100		
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, drawing and instruction of engineer in charge.				
i)	Upto 300 mm depth	Nos.	204		
ii)	From 301 mm upto 600 mm depth	Nos.	87		
iii)	From 601 mm upto 1000 mm depth	Nos.	51		
400	REINFORCEMENTS				
401	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	62		
402	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	9360		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
403	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	31		
404	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	233		
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 using multiplas standard waterproofing membrane. Thickness of membrane will be 3.0mm. this treatment will include coating the surface with compatible Multiplas Primer/ Multiplas Blown Bitumen of 85/25 or 90/15 grade and torch application of membrane with 100mm overlaps where required including 100 foam concrete insulation for TG bay and 75 mm for other bldg roof. h polymeric membrane of 4 kg/sq.m (multiplas - F manufactured by IWI or similar). Base preparation: surface shall be free from loose particles with no voids, honey combs or protrusion. Treatment shall include application of polymerized mortar over roof achieving a smooth surface and a primer coat. Laying: Bituminous emulsion is applied @ 100 grams/ sqm. and allowed to dry. Membrane shall be laid over a layer of hot blown bitumen 85/25 or 90/15 @ 1.2 kg/ sq.m and overlaps are sealed with torch application. Topping: The entire surface is covered with a layer of hot blown bitumen 85/25 or 90/15 @ 1.2 kg/sqm and finished with multiplas bituminous aluminum primer at 100 grams/sqm. Final topping: final topping with cement scree	SQM	16999		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
502	Providing and laying chequered concrete tiles over water proofing of minimum size 200 X 200 and minimum thickness 22 mm confirming to IS 13801 including 15 mm thick cement mortar (1:4) bedding. (water proofing paid else where)	SQM	8201		
503	Providing minimum two coats of bituminous paint on concrete surfaces in contact with soil in water retaining structures, of grade 85/25 conforming to IS: 702 @ 1.7 kg/sqm.	SQM	9677		
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	194750		
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:				
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	177		
b	20mm thick joints.	SQM	35		
c	25mm thick joints.	SQM	106		
d	50mm thick joints.	SQM	4		
602	Supplying and filling in position hot applied bitumin sealing compound(Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound 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	204		
700	M.S. EMBEDMENTS				

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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	340		
702	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 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 specifications and drawings.	MT	148		
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	39		
ii	PVC conduits of all sizes	Quintal	12		
iii	Expansion fasteners (galvanised) of HILTI make or equivalent of safe tension capacity as specified below:				
	250 kg	Each	2050		
	500 kg	Each	1744		
	750 kg	Each	1285		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
704	Supply, fabrication, transportation, delivery at site, erection, installation and alignment of MS foundation 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 80 mm dia, 3000 mm long including furnishing of labour, materials, euipments, welding, cutting, grinding, threading, drilling, pipe sleeves etc. all complete as per specification, drawing and instruction of the engineer.	MT	46		
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:				
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	4		
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 : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etccomplete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.	CUM	33		
803	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 : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer.	CUM	30		
804	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etcwith CobextraGP-2/CobextraGP-1/Pidigrout10/Pagel or equivalent all complete as per specifications. (Cost of all material and clearning the pocket by compressed air shall be in the scope of the contractor).	CUM	17		

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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 IS2074)				
901	Providing, fitting and fixing solid core flush door shutter as per IS2202 part II, 35 mm thick homogeneous particle board (decorative veneer prelaminate on both sides) bonded with BWP type phenol formaldehyde synthetic resin, particle board core conforming to IS3087 type I, 35/12 mm thick teak wood beading all around including preparation of working drawings, butt hinges, tower bolt, sliding bolt handles, knobs, door stoppers (all fitting shall be anodised aluminium color dyed), screws etc complete as per drawing, specification and instructions of engineer in charge.	SQM	124		
901A	Providing and fixing 12 mm thick particle board , decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading (excluding the cost of aluminium works).	SQM	20		
902	Providing and fixing openable/fixed steel windows and ventilators with steel sections as per IS:1361 including wire mesh, painting with minimum 2 coats of synthetic enamel paint on primer complete.	SQM	4263		
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 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	989		

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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 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, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	206		
905	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions 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 fillinf of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-mettalic protection etc	KG	8976		
	including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, 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).				
906	Providing and fixing of over head hydraulic door closers of approved make & quality as directed by Engineer.	Nos	133		
907	Providing and fixing floor mounted Hydraulic door closer of approved make & quality as directed by engineer	Nos	22		

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908	Providing and fixing pressed steel frames fabricated from 1.6 mm thk gauge M.S sheet mortised, reinforced strikes, hold fasts, adjustable floor anchors, floor tiles/weather bars etc. complete as per specifications.	KG	29762		
909	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	352		
910	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	10		
911	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	357		
912	Providing, fabricating and fixing in position window grills as per approved design pattern at all elevations and of all sizes including with or wihtout openings for operating window handles with all labour, material. Handling, equipment complete etc as per specification, drawing and instructions of engineer in charge.				

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ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
i)	Made of anodised aluminium sections	Kg	510		
913	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, with all labour and material etc. complete as per specification, drawing and instructions of engineer in charge.				
i)	4 mm clear sheet glass	SQM	153		
ii)	4 mm clear float glass	SQM	133		
iii)	5.5 mm clear float glass	SQM	3491		
iv)	6 mm wired glass	SQM	779		
v)	6 mm thick polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	51		
vi)	5.5 mm tinted glass	SQM	10		
vii)	Two nos. 6 mm thick clear toughened safety glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation.	SQM	318		
914	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	128		
915	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	100		
916	Providing and fixing in position of 25 mm wide aluminum Venetian blinds of approved shade with aluminum extruded duly epoxy powder coated top channel including mechanism etc complete as per specifications, drawing and instruction of engineer in charge	SQM	2009		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1000A	BLOCK WORKS MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-				
1001A	Providing and laying 250mm thick double wall block work in cement mortar 1:6 (1cement : 6 coarse sand) consisting of two layers of hollow concrete block 100mm each with 50mm air gap in between the layer for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm2 manufactured as per approved methodolgy and as per specification.	CUM			
1003A	Providing and laying 200mm thick block work in cement mortar 1:6 (1cement : 6 coarse sand) consisting of 200mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm2 manufactured as per approved methodolgy and as per specification.	CUM	700		
1004A	Providing and laying 150mm thick block work in cement mortar 1:6 (1cement : 6 coarse sand) consisting of 150mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm2 manufactured as per approved methodolgy and as per specification.	CUM	260		
1005A	Providing and laying Hollow glass block work of approved quality using suitable binding material as per manufacturers instructions including reinfocing the joints and filling the connections with adjacent concrete block work with fibrous/plastic non load bearing substance etc all complete as per specification.	CUM	100		
1007A	Dismantling existing block work at all level including stacking and removing the debris within a lead of 1Km. , including transportation, loading, unloading, etc all complete and as directed by Engineer.	CUM	50		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC. COMPLETE, AS PER SPECIFICATIONS. CONTRACTOR WILL HAVE TO SET UP A BRICK MANUFACTURING UNIT OF CAPACITY SUITABLE FOR ALL BRICKWORK ACTIVITIES OF THE ENTIRE PACKAGE. THE UNIT SHALL BE SET UP AS PER SPECIFICATION.				
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	231		
1002	Providing brick work in cement mortar 1:6 (1 cement 6 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 ordinary bricks of class designation 7.5 of nominal dimension	CUM	1873		
1003	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	638		
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 excluding plastering and painting as per specification.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	7		
1005	Providing brick soling spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	102		
1006	Providing brick soling including spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item.).- Using flat bricks.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	476		
1008	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	15		
1009	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	15		
1010	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification.	CUM	64		
1012	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	90		
1013	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	704		
1014	Providing and filling brick bats in soak pits.	CUM	10		
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS.				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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	435		
1200	CEMENT MORTOR 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 and conforming to IS 1661	SQM	44033		
1202	Providing 12 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification and conforming to IS 1661	SQM	1454		
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 and conforming to IS 1661	SQM	411		
1204	Providing 18 mm thick plaster in two layers in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification and conforming to IS 1661	SQM	42981		
1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.	SQM	29866		
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	411		
1207	Providing Plaster of Paris 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	SQM	18034		
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	8986		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1208-1	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	153		
1208-2	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	102		
1208-3	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	296		
1209	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	337		
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE				
1301	Two or more coats 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 guidlines. The final finished coating shall be fungus resistant, UV resistant, water repellant, alkali resistant and extremely durable with color fastness as per specification.	SQM	300		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1302	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	26153		
1303	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 including plaster of paris punning minimum 2 mm.	SQM	19596		
1304	Two or more coats of dry distempering of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	14806		
1305	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	6304		
1306	Providing and applying 2 or more coats of acid/alkali resistant chlorinated rubber 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	2412		
1307	Two or more coats of flat oil paint as per IS: 137 or fire resistant transparent paint as per IS: 162 over french polish as per IS: 348 on all woodwork as per specifications.	SQM	128		
1308	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	1020		
1309	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 including plaster of paris punning minimum 2 mm.	SQM	20135		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1311	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	901		
1312	Providing and applying 2 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	41675		
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. (Under bed to be paid seperately under relevant item)				
1401	Providing and laying 40 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles in flooring complete as per specification.	SQM	30829		
1402	Providing and laying 25 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado complete as per specification.	SQM	746		
1403	Providing and laying heavy duty ceramic industrial floor tiles of 25 mm thickness of approved size & shade as per IS 4457, laid in floors and landings , laid over a bed of acid resistant mortar 1:3 (1 acid resistant mixture & 3 clean sand) 25mm thick, of make "soman"/ 'kajaria' or equivalent jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete.	SQM	1022		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1404	Providing and Laying Precast Terrazo tiles including preparation of underbed all complete as per specifications	SQM	2587		
1406	Providing and laying removable false flooring with fire resistant particle board panels bonded by phenol formaldehyde of size 610X610 mm with all panel edges finished to a tolerance of +- 0.2 mm including 2 mm thick non static PVC top and lipping, supporting arrangement as per specification, drawings and engineer in charge.	SQM	306		
1407	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4860 of minimum thickness 40 mm thick in flooring/Dado . The tiles shall be abrasion resistant and durable. The potassium silicate 6 mm thick mortar as per IS 4832 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 as per IS 9510 and IS 412 complete as per specification.	SQM	3101		
1408	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 and as per specification.	SQM	1132		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1409	Providing & fixing chemical resistant (Acid & Alkali) bricks (75 mm thk) as per IS 4860 in the floor of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	102		
1410	Providing & fixing chemical resistant (Acid & Alkali) bricks (115 mm thk) as per IS 4860 in the walls of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	102		
1411	Providing epoxy coating 150 micron over epoxy primer over MS Grating/Chequered plate/any other steel structure complete as per engineer in charge.	SQM	102		
1411A	Providing epoxy coating on operatinf floor as per spec.	SQM	102		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1412	Providing and laying polished Kota stone 20 mm thk in flooring . The kota stone slabs/tiles 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	2244		
1413	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .	SQM	161		
1414	Providing and laying polished Granite stone of approved color and texture 25 mm thk and 600x600 size in flooring with brass dividers of 30x6 mm size at 1.8mx 1.8m intervals. The granite stone slabs/tiles laid over under bed of cement sand mortar (1:3) 15mm thick, 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	2933		
1415	Providing and laying polished Granite stone 20 thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	332		
1416	Providing and laying 7 mm thk vittrified ceramic tiles of polished variety of size 300x300 from reputed manufacturer, complete as per specification.	SQM	2915		
1417	Providing and laying 7 mm thk vittrified ceramic tiles of unpolished variety of size 300x300 from reputed manufacturer, complete as per specification.	SQM	1183		
1418	Providing and laying 7 mm thk vittrified ceramic tiles of polished variety of size 300x300 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	141		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1419	Providing and laying 7 mm thk vitrified ceramic tiles of unpolished variety of size 300x300 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	8		
1419 A	Providing and fixing white glazed tiles from reputed manufacturer all complete as per specifications	SQM	1428		
1420	Providing and laying granite stone slab of 12mm thickness single piece for wash basin slab, wall of black or approved colour with cutting and opening complete.	SQM	42		
1421	Providing and laying Heavy Duty dust pressed Ceramic Tiles in floors of size 300x300x7mm thick of reputed manufacturer of approved finish shade and colour.	SQM	83		
1422	Providing and laying colored Ceramic Tiles 5mm thick in dado of reputed manufacturer of approved finish shade and colour.	SQM	740		
1423	Providing and laying 40 mm thick heavy duty cement concrete flooring with cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) with required finish as per specification, drawing and instructions of engineer in charge.	SQM	4590		
1424	Supplying and spreading of non metallic granular aggregate of approved size over finished concrete flooring (finished concrete floor measured else where).	MT			
1425	Providing and laying of PVC flooring & skirting of minimum thickness 2 mm anti static flexible tiles as per IS 3462 and IS 5318.	SQM	1594		
1427	Providing and laying cinder filling in the toilets complete as directed by engineer in charge.	CUM	51		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1428	Providing and laying precast mosaic tiles 20 mm thick of approved shade with marble chips of sizes upto 6 mm laid in floors, skirtings and landings, jointed with neat cement slurry with pigment to match the shade of tiles including rubbing and polishing complete.	SQM	1459		
1429	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 propotion 1:1.5 (1 part cement, 1.5 parts chips) with marble powder 3:1 (3 parts cement, 1 part marble powder) in propotion mix dry in cement including pigments, rubbing, grinding, polishing etc in floors, skirtings, treads, risers and landings complete.	SQM	204		
1430	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	51		
ii)	Aluminium strips 40 mm wide and min 3 mm thick	RM	51		
iii)	Brass strips 20 mm wide and minimum 4 mm thick.	RM			
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:				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum 1.2mm (base metal excluding coating), with minimum trough depth of 38 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 and imposed loads during construction spanning 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. (height of trough required as per design should be included in the cost). M.S. Trough decking plate shall be connected to the top surface of the purlin, top chord of truss with self tapping self drilling white zinc plated heat treated high carbon steel screws of min 5.6mm diameter at spacing of 390mm C/c in the trough a	SQM	6746		
	all material, labour, tools, etc complete. In addition shear connector of 16mm dia and min 75mm long mild steel studs at spacing 520mm C/c shall be fixed on top cord of purlin passing through the metal decking. (Note:-Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor). Measurement shall be of the plan area of roof covered by MS trough metal decking.				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1503	Design supply & erection of permanent colour coated thermally insulated sandwiched metal cladding for external walls with troughed galvanised MS sheeting of 0.6mm thickness and 275 g/sqm of galvanisation 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 side of external sheeting shall have 7 micron of precoating. sandwiched Insulation of minimum 50mm thick bonded mineral wool blanket conforming to IS 8183 (minimum 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) confirming to IS 12436 , Inner sheet shall consist of 0.6 mm thick galvanised, MS permanently colour coated sheet with 20 micron DFT coating of silicone modified polymer paint on exposed face and 7 microns DFT coating on inner face and rate of galvanising as 150 gm/sqm , cladding shall be fixed to	SQM	4284		
	supports/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.				
1504	Design supply & erection of permanent colour coated non insulated 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 PVF2 coating of DFT 20 microns over primer having life span sustenance against weathering action, inner side shall be coated with same paint of minimum DFT 12 microns over primer. Cladding shall be fixed to supports/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.	SQM	1887		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1505	Providing and installing under deck insulation comprising of 50 thick resin bonded mineral wool insulation mat conforming to IS: 8183. This mat shall be backed with minimum 0.05 mm thick aluminium foil and 24Gx25 mm wire mesh netting. This shall be fixed to ceiling or wall as the case may be with 100x50x6 slotted mild steel plaie welded to MS plate inserts embedded at the soffit of the slab at 600 mm c/c and 14 G steel wire drawn through slots and fixed to wire nettingas per specification, drawing and instructions of engineer in charge.	SQM	4386		
1506	Proving and fixing Corrugated GI sheet as cladding/roofing as per IS 277 and minimum grade of galvanisation shall be 450 gm/sqm including all fixing accessories, labour, material, scaffolding etc all complete as per specification, drawing and instructions of engineer in charge.	MT	11		
1507	Proving and fixing profiled aluminium sheet as cladding including all fixing accessories, labour, material, scaffolding etc all complete as per specification, drawing and instructions of engineer in charge.	SQM	408		
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 preperation 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.				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
i)	12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	2725		
ii)	12 mm thick GRG board in profile (dome etc.) with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	257		
iii)	12 mm thick GRG board in tile of 600mmX600mm with double web design, galvanised steel with prepainted steel capping of approved shade and color, supporting Tee frame (24mmX38mm).	SQM	41		
1602	Providing and fixing prepainted coil coated steel ceiling system consisting of 0.5mm thick coated (as per IS277) galvanised to grade 180 mild steel (as per IS513), with regular modified polyster coating (DFT-10 microns) of required color and shade on the exposed surface and supporting grid system of roll formed double web design galvanised steel Tees 24mm X 38mm (with prepainted steel capping of approved shade and color) froming panels of specified size, for tile type panels, and roll formed stove enamelled 0.6mm thick steel carrier for fixing of lineal type panels by clip on arrangement, suspended from RCC slab/structural steel or catwalkway steel channel grid above with 4mm (minimum) galvanised wires (rods) with special height adjustment clips, including preperation of working drawings, providing openings for AC ducts, return air grills, light fixtures etc but excluding the cost of catwalkway all complete as per drawings, specifications and instructions of engineer				
i)	Tile type square pattern panels of 600mm X 600mm size with Tee support.	SQM	26		
ii)	Lineal pattern (closed type) of 100 mm nominal width with carrier support	SQM	26		
1602A	Providing and fixing Lineal Aluminium -Luxalon or equivalent false ceiling (type 84-c interior) with necessary fixtures and fittings all complete as per specifications.	SQM	1043		
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1701	GI down take pipes conforming to IS1239/IS3589 as per specification of following dia.				
i)	100 mm dia	RM	129		
ii)	150 mm dia	RM	1932		
iii)	200 mm dia	RM	515		
1702	CI down take pipes conforming to IS1230 with lead joints as per specification of following dia.				
i)	100 mm dia	RM	12		
ii)	150 mm dia	RM	336		
iii)	200 mm dia	RM	165		
1800	MISCELLANEOUS				
1801	Providing and fixing PVC water stops 225mm wide, 6 mm thick.	RM	148		
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	26		
1803	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction and cost of all material, labour all complete as per specification and as directed by the Engineer.	SQM	412		
1803A	Providing 50mm thick anticorrosive layer laid to slope consisting of compacted crushed stone screenings, 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 drawings and specifications, below fuel oil tanks and at such other places as per specifications and as directed by the Engineer.	SQM	412		
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	179		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1806	Preparation of detail fabrication drawing, supply, fabrication of structural steel (rolled section, built up section or combination), delivery at site, transportation, work in columns, girders, beams ,gantry girders, trusses, purlins, bracings, cleats, shear connectors, chequered plates, gratings, hand rails and other fittings including cutting, grinding, machining (where ever applicable), drilling, bolting (including MS or HSFG bolts and nuts), welding, reheating of welded joints, use of hydrogen/radiographic electrodes, shop coat of paint and touch of paints and final painting including all Non Destructive Tests complete.	MT	56		
1807	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails. Anchoring lugs etc. complete as per specification.	MT	97		
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-in-charge.	MT	112		
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.	5		
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	3126		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1811	Design, supply, fabrication, erection of stoplog gates in CW/RW and other Pump houses 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, 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	45		
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	10		
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	1428		
1814	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 2 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall all complete as per specification, drawing and instruction of engineer in charge.	Nos	204		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
1815	Providing and fixing ms vent pipes with cowls as per specifications, drawings and instructions of engineer in charge	KGS	510		
1816	Providing and fixing LDPE pipes 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	102		
	ii) 150 mm dia	RM	102		
	iii) 200 mm dia	RM	857		
2000	FENCING AND GATES.				
2001	Supplying and erecting in position 2.5 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 fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accesories as per specification all complete.	SQM	2249		
2002	Supplying and fixing G.I. barbed wire in fencing including G.I clips etc. complete as per specification	MT	2		
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,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	18		
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.	112		
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.	64		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	NO.	45		
2104	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	NO.	37		
2105	Providing and fixing GI pipes 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	296		
2106	Providing and fixing GI pipes complete with GI fittings a clamps including cutting and making good the walls etc. complete (internal work) 20 mm nominal bore.	RM	373		
2107	Providing and fixing GI pipes 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	383		
2108	Providing and fixing GI pipes 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	225		
2109	Providing and fixing GI pipes 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	214		
2110	Providing and fixing GI pipes 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	169		
2111	Providing and fixing GI pipes 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	153		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2112	Providing and fixing 610mmx453mmx5mm 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.	92		
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.	76		
2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. brackets etc. all complete as per specification.	NO.	37		
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc.complete as per specification.	NO.	98		
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.	98		
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.	38		
2118	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	No.	31		
2119	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 5000 litres capacity conforming to IS 12701. 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.	4		
	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 2000 litres capacity conforming to IS 12701. 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.	4		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 500 litres capacity conforming to IS 12701. 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.	13		
	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 1000 litres capacity conforming to IS 12701. 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.	10		
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.	86		
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.	10		
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.	41		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2204	Providing and fixing Orissa type glazed vitreous china pan conforming to IS2556 (Part 3)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.	71		
2205	Providing and fixing wall type glazed vitreous china urinals with C.I automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, CP bottle traps and necessary C.P fittings all complete as per specifications.	NO.	86		
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	212		
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	227		
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	186		
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	238		
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	231		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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	231		
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	1		
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	78		
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	41		
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	5		
2216	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	113		
ii)	250mm	RM	103		
iii)	300mm	RM	180		
iv)	400mm	RM	307		
v)	500mm	RM	149		
vi)	600mm	RM	93		
vii)	750mm	RM	72		
2218	Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	19		
2219	Providing and fixing circular heavy duty man hole cover of 600mm dia with frame all complete as per specification.	NO.	9		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
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.	12		
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.	17		
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.	13		
2223	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	95		
2224	Providing and installing approved brand single tap water cooler of 80 L cooling capacity complete in all respect.	NO.	16		
2225	Providing and installing approved brand single tap water cooler of 150 L cooling capacity complete in all respect.	NO.	12		
2226	Providing and fixing white vitreous urinal partitions all complete as per specification.	NO.	59		
2300	STRUCTURAL STEEL WORKS				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2301	Supply,fabrication, erection, alignment, welding, primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate as per IS:2074 & IS:1477 (Parts I & II). One coat to be applied at shop and the other after erection) of structural steel made from mild steel conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails (G.I.), toeplates, MS Rungs, insert plates, edge angles, embedments, lugs,	MT	9442		
	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. 2310 (i)), 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				

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
	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 the Engineer.				
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 zinc-chromate, including touch up painting as per specification and instruction of the Engineer.	MT	153		
2304	Treatment of structural steel complete including surface preparation, painting etc complete as per attached write up, specification, drawings and instructions of the Engineer.	MT	8061		
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	102		
2306	Providing and application of chemical resistant epoxy mortar lining (minimum 3mm thick) over primer coat (as per ST NO. 2303),consisting of epoxy resin, hardener and quartz sand (not exceeding 7 parts by weight) to steel surfaces of all types, shapes and sizes at all elevations to achieve even surfaces with all material, labour, equipment, handling, scaffolding etc. complete as per manufacturer's specifications approved by Engineer.	MT	153		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2307	Providng & application of 2 coats of chemical resistant seal coat over lining (as per ST NO. 2306) to cover up the porosity @ minimum 1 Kg of mix per coat of application for 4 to 5 m ² area of the surface including labour, material, equipment, handling, scaffolding etc. complete as per manufacturer's specification approved by the Engineer.	MT	153		
2308	Supplying, fabrication , transportation, erection and alignment of factory made electroforged gratings with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C` mild steel bolts and nuts to be paid separately under ST NO. 2310 (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	174		
2309	Extra over above ST NO. 2308, for finshing the fabricated grating unit with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, as per specifications, drawings and instructions of Engineer instead of painting with 2 coats of red oxide primer followed by two coats of enamel finish paint.	MT	51		
2310	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	31		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
	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	408		
2311	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	26		
2312	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	5		
	ii) In fabrication yard	MT	10		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2313	Re-erection of dismantled fabricatied structural steel members requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2312 and 2313 respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required posiion, 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 dismnatled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members and adjacent membersnot payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	MT	5		
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 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	34300		
2402	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	24900		
2410	Providing, mixing and laying premix carpet (as per IRC-14) of compacted 25mm 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	51		

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK.			
ST. NO	DESCRIPTION	UNIT	QYANTITY	RATE IN USD	AMOUNT IN USD
2412	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	63266		
2413	Providing, laying and fixing brick on edge with bricks having a minimum crushing strength of 75 kg/cm ² for edge protection including fixing in 13mm thick cement mortar 1:6 complete.	RM	1		
2601	Providing Sewage treatment Plant for the users of Power Plant all complete as per the specifications and the directions of engineer In charge	LS			
2701	RIVER FLOW STUDY AND C/S SURVEY	LS			

NOTES:

1	In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item but the work, if awarded, will be on the lowest quoted rate obtained against that item.
2	The rate shall be entered in figures as well as in words. In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.
3	The bidders shall enter both 'Unit Rate' & 'Amount'. In case of any mismatch between 'Total Amount based on Unit Rate' & 'Total Amount as quoted', the lower of the two shall be considered for evaluation and award.
4	The quantities indicated against each item above are tentative and are liable to vary depending upon the site requirement. The contractor has to supply / install actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be adjusted on the basis of quantities actually erected at site & payment will also be regulated accordingly for the same. The contractor confirms that unit rate quoted above takes care of such variations during execution stage.
5	Evaluation of the bids shall be done based on total price against this BOQ.
6	'Unit Rate' as well as 'Amount' against each item to be quoted in US Dollars (USD) only.