



BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS				
101	Excavation including providing cofferdams, shoring, strutting, sheeting, bracing, draining and pumping out water other than water below ground water table, clearing all grass, vegetation etc. including trimming of excavation bottom, stacking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead up to 100 meters				
i)	In all types of soils including silty clay, clayey sand, ash, murrum, laterite, coal sim etc.				
a	beyond 0 m and upto 2 m	CUM	97074		
b	beyond 2 m and upto 4 m	CUM	35395		
c	beyond 4 m and upto 7 m	CUM	9864		
d	beyond 7 m and upto 10 m	CUM	1000		
ii)	Excavation in Soft rock, Ordinary rock, Sandy soft rock which can be excavated with pneumatic rock breaker attachment of poclain				
	beyond 0 m and upto 2 m	CUM	500		
	beyond 2 m and upto 4 m	CUM	10000		
	beyond 4 m and upto 7 m	CUM	11000		


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	beyond 7 m and upto 10 m	CUM	3000		
102	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	40000		
104	Extra over item 101 above for carriage/disposal of all types of excavated materials beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads in/outside of the plant including levelling & grading the disposed earth				
i)	Carriage beyond initial lead of 100m but not exceeding Km.	1 CUM	20958		
ii)	Carriage beyond initial lead of 100m but not exceeding Km.	2	20000		
iii)	Carriage beyond initial lead of 100m but not exceeding Km.	5 CUM	122874		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
106	 Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other under ground structures, pipes etc. in layers not exceeding 250 mm in thickness including all lifts and including excavating, loading, unloading, carting, filling, watering and compacting/ramming each layer, all complete as per specifications, drawings and as directed by the engineer for the following works				
i)	With selected good earth available from Excavated materials from various foundations from a lead of 100Meter				
a	90% Standard Proctor density	CUM	20000		
b	95% Standard Proctor density	CUM	4500		
ii)	With selected good earth brought from borrowed areas arranged by contractor, including royalties, fees etc. for all leads (Appro 10 to 12 K.M.) and compacted to following densities				
a	90% Standard Proctor density	CUM	74889		
b	95% Standard Proctor density	CUM	395		
ii)	With selected sand brought from quarries/river bed arranged by contractor, and compacting to 80% relative density etc. for all leads	CUM	276		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	510		
107A	Providing, laying C.N.S. material brought from contractors own sources , in layers well compected with 95 % proctor density, with all materials (Approx from 10 to 12 K.Ms.), tools, labours etc. all complete. Including royalty, feeetc.	CUM	52240		
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			
108a	Stone Aggregate Paving in Transformer yard, aux Transformer:-				
	a) 100 mm thk. Paving of 40 mm size stone aggregates on top.	CUM	464		
	b) 100 mm thk. Paving of 20 mm size stone aggregates below above ref. Paving.	CUM	464		
109	Bulldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	CUM	1000		

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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
110	 Boulder filling in transformer soak pits.	CUM	1183		
200	PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AS PER DRAWING AND SPECIFICATIONS UNLESS SPECIFIED OTHERWISE FOR THE FOLLOWING:				
201	Concrete of grade M7.5 as filling course at any level below finished floor level, under and around foundations/floors, mass dumps etc with 40 mm nominal size graded aggregate using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer	CUM	100		
202	Concrete of grade M10 as levelling course, under and around foundations/floors etc. with 40mm nominal size aggregate at all elevations using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer	CUM	7198		
203	Concrete of grade M25 in foundations, under floors etc complete. with 20mm down graded aggregate at all elevations using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer	CUM	31978		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
204	Concrete of grade M25 in superstructure from finished floor level complete at all elevations with 20mm graded aggregate using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer	CUM	6637		
205	Concrete of grade M25 in T.G. Block and machine foundations at all heights from finished floor level except top deck supported over vibration isolation system 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 20mm down graded aggregate	CUM	5630		
206	Concrete of grade M-30(specially designed using 20mm/12mm down aggregate) in top deck of spring supported machine foundations at all elevations including TG foundations and including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation. The rate shall be inclusive of Ultrasonic pulse velocity test for top decks & columns of all framed machine foundations, rectifications of defects in concrete observed by UPV testing by cement/epoxy grout etc.using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer.For TG Deck, measurement of Natural Frequency at all cross beam locations of bearing pedestal by shaker test is to be conducted with with quoted rate.	CUM	734		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
206A	Extra over item no 206 for controlling of temperature of fresh concrete upto 25 degree centigrade using ice including all arrangements for providing , storing & mixing of ice with water, cooling of aggregates etc as per specification & instruction of engineer	Cum	600		
207	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 using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer.	CUM	1375		
208	Concrete of grade M25 in precast works like roof slabs/trench covers etc.including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection and fixing in position & setting in cement-sand mortar 1:3 etc. complete but excluding cost of reinforcement which will be paid under relevant item using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer.	CUM	976		
209	Concrete of grade M25 in foundation, superstructure and in water retaining structures with 20mm down graded aggregate 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 using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer	CUM	93		


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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
210	Concrete of Grade M20 in paving, plinth protection, pipe encasing etc. complete using 53 Grade Ordinary Portland Cement (OPC) of approved Manufacturer.	CUM	41		
210A	230 thk Rubble soling with interstices properly filled with grits below RCC paving and 150 thk. Rubble soling below PCC plinth protection paving etc with sand/moorum packing	CUM	8246		
211	Breaking existing concrete work at any level including reinforced concrete, removing the rubbish within a lead of 1Km., including transportation, loading, unloading, etc. all complete as directed by Engineer	CUM	20		
212	Cutting and making openings in existing concrete work including cutting of reinforcement, making good all surfaces, complete as per engineer in charge.	CUM	20		
300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATIONS, AS PER SPECIFICATIONS AND INCLUDING ALL LABOUR MATERIAL, SCAFFOLDINGS COMPLETE INCLUDING POCKETS ETC. FOR THE FOLLOWING:				
301	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	43161		
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	15218		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	18303		
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	24320		
305	Formwork for TG deck and deck slab of other machine foundations above finished floor level including special staging arrangements with structural supports/crips, primary & secondary beams, screw heads <i>specially designd for this purpose duly approved</i>	SQM	4855		
400	REINFORCEMENTS				
401	Taking delivery of steel materials from BHEL store/ storeyard, transportation, loading, unloading, storage at site, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements including cost of binding wires, labour etc. complete all as per specifications & drawings.(Reinforcement Steel will be supplied by BHEL free of cost)	MT	91		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
402	 Taking delivery of steel materials from BHEL store/ storeyard, transportation, loading, unloading, storage at site, straightening, cutting, bending, placing in position at any level, binding of High yield strength deformed st reinforcements/TMT bars including cost of binding wires, labour etc. complete all as per specifications & drawings.(Reinforcement Steel will be supplied by BHEL free of cost)	MT	3930		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
500	WATER PROOFING AS PER SPECIFICATIONS. (Contractor has to furnish a guarantee for material and workmanship for a minimum period of 20 years.)				
501	Providing and laying roof water treatment with high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM C-898 . Thickness of membrane shall be min 1.5 mm. Treatment shall include application of polymerized mastic over roof achieving a smooth surface. Wearing course on the top of membrane shall consist of 40 mm thick PCC (1:2:4) cast in panels of maximum size 1.2 X 1.2 m and reinforced with 0.56 mm dia galvanised chicken wire mesh and sealing of joints using sealing compound / elastomeric water proofing membrane complete complete as directed by engineer in charge.	SQM	14225		
502	Providing and laying chequered concrete tiles for pathways of size 200 X 200 and minimum thickness 22 mm conforming to IS 13801 over water proofing membrane including cement mortar bedding. (water proofing membrane paid else where)	SQM	510		
503	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/manufacturer's instructions, testing of samples for water proofing etc. complete.	KG	22		
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	306		
b	20mm thick joints.	SQM	41		
c	25mm thick joints.	SQM	163		
d	50mm thick joints.	SQM	26		
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	1020		
603	Supplying and filling in position two parts polysulphide sealant confirming to IS 12118 including cleaning, mixing, pouring/injecting sealing compound in gaps in joints at all levels including labour, material, equipments etc. all complete as per specification / drawing, instruction of engineer in charge.	Kg	918		
700	M.S. EMBEDMENTS				


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	487		
702	Taking delivery from BHEL store/ storeyard, loading, unloading, transporting, storage & preservation at site, fixing of embedments, MS inserts, pipe sleeves, rails, guide rails angle pieces, anchor bolts of various diameters, plates supplied by BHEL units including cost of all labour, materials and equipment for fixing in position, scaffolding and setting in position including certain modifications if required as directed by engineer-in-charge complete as per specifications and drawings.	MT	16		
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		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	15		
	500 kg	Each	15		
	750 kg	Each	15		
704	Fabrication, erection, installation and allignment of MS foundation bolt assembly in concrete along with nuts, lock nuts, anchor plates, stiffner plates, protective tape etc. upto and including 80 mm dia, 3000 mm long including furnishing of labour, materials, equipments, welding, cutting, grinding, threading, drilling etc. all complete as per specification, drawing and instruction of the engineer.(MS rods for bolts will be supplied by BHEL free of cost at BHEL stores/yard)	MT	104		
800	GROUTING AS PER SPECIFICATION AS FOLLOWS.				
801	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1 (1 part cement :1 part sand) at any elevation including roughening surface, cleaning, ramming, curing etc. complete (pressure grout).	CUM	113		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1 part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc. complete (non-shrink hand grout using approved admixture.)	CUM	32		
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 pressure grout using approved admixture.)	CUM	3		
900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTIONS ETC. COMPLETE AT ALL ELEVATION INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION AND DRAWINGS (all steel doors, windows and rolling shutters etc.shall be painted with two coat of zinc chrome primer and finished with three coats of synthetic enamel paint confirming to IS2074) [Aluminium alloy used for doors, windows, ventilators & partitions shall conform to designation HE9-WP of IS:733]				
901	Providing and fixing factory made prelaminated particle board of minimum 25 mm thickness (MDF exterior grade) door including hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent with electrocolor coating of minimum 15 microns thickness including all fixtures complete.	SQM	536		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
902	Providing and fixing openable/fixed steel windows and ventilators with steel sections as per IS:1038 including painting with minimum 2 or more coats of synthetic enamel paint on primer complete.	SQM	2657		
903	Providing and fixing steel single or double door shutters. Shutters shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers side, top, bottom edges of shutter shall be of pressed steel channels of minimum 18 G, voids to be filled with mineral wool (48 kg/cum density) including all fittings like tower bolts, handles, stoppers, aldrops etc. and painting with minimum 2 or more coats of synthetic enamel paint on primer complete.	SQM	262		
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 & minimum 2 or more coats with fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	122		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
905	Providing and fixing single or double shutter anodized aluminium doors with electrocolor coating of minimum 15 microns thickness including concealed screws, hold fast, fixtures etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing 5.5 mm thick float glass or flat transparent sheet glass.	KG	81		
906	Providing and fixing single or double shutter anodized aluminium doors with electrocolor coating of minimum 15 microns thickness including concealed screws, hold fast, fixtures etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing 6 mm thick wired glass .	KG	255		
907	Providing and fixing aluminium glazed partition with electro color coating of minimum 15 microns thickness including glass beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for double glazing of two 6.0mm thick clear toughened safety glass hermetically sealed and separated by 12 mm thk gap for thermal insulation.	KG	100		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
908	Providing and fixing aluminium glazed partition with electro color coating of minimum 15 microns thickness including glass beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for single glazing of 5.5 mm thick float glass or flat transparent sheet glass confirming to IS:2835.	KG	9384		
909	Providing and fixing anodised aluminium openable glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing of 4mm thick ground / frosted glass complete.	KG	204		
	Double glazing shall consist of two 6 mm thk. Clear toughened safety glass of min. 5.5 mm conforming to IS:2553, hermetically sealed & separated by 12 mm thick gap for thermal insulation.	KG	102		
910	Providing and fixing anodised aluminium openable glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing of 4mm thick plain sheet glass complete.	KG	100		

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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
912	Providing and fixing anodised aluminium openable/fixed glazed windows with electro color coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. Hollow extruded section of minimum 3 mm thickness as manufactured by INDAL or equivalent shall be used for shutter frame. Provision shall be made for glazing of 6mm thick wired glass complete.	KG	254		
913	Providing and fixing anodised aluminium fixed glazed skylights/north light with clear coating of minimum 15 micron thickness with provision for 6 mm thick multiwall polycarbonate plain or tinted sheet , fire and U.V. resistant complete with leak proofing.	KG	50		
914	Providing and fixing anodised aluminium louvers with clear coating of minimum 15 micron thickness including snap fit type beading, concealed screws, hold fasts etc. complete as per specifications.	SQM	12		
915	Providing and fixing of over head hydraulic door closers of approved make & quality as directed by Engineer.	Nos	102		
916	Providing and fixing floor mounted Hydraulic door closer of approved make & quality as directed by engineer	Nos	10		


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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
917	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	4437		
918	Providing and fixing frames of hollow extruded Aluminum alloy tubes of minimum 3 mm wall thickness as manufactured by INDAL or equivalent hold fasts, adjustable floor anchors, floor tiles/weather bars etc. complete as per specifications.	KG	1122		
919	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Mechanically operated.	SQM	108		
920	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Hand operated.	SQM	79		

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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
921	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3 coats of approved enamel paint etc., all complete as per specification- Electrically operated. rate shall be inclusive of providing motor of adequate capacity including cabling & cable termination on nearest DB with all required accessories for operating the rolling shutter	SQM	153		
922	Providing anodised aluminium Grills in Windows of approved design.	Kg	536		
923	Providing and fixing glazing in aluminium doors/partitions complete with glass panes of 5.5 mm thick float glass or flat transparent sheet glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	1224		
924	Providing and fixing glazing in aluminium doors complete with glass panes of 6 mm thick wired glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	255		


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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
925	Providing and fixing glazing in aluminium partitions complete with glass panes of two 6.0mm thick clear toughened safety glass hermetically sealed and separated by 12 mm thk gap for thermal insulation of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	102		
926	Providing and fixing glazing in aluminium windows complete with glass panes of 4mm thick ground glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50		
927	Providing and fixing glazing in aluminium windows complete with glass panes of 4mm thick plain sheet glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	50		
928	Providing and fixing glazing in aluminium windows complete with glass panes of 6mm thick wired glass of reputed manufacturer. Measurement shall be of glazing area in between extruded main sections.	SQM	51		
929	Providing and fixing glazing in aluminium windows/ventilators, water proof Sky light/North light complete with 6 mm thick fire and u/v resistant (suitable for use at 100 degree centigrade temprature) Multiwall Polycarbonate plain or tinted sheet for preventing solar radiations complete with aluminium beading and sealed at ends as per manufacturers recommendations. Measurement shall be of glazing area in between extruded main sections.	SQM	50		

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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
930	MS Side Hung Windows with 6mm thk. Wired glass.	SQM	10		
931	MS Flush welded hollow steel doors	SQM	10		
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC. COMPLETE, AS PER SPECIFICATIONS.				
1001	Providing brick work in cement mortar 1:5 (1 part cement 5 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² . Cement may also be used in stead of Lime without any extra cost.	CUM	758		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	10		
1002	Providing brick work in cement mortar 1:5 (1 cement 5 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.				

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² . Cement may also be used in place of Lime without any extra cost.	CUM	10223		
ii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	51		
1004	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls , chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing H.B. wetting at every third layer, raking out joints, curing, scaffolding etc complete using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² and clay ash bricks shall be as per IS 13757, minimum percentage of fly ash shall be 25%, excluding plastering and painting as per specification.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² . Cement may also be used in place of Lime without any extra cost.	SQM	1000		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	200		
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.				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	100		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	100		
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	100		
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	1000		
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS.				
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	355		
1200	CEMENT MORTOR PLASTER (Plastering work conforming to IS:1661 & IS:2042 sand used conforming to IS:1542) INCLUDING ALL MATERIALS SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1201	External face of all walls shall be Providedwith 18 mm thick cement mortar plastering with an under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4 with approved water proofing compound conforming to IS:2645 as per specification.	SQM	27900		
1201A	For internal walls 18 mm thick plaster in C.M. 1:4 on uneven side of wall (under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4)	SQM	30901		
1201B	For internal walls 18 mm thick plaster in C.M. 1:6 on uneven side of wall (under layer 12 mm thick in cement mortar 1:4 and top 6 mm thick layer in cement mortar 1:4)	SQM	1166		
1201B	For internal walls 12 mm thick plaster in C.M. 1:4 on even side of wall.	SQM	30633		
1202	Providing 15 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification.	SQM	100		
1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.	SQM	9813		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1207	Providing Plaster of Paris 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	SQM	7574		
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE. [note:- (1) 3 finishing coats of paint over a primer) (2) painting on masonry or concrete surfaces shall preferably be applied br rollers.]				
1301	Two or more coatscoats of exterior masonry paint (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and finest available pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidlines. The final finished coating shall be fungus resistant, UV resistant, water repellant, alkali resistant and extremely durable with color fastness as per specification.				
1301A	Two or more coats of Water proof cement based paint as per IS: 5410 on external faces of walls, sun shades, etc.	SQM	919		
1302	Three coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	500		
1302A	All buildings interior walls shall be provided with two or more coats of oil paint upto a height of 1.5 m. from each floor.	SQM	5759		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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 with 2mm POP punning as per manufacturers guideline.	SQM	53767		
1303A	Providing and applying two or more coats of oil bound distemper for Ceiling as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface with 2mm POP punning as per manufacturers guideline	SQM	26183		
1304	Providing and applying 2 or more coats of acid/alkali 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	1000		
1305	Chlorinated rubber based paint as per IS:9862 over walls.	SQM	2691		
1307	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	5493		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1400	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS AND DESCRIBED IN SPECIFICATIONS.				
1401	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). Glass strip at all panel joints.	SQM	52036		
1402	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles in skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	SQM	348		
1402A	Providing and laying 50 mm thick heavy duty I. P. S. flooring Granolithic finish with non metallic floor hardener topping of 12 mm thick in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). Glass strip at all panel joints.	SQM	2683		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1402B	Providing and laying 50 mm thick heavy duty I. P. S. flooring with metallic floor hardener topping of 12 mm thick in flooring, skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	SQM	173		
1402C	Providing and laying 25 mm Cast-in-situ Terrazo for risers & treads of stair-case. This shall be laid as per IS: 2114, using white cement or cement with colouring pigment, Chequered finish shall be provided to treads, including all material, labour, tools etc. all complete.	SQM	1285		
1408	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4457 of minimum thickness 20 mm thick in flooring/Dado of battery room. The tiles shall be abrasion resistant and durable. The potassium silicate as per IS 4832, 6mm 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	500		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1408a	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4457 of thickness 25 mm thick joined with acid /alkali resistant slurry . in flooring/Dado of battery room & similar areas. Bedding shall comprise of potassium silicate mortar conforming to IS: 4832 (PART I) and resin based mortar like epoxy for jointing including pointing etc. total thickness of flooring shall be 50 mm. as per specification.	SQM	1342		
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 layer followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks(75 mm thk) . 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	100		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	50		
1411	Providing min. two coats of epoxy coating , 150 micron over epoxy primer over / under side of all MS Grating/Chequered plate/any other steel structure, pre-cast slabs etc.with all materials complete as per specifications.	SQM	50		
1412	Providing and laying polished Kota stone 25 mm thk in flooring . Under bed shall average 30mm thk of 1 part cement, 2 part sand : 4 parts stonechip by volume and brought to proper level. 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	2550		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1413	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .	SQM	71		
1414	Providing and laying polished Black Granite stone of approved color and texture 25 mm thk in flooring. Under bed shall average 25 mm thk of 1 part cement,2 part sand : 4 parts stonechip by volume and brought to proper level. The granite 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	714		
1415	Providing and laying polished Black Granite stone 25 thk in skirting and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	66		
1416	Providing and laying 7 mm thk vitrified ceramic tiles of polished variety of size 300x300 from reputed manufacturer, complete as per specification.	SQM	100		
1417C	Providing and laying Heavy duty ceramic tiles of size 300x300x7.5 mm from SPARTEX / REGENCY MAKE of approved shade & colour, complete as per specification.	SQM	3178		
1417D	Providing and laying Heavy duty ceramic tiles of size 300x300x7.5 mm from SPARTEX / REGENCY MAKE of approved shade & colour, for skirting and dado up to specified height complete as per specification.	SQM	1254		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1420	Providing and laying granite stone slab of 12mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	SQM	66		
1423	Providing and laying 50 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).	SQM	100		
1427	Providing and laying cinder filling in the toilets complete as directed by engineer in charge.	CUM	255		
1428	Terrazo tiles Preferably white mosaic tiles of 300x300x20 thk in flooring. Under bed shall average 30 mm thk of 1 part cement, 2 part sand : 4 parts stonechip by volume and brought to proper level. The mosaic tiles laid over under bed to the proper level, including curing, grinding, polishing etc. complete .	SQM	7411		
1429	Providing and laying screed concrete 1:1.5:3 by volume laid in slope (with 6 to 10 mm nominal size stone chips) including all labour, material, scaffolding etc. complete for all lifts, all leads and of following average thickness:-				
a	40 mm	CUM	51		
b	30 mm	CUM	139		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES/FLASHING, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. COMPLETE FOR THE FOLLOWING:				
1502	Designing, providing and fixing permanently color coated galvanized M.S. trough metal sheet roofing of approved profile and color including all materials, fixures, self tapping screws etc. over roof purlins for In-situ roof slab as per IS 14246. Thickness of deck plate (base metal thickness) shall be minimum 1.25 mm (18 gauge) and minimum trough depth of 38 mm and minimum yield strength of 250 Mpa. Zinc coating shall be conforming to IS:277 Class II Grade - 600. The external face shall have permanent color coating of PVF2 paint of minimum DFT 20 microns over primer and inner surface shall be coated with silicon modified polyester paint of minimum DFT 20 microns.	SQM	5660		
1502 (b)	Providing and fixing 18G GI Sheets including all materials, fixures, J hooks, screws, washers etc. over roof purlins of DE-AERATOR and any other area wherever required at all heights	SQM	400		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1504	Design supply & erection of permanent colour coated non insulated metal cladding for external walls with troughed galvanized MS sheeting of 1.0mm thickness. Zinc coating shall be conforming to IS:277 Class II Grade - 600. The external face shall have permanent color coating of PVF2 paint of minimum DFT 20 microns over primer and inner surface shall be coated with silicon modified polyester paint of minimum DFT 20 microns. 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	5202		
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.				


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1601A	Providing, fixing and laying Aluminium false ceiling system shall comprise of 84 mm wide 12.5 mm deep closed type plain panels of approved colour, roll formed out of 0.5 mm thk. corrosion resistant aluminium alloy AA 5050 fixed on roll formed carriers Additional hangers & height adjustment clips shall be provided for return air grills, supply air diffuser, light fixtures, AC duct etc. metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification A.C. ducts etc. suitable M.S. channel (minimum MC 100 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.	SQM	4107		
1601B	Under deck insulation shall comprise of 50mm thick resin bonded mineral wool insulation mat conforming to IS:8183. This mat shall be backed with 0.05 thick aluminium foil and 24G x24 mm wire mesh netting. They shall be fixed to ceiling or wall as the case may be with 100x50x6 slotted mild steel plate welded to MS plate embeddment and 14 G steel wire drawn through slots and fixed to wire netting.	SQM	4688		
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT SYNTHETIC ENAMEL PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.				


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1701	 MS (ERW) down take pipes conforming to class Medium of IS:1239 of following dia.				
i)	100 mm dia	RM	344		
ii)	150 mm dia	RM	50		
iii)	200 mm dia	RM	50		
	MS (ERW) Galvanised down take pipes conforming to class Medium of IS:1239 of following dia. of following dia.[for TG, Bunker bldgs.]				
i)	100 mm dia	RM	77		
ii)	150 mm dia	RM	1836		
iii)	200 mm dia	RM	408		
1800	MISCELLANEOUS				
1801	Aluminium angle nosing 150x25x3 shall be provided for edge protection of RCC stair treads, including material, labour, tools etc. complete with all.	RM	1020		
1801A	Providing and fixing PVC water stops 225mm wide, 6 mm thick.	RM	765		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
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	51		
1803	Providing and laying 100 mm thk. anticorrosive insulating bituminastic layer laid to slope using special grade Bitumen and filter materials like compacted crushed stone chips, screenings, fine gravel, clean sand or similar material and rolled or compacted complete as per drawings below fuel oil tanks and at such other places as directed by the Engineer and as per specifications.	SQM	143		
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	408		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1806	 <p>Taking delivery of materials from BHEL store/ storeyard, loading, unloading, transportation, fabrication, erection, alignment, welding, primer (two coats), three finish coats (synthetic enamel paint) , of structural steel made from Mild Steel (Rolled Sections and Plates) shall conform to Grade 'A' of IS:2062 for thickness upto and including 20mm and shall conform to Grade 'B' of IS:2062 for thickness beyond 20mm thickness. Medium and High Strength steel shall conform to grade 'Fe-490B' of IS: 8500 or equivalent. Rolled Sections and Plates up to and including 20mm thickness shall be semi-killed condition. Plates beyond 20mm thickness shall be killed condition. All steel upto and including 40mm thickness shall be in as Rolled condition. Plates beyond 40mm thickness shall be Normalised and Ultrasonically tested. Pipes shall conform to IS:1161 Hollow(square and rectangular) Steel Sections shall be Hot Formed conforming to IS:4923 and shall be of Minimum grade Yst 240. Chequered Plate shall conform to IS:3502 and shall be minimum 6mm thick excluding projection, Cont....</p>	MT	7452		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
	Steel for chequered Plates shall conform to Grade 'A' of IS:2062, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, toe plates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts & nuts (weight erection bolts & nuts not payable, Supply of permanent bolt of grade C ,				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
	mild steel bolts & nuts to be paid separately under ST NO 1806 b (i & ii), assembly, edge preparation, preheating (& use of low hydrogen/ radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, *surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non-destructive), preparation of fabrication drawings with approved agency, joint design calculations, obtaining approval of drawings and all other general and special requirements , all other activities required ,Contd...				
	for completion of the work including return of surplus/ waste steel materials to store etc.as per specification, drawings and instructions of the Engineer. * Surface preparation means: the steel surface to be painted shall be cleaned of dust and grease and heavier layers of rust shall be removed by chipping prior to actual surface preparation. The surface shall be cleaned to grade SA-2 as per SIS05-5900 or as per IS:1477 (PART-I). Primer paint shall be Red Oxide Zink Chromate confirming to IS:2074. Dry film thickness of each coat shall be 25 micron.				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
	(BHEL will supply Structural steel only as per required technical specification free of cost). Any other materials, consumables, paints, labours, scaffolding etc. shall be in contractor's scope.				
1806a	Extra over item no. 1806 Galvanisation to structural steel.	MT	50		
1806b	i) Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the Engineer.	Quintal	4		
	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	4		
1807	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails. Anchoring lugs etc. complete as per specification.	MT	53		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1808	Laying of earthing mats/rods with risers including transportation from yard stores, loading, unloading, cutting to length, welding, bitumenous painting of welded & heated portion (heated for bending) drilling for vertical electrodes etc. complete as per specification and as directed by Engineer-in-charge.(BHEL will supply MS rods free of cost). Earthwork for trenching & backfilling shall be paid under relevant item	MT	74		
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.	67		
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	765		
1815	Anti termite treatment to column pits, wall trenches, foundations, filling below floors etc.	SQM	12253		
1816	Anti weed chemicals below trf soakpits.	SQM	4641		
1817	Two coats of bitumin painting of grade 85/25 conforming to IS 702 @ 1.7 kg / SqM of water/damp proofing.	SQM	3412		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
1819	Water proof cement paint as per IS: 5410.	SQM	17331		
1820	Exterior Emulsion weather paint, for T.G. hall "A" row, Apex or Equivaleant as per manufacture's catlougues.	SQM	9763		
2000	FENCING AND GATES.				
2001	Min.3.0 m high fencing above toe wall. Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm and galvanised concertina. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire on inclined fencing confirming to IS 298 at top of chain link fencing shall be provided of height of 600 mm. 3 lines of 12 gauge high tensile spring steel wire shall be provided for the entire length of fencing.also 50x6 galvanised MS flats at every fifth post sandwitching the fencing with post using GI nuts & bolts. RCC toe wall. Fencing post galvanised MS angle section Struts at bends & at every fifth post of galvanised MS angle section including all accesories as per specification all complete.[Including concrete fdns., brickwork etc.]	R/M	256		
2100	WATER SUPPLY				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks of Jaquar, Marc or equivalent including sockets, union, nut etc. complete 15mm nominal bore.	NO.	26		
2102	Providing and fixing in position heavy duty brass stop cock of Jaquar, Marc or equivalent including all specials etc. complete as directed by Engineer 15mm nominal bore.	NO.	51		
2103	Providing and fixing in position heavy duty brass full way valve with wheel of leader or equivalent make 25mm nominal bore.	NO.	26		
2104	Providing and fixing in position heavy duty brass full way valve of Leader or equivalent make with wheel of approved quality 50mm nominal bore.	NO.	11		
2105	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples (GI fittings shall be of heavy duty "R" brand) etc. and clamps including cutting and making good the walls, with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc. complete (internal work) 15 mm nominal bore.	RM	816		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2106	Providing and fixing "C" Class GI pipes complete with GI fittings (GI fittings shall be of heavy duty "R" brand) a clamps including cutting and making good the walls with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc. complete (internal work) 20 mm nominal bore.	RM	510		
2107	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples (GI fittings shall be of heavy duty "R" brand) etc. and clamps including cutting and making good the walls with Two coats of synthetic enamel over one coat of primer, Connections shall be smoke tested etc.complete (internal work) 25 mm nominal bore (N.B).	RM	510		
2108	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples, (GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground including trenching & refilling, Connections shall be smoke tested etc. complete (external work) 15mm nominal bore (N.B).	RM	816		
2109	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples, (GI fittings shall be of heavy duty "R" brand)with hessein wrapped & bituminous coated for below ground etc. including trenching & refilling, Connections shall be smoke tested etc.complete (external work) 20mm nominal bore (N.B).	RM	510		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2110	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples,(GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground, including trenching & refilling Connections shall be smoke tested etc.complete (external work) 25mm nominal bore (N.B).	RM	1224		
2111	Providing and fixing "C" Class GI pipes complete with GI sockets, unions, elbows, tees, nipples,(GI fittings shall be of heavy duty "R" brand) with hessein wrapped & bituminous coated for below ground including trenching & refilling, Connections shall be smoke tested etc.complete (external work) 50mm nominal bore (N.B).	RM	510		
2112	Providing and fixing wall to wall Bath room 5.5 mm thk float glass mirror from reputed mirror manufacturer with bevelled edges including all fittings. Mirror shall be mounted with glass adjustable revolving CP brackets etc. complete with CP screws as per specification.	Sq. m.	61		
2114	Providing and fixing 600x20mm dia Stainless steel wall mounted towel rail etc. all complete as per specification.	NO.	26		
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc.complete as per specification.	NO.	51		
2116	Providing and fixing Stainless steel liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on Stainless steel brackets etc.complete as per specification.	NO.	51		


BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2117	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. complete as per specification	NO.	26		
2118	Providing and fixing chromium plated brass shower rose of Jaquar, Marc or equivalent with 15 or 20 mm inlet all complete.	No.	20		
2119	Providing & fixing P.V.C. water tank (Syntex or equivalent) in position of 2000 litres capacity. The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels	NO.	18		
2120	Providing and fixing in position in the base slab of water retaining structures non return valves of 90mm diameter non metallic PRV pipe and 160mm diameter OD perforated PVC housing pipe 430mm long including graded gravel filters as per IS:4558-1995 and as shown in the drawings all complete.	Nos.	31		
2121	Stainless steel kitchen sink 750 mm in size including 12 mm thick polished granite stone slab over RCC slab all complete.	Nos.	6		
2122	An eye & face fountain combined unit with receptacle along with wash basin conforming to IS:10592 shall be provided in battery room, DM Plant & Chlorination plant.	Nos.	6		
2200	SANITARY WORKS				

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2201	Supply and fixing vitreous china wash basin , Hindustan or Vitreous makes or equivalent makes, size 600x450 (oval shape) with all fittings as per IS:2556 (Part 6 sect.1) to be fixed on concrete platform finished with 12 mm thk. polished granite stone, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc. complete as per specifications	NO.	26		
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink , Hindustan or Vitreous makes or equivalent makes, of size 600x450x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass bottle trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	NO.	6		
2203	Providing and fixing colour European type water closet , Hindustan or Vitreous makes or equivalent makes, with siphon, open front solid plastic seat and plastic cover, 390 mm high 12.5 litre glazed stone water flushing cistern with valveless fittings, C.I brackets with paint necessary C.P connections with toilet roll holder etc. complete as per specification.	NO.	15		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2204	Providing and fixing WC (indian type) Orissa pattern, Hindustan or Vitreous makes or equivalent makes, (580x440 mm) and high level 12.5 litre C.I flushing cistern with valveless fittings, necessary C.P connections, foot rests shall be made of white glazed vitreous china with chequered surface allcomplete with cistern painting, C.I brackets etc. as per specification.	NO.	15		
2205	Providing and fixing wall type glazed vitreous china urinals, Hindustan or Vitreous makes or equivalent makes , with C.I photo-voltaic flushing cistern with flush pipes, lead pipes, gratings, CP bottle traps and necessary C.P fittings all complete as per specifications.	NO.	51		
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 150mm dia, as per specifications.	RM	133		
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	127		
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	64		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2218	Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	10		
2219	Providing and fixing circular heavy duty man hole cover of 600mm dia with frame all complete as per specification.	NO.	10		
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.	10		
2221	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x100mm P or S Type.	NO.	5		


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item no	DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
2222	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x150mm P or S Type .	NO.	5		
2223	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	10		
2226	Providing and fixing white vitreous urinal partitions, Hindustan or Vitreous makes or equivalent makes , all complete as per specification.	NO.	26		
1821	Supply, fabrication, erection of wall cladding consisting of 1 mm thick perforated Aluminum sheet including 50 x 25 x 1 mm thick Aluminum Box with 1 mm thick rubber pad /plastic sheet, 60 mm thick mineral wool bonded slab (144 kg/cum density conforming to IS: 8183), loose mineral /glass wool packing behind ventilators.				
i)	1 mm thick perforated Aluminum sheet	SQM	570		
ii)	50 x 25 x 1 mm thick Aluminum Box	RM	820		
iii)	L 50X50X6	MT	1		

BILL OF QUANTITIES FOR MAIN POWER BLOCK CIVIL, STRUCTURAL & ARCHITECTURAL WORK

item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
iv)	1 mm thk 50 mm wide rubber plastic sheet	R/M	1000		
v)	60 mm thick mineral wool bonded slab	SQM	600		
2500	Dismantelling of existing structure / brick-work, pipe racks etc.				
1	Dismantelling of structural steel like columns, bracings, girts, side runners, etc. in gable end of TG Hall and disposing the structural members, debris to the place earmarked by customer.	MT	71		
2	Breaking & dismantelling of existing brickwork including plaster in gable end of TG Hall and disposing the debris to the place earmarked by customer.	CUM	179		
3	Breaking & dismantelling of existing brickwork including plaster for COMP HSP Control room and disposing the debris to the place earmarked by customer.	CUM	8		
4	Breaking & dismantelling of existing IPS flooring including base for COMPHSP Control room and disposing the debris to the place earmarked by customer.	SQM	26		
5	Breaking & dismantelling of existing Glazed tiles including base for COMPHSP Control room and disposing the debris to the place earmarked by customer.	SQM	71		
6	Breaking & dismantelling of existing IPS flooring including base for FOPH & disposing the debris to the place earmarked by customer.	CUM	15		

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item no	 DESCRIPTION	UNIT	Quantity.	RATE (In figures)	AMOUNT
7	Dismantling of existing 7.0 m. wide road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, including disposal of debris within a lead of 2 to 5 Km etc. (Including shoulder)	R/M	163		
8	Breaking of existing RCC drains of size approx. 1.5 m wide x 1.7m deep & disposing debris to a distance b/w 2 to 5 Km.	R/M	510		
	TOTAL IN RS				
	PERCENTAGE(%) REBATE OFFERD IF ANY				
	NET QUOTED PRICE (IE TOTAL - % REBATE				
	NET QUOTED PRICE IN WORDS (Rs)				