

TENDER SPECIFICATION

BHEL: PSSR: SCT: 1417

FOR

Construction of General civil works in Main Plant and other allied structures including architectural works for units 1&2 of 2 x 500 MW

at

NTPL Tuticorin Thermal Power Project, Tuticorin

VOLUME – II RATE SCHEDULE



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35

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Volume II RATE SCHEDULE

BOOK SLNO: _____

Issued to
M/s

Refer NIT for Last date of submission

Please note this tender document is not transferable

For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

ADDL GENERAL MANAGER / CONTRACTS

Place: Chennai -35

PREAMBLE TO THE SCHEDULE OF QTS. (SOQ)

- 1) Details of the items in this Schedule shall be read in conjunction with the corresponding NTPL specifications and other documents and shall have precedence over any contrary statement mentioned any where in this document.
- 2) The work shall be carried out as per construction drawings (which will issued progressively during the execution), specifications, the description of the items in this schedule and/or Engineer's instructions., The layout, sizes and details of the building, structures and foundations may vary at a large extent during actual construction.
- 3) Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
- 4) Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant , temporary works, labour, materials, levies , taxes , transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services , temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
- 5) The rate quoted shall be inclusive of cleaning the site of any vegetations, dressing and leveling etc., required for commencement of site activities. No separate payment will be made towards the same.
- 6) The rate shall also be inclusive of carrying out survey of site to establish levels and coordinates at suitable intervals, form existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references , pillars and other identification marks etc. No separate payment will be made towards the same.
- 7) Engineers decision shall be final and binding on the contractors regarding clarification of items in this schedule with respect to the other section of the contract.
- 8) Unless otherwise specified in the schedule of items Structural and Reinforcement steel will be issued by BHEL as FREE ISSUE for incorporation in the permanent works as specified elsewhere in this tender document.
- 9) Incase of any discrepancy between item description, relevant drawing and/or specification clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.
- 10) Refer the relevant clauses in the GCC for payment of additional items and Quantity variation.
- 11) Refer Clause 26.0 in NIT for order of precedence.



2X500 MW NTPL THERMAL POWER PROJECT , TUTICORIN

BHEL:PSSR:SCT:1417: VOL II

RATE SCHEDULE

Construction of General Civil works in Main plant and other allied structures including architectural works.

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
100	EARTH WORK Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.						
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, rramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, spreading/levelling of disposed materials etc all complete for following depths below ground level.						
a	Depth from ground level but not exceeding 2 m	CUM	60000				
b	Depth exceeding 2 m but not exceeding 4 m	CUM	15000				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	3000				
d	Depth exceeding 6 m but not exceeding 8 m	CUM	2000				
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1000				
f	Depth exceeding 10 m but not exceeding 15 m	CUM	500				
A102	Extra over ST No. 101 & 103 to 106 for dewatering of ground water by well point method as per IS 9759 to maintain dry working conditions for all activities up to filling/testing all complete as per specifications, drawings and instructions of the engineer. Payment will be made for excavation quantity below ground water table where lowering of ground water table is done by well point method etc over and above the measures taken ST No. 101,103,105 & 106.	CUM	60000				
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required)(but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, rramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, spreading / levelling of disposed materials etc all complete for following depths below ground level.						

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a	Depth from ground level but not exceeding 2 m	CUM	800				
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1000				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5000				
d	Depth exceeding 6 m but not exceeding 8 m	CUM	3000				
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1000				
f	Depth exceeding 10 m but not exceeding 15 m	CUM	500				
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required)(but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 500m, spreading / levelling of disposed materials etc all complete for following depths below ground level.						
a	Depth from ground level but not exceeding 2 m	CUM	1000				
b	Depth exceeding 2 m but not exceeding 4 m	CUM	2000				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	7000				
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10000				
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1000				
f	Depth exceeding 10 m but not exceeding 15 m	CUM	500				
106	Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required)(but excluding special type of dewatering viz. well point method), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 500m, spreading / levelling of disposed materials etc all complete for following depths below ground level.						
a	Depth from ground level but not exceeding 2 m	CUM	500				
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1000				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	3000				
d	Depth exceeding 6 m but not exceeding 8 m	CUM	2000				
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1000				

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A107	f Depth exceeding 10 m but not exceeding 15 m Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 150 mm thickness using/with selected materials from compulsorily excavated soil available within a lead upto 500m and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.	CUM	500				
	a Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	40000				
	b Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	20000				
A108	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 150 mm thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.						
	a Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	1000				
	b Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	12000				
A109	Extra over ST No. 101 & 103 to 106 & A112 for carriage of excavated earth/rock/selected materials/debris for every 1 km or part thereof beyond an initial lead of 500m including loading, transporting and shall be dumped and levelled in horizontal layers not exceeding 500mm thickness as specified and directed by the Engineer-in-charge.	CUM	30000				

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				In Figures	In words	In Figures	In words
A110	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 150 mm thickness using/with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.						
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	10000				
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	5000				
Ac	With selected ash brought from borrow areas identified by the Customer/BHEL including, fees etc for all leads and compacted to 90% densities	CUM	10000				
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete	CUM	2000				
A112	Bulldozing earth for grading of ground including removable of vegetation complete including disposal of debris with in a lead of 500m.	CUM	1000				
A113	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.	10				
ii)	601 mm upto 900 mm girth	Nos.	15				

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200 CONCRETE WORKS							
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) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.							
201	Concrete of grade M-7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc.	CUM	1000				
202	Concrete of grade M-10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	5830				
203	Concrete of grade M-15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	400				
A204	Concrete under floors, paving, plinth protection, pipe encasing etc complete with 10/12.5/20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.						
a	M-15 Grade	CUM	400				
b	M-20 Grade	CUM	400				
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, roads, drains, under floors etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.						
a	M-25 Grade	CUM	7750				
Ab	M-35 Grade	CUM	6000				
206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at any level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.						
a	M-25 Grade	CUM	2500				

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209	M-35 Grade Extra over St. No. 205 to 206 for controlling of temperature of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	28000				
210	Extra over ST Nos. 205 to 206 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	3000				
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)						
a	M-20 grade	CUM	10				
b	M-25 grade	CUM	10				
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/10mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.						
b	1:1:5:3 (1 part cement, 1.5 part sand, 3 parts of aggregate by volume)	CUM	900				
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajjas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade 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) and as per specification and drawing for following grades.						
a	M-25 grade	CUM	250				
Ab	M-35 grade	CUM	200				
215	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.						

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				In Figures	In words	In Figures	In words
a	Plain cement concrete of all grades	CUM	25				
b	Reinforced cement concrete of all grades	CUM	15				
216	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, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement.	CUDM	350				
217	Extra over and above St No 216 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. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	80				
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	100				
219	Providing and applying curing compound of approved make where ever required as per manufacturer's specification.	SQM	2000				
220	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.	CUM	100				
300 FORM WORKS							
Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffolding and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.							
A301	Ordinary form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	15000				
301	Fairface form work with good quality water proof ply wood of required thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	45000				
A302	Fairface form work with good quality water proof ply wood of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies & domes, arches, circular overhead tanks (their flat finish) etc. for all heights.	SQM	40000				
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) 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.						
a	Upto 150 mm depth	Each	60				
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	60				

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c	Pockets of depths more than 300mm and upto 600 mm depth	Each	120				
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	60				
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	20				
A305	Ornamental / Curved shuttering using Fairface formwork above finished ground floor level for architectural works domes, arches, circular overhead tanks etc. for all heights where ever specifically mentioned in the drawing.	SQM	300				
400 REINFORCEMENT							
BHEL will supply Reinforcement Steel as a free issue. However transporting from BHEL stores is in agency's scope. The Steel will be issued to the agency in standard lengths. In some instances for 8mm, 10mm & 12mm dia steel will be supplied in coil form. No extra claims against issue of non-standard lengths and de-coiling of 8mm,10mm & 12mm.							
A402	Straightening, cutting, bending, placing at any level, binding in position High yield strength steel reinforcements in concrete including cost of binding wire, labour;transportation of reinforcement steel from BHEL MT stores with in the plant boundary to work spot,loading,unloading etc. complete all as per specifications & drawings.	MT	4600				
500 WATER PROOFING WORKS							
Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.							
501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	5000				
502	Providing and laying in-situ light weight foam concrete insulation as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:5 (1 cement: 5 coarse sand) after the curing period of laid foam concrete and providing of expansion joint at intervals as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.125 Kcal/sqm-hr deg C. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.						
b	Average 75 mm thickness	SQM	8000				
A503	Providing, laying and fixing roof water proofing treatment using fibre glass cloth laid over approved acrylic polymer modified cementitious water proofing compound rendered over roof slab and protected by a layer of screed concrete laid in slope(min 1 in 100) over layer of acrylic polymer modified cementitious water proofing compound (cement plaster and screed paid separately) etc , all complete including all labour, material, equipment, handling, scaffolding, transporting, testing etc. complete as per drawing, specification and instructions of the engineer in charge.	SQM	11000				

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A508	Providing and laying pressed precast concrete tiles of size 600 x 600 mm & minimum thickness of 20mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway and entire equipment area with fine joints including sealing of joints (silicon/elastomeric/poly sulfide sealant) etc all complete. (Water proofing paid elsewhere)	SQM	10000				
509	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	2000				
511	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	500				
512	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.	SQM	550				
600 JOINTS AND FILLERS							
Joints & fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.							
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.						
a	12 mm wide joints.	SQM	50				
b	20 mm wide joints.	SQM	100				
c	25 mm wide joints	SQM	200				
d	50 mm wide joints	SQM	1250				
602	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:						
a	12mm X 25mm	RM	100				
b	20mmX25mm	RM	150				
c	25mmX25mm	RM	350				
d	50mmX25mm	RM	2400				
603	Supplying and filling in position hot applied bitumen sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.						
b	12mm X 25mm	RM	50				

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				In Figures	In words	In Figures	In words
c	20mmX25mm	RM	100				
Ac	25mmX25mm	RM	150				
Ad	50mmX25mm	RM	1500				
606	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:						
d	230 mm wide and 6 mm thick	RM	30				
700 MS EMBEDMENTS							
Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.							
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	150				
702	Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT	40				
703	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	75				
704	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	50				
705	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.						
a	MS pipes of all diameters	Quintal	50				
b	PVC pipes / conduits of all diameters	Quintal	20				
c	UPVC pipes / conduits of all diameters	Quintal	5				
Ad	Expansion fasteners (mechanical galvanised) of HILLTI make or equivalent of safe tensile capacity as specified below for brick work/concrete with expansion sleeve of A6 polyamide:						
i	Upto 250 Kg	Each	1600				
ii	Beyond 250 Kg and upto 500 kg	Each	1300				
iii	Beyond 500 Kg and upto 750 kg	Each	900				

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706	Placing, locking and releasing of Vibration Isolation spring modules over the foundation at all elevations including providing all assistance under the supervision of the supplier, transportation from BHEL store, necessary staging, platforms, leveling, alignment etc. all complete.	Each	150				
800 GROUTING							
	GROUTING INCLUDING all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.						
A801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per (IS6494)approved procedure including cost of nipples/ nozzles, cement, admixture with water soluble monomer based chemical, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at minimum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	20				
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	6				
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	2				
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	21				
900 DOORS, WINDOWS, VENTILATORS, LOUVERS							
	Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.						

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901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothing, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	20				
A901	Providing and fixing hard wooden frame conforming to IS 4021 made of approved quality seasoned wood free from large or loose knots, cracks or other defects including sand paper smoothing, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	6				
902	Providing and fixing teakwood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working, drawings, godrej or equivalent make mortice lock with handels on both sides (mortice lock shall be paid separately), approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handels on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	45				
903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides (mortice lock shall be paid separately), approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handels on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	125				
904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter 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 centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides (mortice lock shall be paid separately), shop and final painting etc all complete.	SQM	200				

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				In Figures	In words	In Figures	In words
907	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	150				
908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)						
a	openable type	SQM	200				
b	fixed type	SQM	300				
909	Providing and fixing anodised aluminium work of jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285; anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc.including preparation of working						
A909	drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like lower 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). Weight of aluminium section only shall be measure.	Each	25000				
AA909	Extra over ST. No.909 for Providing & fixing automatic Sliding Sensor mechanism of Godrej or equivalent make for doors of Main Control rooms etc including required fasteners/fixtures, bearings all complete as per specifications, manufacturer's recommendation and instruction of engineer-in-charge.	Each	3				
911	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	130				
	Providing and fixing of door closers as per IS 3564 of approved make & quality all complete of following type :						

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
a	Over head hydraulic door closures	Each	130				
b	Floor mounted Hydraulic door closers	Each	15				
A912	Providing and fixing pressed steel frames fabricated from 1.4mm thick gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles / weather bars , paintings 2 coats of synthetic enamel paint on primer etc all complete as per specifications.	Kg	2500				
913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres 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, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles, (partly coiled and lath/full lath).						
a	Hand Operated	SQM	30				
b	Mechanically Operated	SQM	95				
c	Electrically operated	SQM	160				
914	Providing and fixing PVC doors(25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	30				
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.						
b	4 mm thick clear float glass	SQM	420				
c	5.5 mm thick clear float glass	SQM	2000				
d	6 mm thick wired glass	SQM	850				
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	50				
f	4 mm thick ground glass	SQM	95				
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	75				
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	90				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
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k	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	400				
l	6 mm thick laminated glass	SQM	430				
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification RM complete.	RM	40				
917	Providing and fixing 12 mm thick BWP particle board , decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	90				

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				In Figures	In words	In Figures	In words
A917	Providing and fixing factory made prelaminated particle board (MDF ext gr) doors incl all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	160				
A919	Providing and fixing 1 mm thk. MS sheet automatic sliding shutters with sensor mechanism of godrej or equivalent make with frame and diagonal braces of 50X50X6 angle iron. 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	30				
920	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	100				
1000 BRICKWORK							
Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.							
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.						
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2	CUM	750				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
b	Using clay ash bricks as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%	CUM	15				
Ad	Using locally available first class burnt clay bricks of class designation 5.0 of nominal dimension approved by engineer-in-charge/customer.	CUM	15				
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.						
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2	CUM	4500				
b	Using clay ash bricks as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%	CUM	100				
Ad	Using locally available first class burnt clay bricks of class designation 5.0 of nominal dimension approved by engineer-in-charge/customer.	CUM	100				
1003	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 two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.						
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2	SQM	3700				
b	Using clay ash bricks as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%	SQM	20				
Ad	Using locally available first class burnt clay bricks of class designation 5.0 of nominal dimension approved by engineer-in-charge/customer.	SQM	20				
1006	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	20				
1007	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. (Chicken wire mesh to paid separately)	CUM	70				
1009	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	70				

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				In Figures	In words	In Figures	In words
1010	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 SQM in concrete including cutting, bending, fixing etc. complete.	SQM	1200				
A1012	Providing and filling brick bats in soak pits, below plinth protection etc all complete.	CUM	30				
1100 DAMP PROOF COURSE							
Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.							
1101	Providing Damp Proof Course 40mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.	SQM	165				
1200 CEMENT MORTAR PLASTER							
Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.							
A1201	Providing 20mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:4 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	4000				
A1202	Providing 15mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	17500				
A1203	Providing 18mm thick plaster in cement mortar 1:6 on walls finished to a wooden wooden float /smooth/rough finish all complete.	SQM	19600				
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	8400				
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	8300				
1205	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	1200				
1206	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	690				
1207	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 battens, 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	100				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
1208	Providing drip course on plastered surface at all elevations for all type of work such as chajias, 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	500				
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 chicken wire mesh 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 engineer in charge (chicken wire mesh to be paid separately)	SQM	1600				
1210	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	75				
1300 FINISHES TO CONCRETE / PLASTERED SURFACES							
Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.							
1301	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	7000				
1303	Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	2000				
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	15000				
1305	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	7000				
A1305	Providing and applying two or more coats of 1st quality plastic emulsion paint of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer & wall putty of min thickness 3 mm as per manufacturers guideline/instructions of engineer in charge including cost of material, labour etc all complete.	SQM	7000				
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming 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	1500				

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				In Figures	In words	In Figures	In words
A1307	Two or more coats of Oil resistant paint epoxy based and ammine cured, 150micron over primer of approved grade and manufacture to give an even shade as per specifications.	SQM	370				
1309	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	150				
A1309	Providing and applying 2 or more coats of weather paint of Asian make or approved equilent make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	1500				
1310	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	1200				
A1312	Providing and applying 3 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	12250				
A1314	Providing and applying resin bonded Granular textured Synthetic plaster for external applications composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface.The final finish Paint shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with polysulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	3000				
1400 FLOORING AND SKIRTING							
Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.							
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, including aluminium strips/nosing etc. for flooring, steps etc all complete.	SQM	1000				
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado complete as per specification.	SQM	75				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
A1403	Providing and laying Carborandum tiles (300x300x20 mm) in flooring, manufactured as per IS 1237 including cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry etc. all complete using color pigments & hard chips like carborandum quartz etc and laid in pattern over concrete underbed to result in overall thickness of 50 mm . The 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 with laying as per IS 1443 etc. all complete for following:						
a	Laid in floors	SQM	2000				
b	Laid in skirting	SQM	1600				
A1404	Providing and laying anti skid precast interlocking concrete pavers of minimum M30 grade of approved shape as per the approval of engineer in charge and specifications complete including minimum 40 mm thick sand underbed. Rate to include underbed						
a	60mm	SQM	750				
1408	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	200				
A1412	Providing and laying 18mm thick 2.5X1.0Mtr polished Granite stone of approved color and texture in flooring with 25X6mm brass strips. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregate 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. all complete.	SQM	1000				
A1414	Providing and fixing 15mm thk polished granite cladding on walls at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	3000				
AA1414	Providing and laying polished Granite slab 20 thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	100				
AAA1414	Providing and laying polished Granite slab 12 thk skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	40				
A1416	Providing and laying heavy duty vitrified ceramic tiles of approved size from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 with neat cement slurry of min.15mm thick etc. all complete for following						
a	600x600mm size, 10mm thk tiles in flooring	SQM	4300				
b	900x900mm size, 10mm thick tiles In flooring	SQM	2000				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
c	600x600mm size,10mm thick tiles In skirting and dado upto specific height	SQM	400				
d	900x900mm size,10mm thick tiles In skirting and dado upto specific height	SQM	250				
A1419	Providing and laying granite stone slab of 12mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting,making corners,moulding and opening etc. all complete.	SQM	70				
1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including underbed of cement mortar 1:3 with neat cement slurry etc. all complete.						
a	300X300 mm	SQM	425				
1421	Providing and laying Heavy Duty dust pressed (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm(approved size) and 7mm thick of reputed / approved manufacturer (Kajaria,Johnson,Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm.with Under bed shall average 43mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level including cement mortar all complete.	SQM	9000				
1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.						
Aa	25mm thick	SQM	320				
1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm thick) conforming to IS:4860 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming 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 sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	200				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
1427	Providing and fixing anti skid glazed ceramic tiles of approved color and design of size 200x300mm / 300x300mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts sand by weight, fairly moist but firm, tiles shall be pressed over underbed by applying cement slurry including pigments, curing etc all complete for following thicknesses:						
a	5mm thick	SQM	380				
b	7mm thick	SQM	440				
A1428	Providing and laying minimum 2mm thick antistatic PVC flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete.	SQM	500				
A1429	Providing and fixing removable type false flooring with jacks; consisting of floor panels of size 600x600x35 mm, made of un-veneered teak wood particle board bonded with BWF type phenol formaldehyde synthetic resin conforming to IS : 3087 similar to 'Anchor Novateak Super' or cement bonded particle board conforming to IS : 14276 or any approved equivalent including 2 mm thick anti static PVC top and lipping, conforming to IS : 3462 and having antistatic property similar to "Anstat" of Premier Vinyl Flooring Limited ,Agrowood strips of Andaman Timbers Limited or any other approved equivalent and provided with 22 gauge galvanised iron sheet at the underside of floor panels & supporting arrangement, jacks, stringers etc all complete as per specification, drawings and engineer in charge.	SQM	1000				
A1430	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.						
a	Glass strips 50 mm wide and minimum 6 mm thick.	RM	2800				
b	Aluminium strips 50 mm wide and minimum 3 mm thick	RM	2800				
c	Brass strips 20 mm wide and minimum 4 mm thick.	RM	1000				
d	aluminium nosing angles 20 mm wide and minimum 3 mm thick	RM	200				
A1432	Providing and laying Marble slabs 20mm thk of size 1500X600 mm in urinal partitions etc with fine joint finish including pigments, curing, grinding, granite polishing etc. complete.	SQM	20				
A1433	Providing and laying 30 mm thick cast in situ terrazzo floor, with 8 mm topping using white cement in staircase landing/skirting and corridors . Floor to be finished to the proper level, including pigments/white cement, curing, grinding, making corners, polishing etc. all complete.	SQM	20				

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				In Figures	In words	In Figures	In words
AA1433	Providing and laying 40 mm thick cast in situ terrazo floor, with 10 mm topping using white cement in staircase landing/skirting and corridors . Floor to be finished to the proper level, including pigments, curing, grinding, making corners, polishing etc. all complete.	SQM	100				
A1434	Providing and laying 40 mm thick granolithic cement concrete flooring with concrete hardener additive of approved make , SQM complete as per specification and direction of engineer in charge.	SQM	4750				
A1435	Providing & Laying epoxy floor finish (Forsoc NITO Floor or equivalent) in Tg Deck top portion etc including cost of material, labour, etc all complete as per specification, drawings & engineer in charge.	SQM	500				
A1436	Providing and laying non-woven type carpet (unitex or equivalent) which shall be laid as manufacturers recommendations in matching grains including anti fungus and anti termite treatment complete.	SQM	50				
1500 ROOFING / SIDE CLADDING							
Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.							
A1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 50 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 150mm thick and shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over alkaboid epoxy primer or polyester applied over hot dipped galvanising @ 180 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.						

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
	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/shear connectors paid elsewhere). (height of trough required as per design should be included in the cost) Measurement shall be of the plan area of roof covered by MS trough metal decking. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.						
a)	Span Upto 1800mm	SQM	8500				
b)	Span Exceeding 1800mm and upto 2500 mm	SQM	1500				
AA1501	Designing, providing and fixing permanently color coated galvanised MS troughed profiled metal sheet decking plate (with embossments, re-entrant angles or any other proven system to develop mechanical interlock with concrete) of approved colour and conforming to class3 of IS 14246 over floor beams for cast-in-situ concrete slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 75 mm having minimum yield strength of 250 MPa and shall serve as bottom tensile reinforcement to the composite floor slab (after hardening of concrete). The total thickness of slab including trough depth shall be 150mm and the thickness of slab over crest shall not be less than 50 mm. The deck shall have adequate strength to support weight of green concrete and imposed loads of min. 150 kg/sqm during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The performance test certificate of deck sheet interlocked with RC slab shall be furnished. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over alkaloid epoxy primer or polyester applied over hot dipped galvanising @ 180 gm/sqm including fixing of sheet to beam with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profiled sheeting shall be of the plan area of roof covered by MS trough metal decking.						
a)	Span Upto 1800mm	SQM	19400				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
b)	Span Exceeding 1800mm and upto 2500 mm	SQM	5000				
A1502	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length at spacing 520mm C/c above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	500				
A1503	Design, supply & erection of permanent colour coated sandwiched insulated metal cladding of approved color comprising of trough zinc aluminium alloy coated (both sides) M.S. sheet of 0.63 mm min thickness to be used on external face of the cladding system. The weight of Zinc Aluminium alloy coating not to be less than 150 gm/sq.m. The exposed face of the sheet to be permanently color coated with polyfluoro vinyl coating (PVF2) of minimum 20 microns (nominal) dry film thickness over primer. Inner side of external sheet to be provided with suitable pre-coating of minimum 7 microns. Galvanised M.S. sheets of minimum 0.6 mm thickness to be used as inner liner (internal face) of cladding system. The exposed face to be permanently colour coated with silicon modified polyester paint of DFT 20 microns (minimum) over primer. Inner face of external sheet to be provided with suitable pre-coating of minimum 7 microns. The rate of galvanising not to be less than 150 gm / sq.m	SQM	10350				
	The sheets shall be of approved profile and shall be able to span 1.5 m for a wind load of 160 kg/sqm for two span conditions with deflection restricted to L/250 and no increase in allowable stresses under wind load condition including siphoning feature to prevent leakage including fixing of inner sheet to the structure by self drilling fasteners and concealed clips (including sub-girts of size 50X50X50 mm manufactured out of 2mm G.I. Z' shape of 375grade at a spacing 750mm c/c) to connect the external sheet (without penetrating the external sheet) including flashings complete as per specification. (payment shall be made on surface area of the cladding including flashings). The insulation will be of bonded mineral wool of minimum thickness 50 mm conforming to IS:8183, having a density of 32 kg / cu.m for glass wool & 48 kg / cu.m for rock wool. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.						

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
A1504	Design, supply & erection of permanent colour coated non insulated single sheet metal cladding of approved color for external walls of electrical room & control room etc incl. cladding to be trough zinc-aluminium alloy coated with coating not less than 150 gm/sq.m. M.S. sheets having 0.63 mm minimum thickness to be used for the cladding system wherever required. The outer side (exposed face) to be permanently colour coated with PVF2 paint of minimum DFT 20 microns over primer and the inner side (internal face) to be coated with same paint of minimum DFT 12 microns over primer. cladding to be fixed directly to runners. The sheets shall meet the general requirement of IS:14246 and shall conform to class 3 for the durability. Item included the cost of cladding, required accessories, flashings, labour etc all complete as per specifications, drawing & engineer in charge.(payment shall be made on surface area of the cladding including flashings) Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	750				
A1505	Designing, providing and fixing troughed aluminium sheet decking of approved manufacturer as per specifications over roof purlins/floor beams for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck sheet shall be minimum 1.2 mm with minimum trough depth of 38 mm and shall serve as permanent shuttering to the roof slab 150mm thick measured over trough of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of sheeting to purlins, side lapping, end lapping etc. all complete including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and sitch screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking for below mentioned spans. In addition shear connector of 16mm dia and min 75mm long mild steel studs shall be fixed on top cord of purlin passing through the metal decking.(shear connectors paid elsewhere). (height of trough required as per design should be included in the cost). Measurement shall be of the plan area of roof covered by MS trough metal decking. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	500				
	Span Upto 1600mm	SQM	100				
	Span from 1600 to 2000 mm	SQM					

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
AA1505	Design, supply & erection of troughed aluminium metal cladding 0.63 mm min thickness to be used on external face of the cladding system. The sheets shall be of approved profile and shall be able to span 1.5 m for a wind load of 160 kg/sqm for two span conditions with deflection restricted to L/250 and no increase in allowable stresses under wind load condition including siphoning feature to prevent leakage including fixing of inner sheet to the structure by self drilling fasteners and concealed clips (including sub-girts of size 50X50X50 mm manufactured out of 2mm GI 'Z' shape of 375grade at a spacing 750mm c/c) to connect the external sheet (without penetrating the external sheet) including flashings complete as per specification. (payment shall be made on surface area of the cladding including flashings). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	7000				
1508	Providing and installing under deck insulation using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	2300				
1509	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	100				
1600 FALSE CEILING							

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
A1604	<p>False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.</p> <p>Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.</p>	SQM	400				
A1606	<p>Providing, fixing and laying false ceiling consisting of standard anodised aluminium main and cross T-runners of size 38 mm x 38 mm x 1.5mm thick spaced 610mm center to centre, both ways with 12 mm thick (approx.) E-board classic or Gyboard suspended ceiling system with 12.5mm thick moisture resistant tiles with G.I. frame work of the same manufacturer, or laminated cement bonded particle board or similar material (termite proof, moisture resistant and fire resistant) of approved shade along with necessary suspension arrangement for the false ceiling system.The work to be complete as per specifications, drawings and direction of engineer.</p>	SQM	3500				
A1607	<p>Supply and erection of special purpose partition manufactured with aluminium composite panel consisting of two aluminium cover sheets and polyethylene core of minimum 4 mm thick having exterior surface coated with super polyester paint including fixing on rigid aluminium framework (framework to be paid separately under different item) supporting wall hung C.C.T.V. including flashings, backer rods, caulk etc as per specification and direction of engineer in charge.</p>	SQM	75				
	1700 RAIN WATER DOWN TAKE PIPES						
	Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.						
1707	<p>Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.</p> <p>a 100 mm Dia</p>	RM	270				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
b	150 mm Dia	RM	1600				
c	200 mm Dia	RM	650				
1800 MISCELLANEOUS WORKS							
Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.							
1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	3500				
1802	Providing and mixing approved Bipolar Concrete penetrating Corrosion inhibiting admixture in concrete as per detail Kg specification of manufacturer etc. all complete.	Kg	60000				
1804	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	30				
1805	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	1700				
1806	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	1200				
A1807	Providing and fixing stainless steel strips minimum 3mm thk and 300mm wide including fixing accessories etc. all complete.	Kg	1600				
1808	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length Kg including brass / aluminium screws, rawl plugs etc. all complete.	Kg	300				
A1810	Transporting from BHEL store, laying and fixing transformer yard rails including guide rails in concrete including joining of rails, Anchoring lugs etc. complete as per specification.(Only Rails will be supplied by BHEL at free of cost)	MT	7				
A1811	Providing and fixing weep holes in Drains consisting of 100 mm dia LDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening covered with 40 mm downgraded aggregates in 300 X 300 mm sq. and 300 mm deep size all complete.	EACH	1250				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
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1812	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	2				
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	3				
1814	Construction of below ground earthing system test pits as per drawing/sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	EACH	10				
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	900				
1816	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.	EACH	10				
A1817	Providing and fixing LDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.						
b	100 mm dia	RM	300				
c	150 mm dia	RM	225				
d	200 mm dia	RM	225				
1818	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	500				
1819	Design, supply, fabrication, erection of stoplog gates in CW Pumps with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fasteners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. 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) (SS component shall be measured separately for payment)	MT	2				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
1820	SS component mentioned under ST No. 1819.	MT	1				
1821	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, MT 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 etc all complete.	MT	1				
1825	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	50				
A1827	Providing and adding Synthetic fibers shall be used in concrete for under floors, walls, beams, foundations, mortars for plastering etc as per specification confirming to ASTM C1116 & manufacturers recommendations.	MT	35				
2000 FENCING AND GATES							
Fencing and gates including all labour, material, equipment etc at any level as per specification, drawings and as directed by engineer - in - charge.							
2001	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 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing of height of 600 mm confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with bars of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under item 2007)	RM	240				
2005	Supplying and fixing 600mm high G.I. barbed wire fencing on top of boundary wall consisting of min. 6 nos. strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply with bars of 16G RM spaced at 100mm including GI clips, anchors, accessories etc. all complete. (Structural post shall be separately under ST No. 2007)	RM	150				
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	5				
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	3				
2100 WATER SUPPLY							

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
	Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.						
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, unions, nuts etc all complete - 15mm nominal bore.	EACH	80				
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	20				
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:						
a	25mm nominal bore.	EACH	17				
b	50mm nominal bore.	EACH	10				
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:						
a	15 mm nominal bore.	RM	220				
b	20 mm nominal bore.	RM	150				
c	25 mm nominal bore.	RM	150				
2105	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:						
a	15 mm nominal bore.	RM	105				
b	20 mm nominal bore.	RM	105				
c	25 mm nominal bore.	RM	105				
d	50 mm nominal bore.	RM	105				
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	80				
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	EACH	80				
A2108	Providing and fixing 20mm dia stainless steel pipes(600 mm long) wall mounted towel rod with stainless steel Brackets etc all complete.	EACH	25				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
2110	Providing and fixing stainless steel soap holder mounted with C.P. screws etc.complete as per specification.	EACH	80				
2111	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.	EACH	80				
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	40				
2113	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	EACH	15				
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.						
	b 2000 litres capacity	EACH	5				
	c 5000 litres capacity	EACH	2				
2115	Providing and fixing approved stainless steel sink with integrated drainboard as per IS:13983 of size 915x460x178mm with C.I.brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	3				
A2116	Providing and fixing electric operated hand dryer with photovoltaic control of reputed manufacturer approved by BHEL complete as per specification and instructions of engineer in charge.	EACH	12				
2200 SANITARY WORKS							
Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.							
A2201	Supply and fixing glazed vitreous china Wash Basin size 600X450mm conforming to IS:2556 part 4 of oval shape 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, fittings, cutting and making good the walls where required etc all complete.	EACH	60				
A2202	Providing and fixing approved vitreous china laboratory sink of size 600x450x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	4				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.						
a	Floor mounted	EACH	5				
b	Wall mounted	EACH	4				
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	35				
2206	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	30				
A2206	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with 12.5litre CI Flushing cistern with valve less fittings, with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	10				
A2207	Supply, laying and jointing Heavy Duty Cast Iron pipes Including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.						
a	75mm dia pipes	RM	135				
b	100mm dia pipes	RM	135				
c	150mm dia pipes	RM	75				
2208	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 all complete for following.						
b	300mm dia	RM	25				
Ac	400mm dia	RM	90				
d	600mm dia	RM	90				
Ae	800mm dia	RM	100				
AF	1000mm dia	RM	100				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
2209	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 complete for following.						
a	150mm dia	RM	50				
b	250mm dia	RM	50				
c	300mm dia	RM	25				
Ac	400mm dia	RM	10				
d	500mm dia	RM	5				
Ae	600mm dia	RM	5				
Af	750mm dia	RM	5				
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following:						
AAa	300mm dia	RM	14				
Aa	500mm dia	RM	10				
b	600mm dia	RM	10				
c	900mm dia	RM	8				
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	9				
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	1				
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with 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 etc all complete for following sizes:						
a	100x100mm P or S Type.	EACH	8				
b	150x100mm P or S Type.	EACH	2				
c	150x150mm P or S Type.	EACH	9				
2215	Providing and fixing C.I. floor traps with C.P jalli all complete.	EACH	70				
2217	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	9				
2218	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	4				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
2219	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	20				
2400 ROAD WORKS							
ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPECIFICATION, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER-IN-CHARGE FOR THE FOLLOWING.							
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within plant boundary all complete.	CUM.	15600				
2403	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required camber etc. complete as per specification.	CUM.	170				
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	5250				
2405	Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM.	3000				
2406	Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of blinding material moorum etc all complete.	CUM.	2500				
2407	Providing & applying tack coat of low viscosity liquid bitumen of a suitable approved grade conforming to IS 73, 217 or 454 as applicable @ 10 kg/ 10 sqm for an untreated WBM surface including scraping, cleaning with compressed air etc all complete.	SQM	23300				

SL. NO	DESCRIPTION	UNIT	QTY per unit	RATE IN INR		AMOUNT IN INR	
				In Figures	In words	In Figures	In words
2408	Providing, mixing & laying of compacted 75mm thickness bituminous macadam course . Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling etc as per IRC specification all complete..	SQM	23300				
A2410	Providing, mixing & laying premix carpet (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on a prepared base including mixing, applying, rolling etc as per IRC specification all complete.	SQM.	46650				
A2411	Providing and applying 25 mm thick premixed seal coat comprising of an application of fine aggregate premixed with bituminous binder including rolling as per specification all complete."	SQM.	46650				
2412	Supply & laying (400mmx150mmx350mm deep) precast concrete kerb stone of grade M-20 with 20 mm aggregate and of shape as per detailed drawing including fixing in 13mm thk cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	4500				
A2413	Providing and laying 230 mm wide bricks , with crushing strength of 50 kg/cm2, on edge for protection including fixing in 13mm thk. cement mortar 1:6 complete.	RM	1550				
2415	Dismantling of existing road consisting of premix carpet, curb stone/brick on edge, bitumen macadam course, WBM, prepaing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 Km etc. complete and as directed by Engineer.	SQM	1750				
2416	Providing 25mm thick premix carpet on existing/damaged road surfaces (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on the existing base including tack coat, cleaning of existing surface, mixing applying rolling as per IRC specification.	SQM	1750				
A2417	Filling below concrete roads 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	3050				
2420	Providing and laying 125 micron polythene sheets in road works etc including cost of labour, material or any incidental item thereof etc as per specifications/instructions of engineer in charge	SQM	6000				
2426	Providing and laying 75 mm thick precast interlocking concrete pavers of approved shape as per the approval of engineer in charge and specifications complete.	SQM	8300				
				Total			

Refer relevant clauses in the GCC for quantity variation and additional work