



**ISO 9001, ISO 14001,
OHSAS 18001 & SA 8000
certified company
SubContract Deptt.**

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CORRIGENDUM – 06 Dated 28/08/2018

**Sub: Tender for the work of "ALL CIVIL, ARCHITECTURAL AND STRUCTURE WORKS
OF MAIN PLANT AND BOPs FOR 1 X 660 MW PANKI TPS, PANKI, U.P".**

[TENDER NO. BHEL/NR/SCT/PANKI/MAIN CIVIL/1114](#)

The Corrigendum contains following amendment:

**BOQ cum rate schedule (Chapter – XI of TCC) has been revised and attached as
Annexure – II.**

All other terms and conditions against this NIT shall remain unchanged.

This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid
(Part – I).

AGM/ SCP

REVISE BOQ CUM RATE SCHEDULE- MAIN PLANT CIVIL WORKS

PROJECT: 1X660 MW PANKI THERMAL POWER PLANT, PANKI U.P.

SCOPE OF WORK: ALL CIVIL, ARCHITECTURAL AND STRUCTURE WORKS OF MAIN PLANT AND BOPs FOR 1X660 MW PANKI TPS, PANKI, U.P.

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE *QUANTITY
100	EARTH WORK					
	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, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, 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	134377	0.04819		
b	Depth exceeding 2 m but not exceeding 4 m	CUM	92641	0.06024		
c	Depth exceeding 4 m but not exceeding 6 m	CUM	25594	0.07515		
d	Depth exceeding 6 m but not exceeding 8 m	CUM	7587	0.09409		
e	Depth exceeding 8 m but not exceeding 10 m	CUM	2123	0.11302		
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	10665	0.02681		
107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected approved materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, sorting, spreading, watering, ramming/compaction by manual/mechanical means, dressing etc all complete as per specification, drawing and as directed by the engineer incharge for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	16062	0.03557		
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	89614	0.03958		
108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected approved materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, sorting, spreading, watering, ramming/compaction by manual/mechanical means, dressing etc all complete as per specification, drawing and as directed by the engineer incharge for the following					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	7079	0.01205		
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	45008	0.01377		
109	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM	71405	0.00402		
110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:					
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	7602	0.20445		
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	5906	1.20304		
200	CONCRETE WORKS					
	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) 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: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item					
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/ floors, at any depth below finished floor level etc.	CUM	3069	1.89721		
202	Concrete of grade M10 (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	7235	1.89721		
203	Concrete of grade M15 (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	935	1.89721		
204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	384	1.8995		
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, drains, under floors etc at all 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	14314	2.1112		
b	M 30 Grade	CUM	35075	2.12497		
206	Providing and laying Design Mix cement concrete of grade 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 all 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	M25 Grade	CUM	500	2.133		
b	M 30 Grade	CUM	19019	2.14677		
207	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills, Booster fan, etc at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system but including TG foundation columns with addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing					

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE * QUANTITY
a	M 30 Grade	CUM	3130	2.242	-	-
208	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations supported on vibration isolation system (excluding supply and installation of vibration system) and top deck of TG foundation at all levels including addition of suitable plastisizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, leveling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc, but excluding formwork, staging, reinforcement, embedments and temperature control of concrete. Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.				-	-
a	M35 grade	CUM	1440	2.94248	-	-
209	Extra over St. No. 205 to 208 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	1440	0.3729	-	-
210	Extra over ST Nos. 205 to 207 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	1590	0.19965	-	-
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	M20 grade	CUM	463	1.89721	-	-
b	M25 grade	CUM	957	1.89721	-	-
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.				-	-
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	543	1.89721	-	-
b	1:1:2 (1 part cement, 1 part sand, 2 parts of aggregate by volume)	CUM	245	1.89721	-	-
A213	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, chajas, beams, columns, wall panels, facias, decorative copings 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	450	2.83807	-	-
b	M 30 grade	CUM	406	2.85184	-	-
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives conforming to IS 9103 latest 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. Watertightness is to be ensured including structural grouting if required.				-	-
a	M 30 grade	CUM	6434	2.79734	-	-
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.				-	-
a	Plain cement concrete of all grades	CUM	37	0.38323	-	-
b	Reinforced cement concrete of all grades	CUM	81	0.51518	-	-
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	1270	0.01778	-	-
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	430	0.00172	-	-
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	137	0.09122	-	-
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	2671	0.03958	-	-
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	227	1.88746	-	-
300	FORM WORKS				-	-
	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following:				-	-
301	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	107355	0.18989	-	-
302	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing,for all heights as per specification, drawing and instruction of engineer in charge.	SQM	137477	0.22776	-	-
303	Fairface Formwork with good quality water proof ply wood of minimum 18mm thickness and smooth surface for TG superstructure (above base raft level) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights complete including chamfering of edges, deshuttering as per drawing,specification, and instruction of engineer in charge..	SQM	4145	1.26328	-	-

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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	67	0.09925	-	-
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	141	0.17957	-	-
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	211	0.33791	-	-
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	290	0.54501	-	-
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	364	0.80145	-	-
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	256	1.06363	-	-
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.				-	-
a	Extra for Curve Shuttering for Item No. 301	SQM	700	0.03786	-	-
b	Extra for Curve Shuttering for Item No. 302	SQM	100	0.04532	-	-
400	REINFORCEMENT				-	-
	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:-				-	-
401	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	57	35.66777	-	-
A403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500 conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Note: Reinforcement Steel will be supplied by BHEL and issued as FOC (Free of Cost) Item	MT	7981	3.82081	-	-
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.				-	-
a	12mm Reinforcement bar	EACH	119	0.16924	-	-
b	16mm Reinforcement bar	EACH	124	0.26792	-	-
c	20mm Reinforcement bar	EACH	10	0.37979	-	-
500	WATER PROOFING WORKS				-	-
	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:-(Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same, wherever required). Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item				-	-
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	31940	0.05737	-	-
A502	Providing and laying underbed P.C.C layer of grade M15 with 10 mm nominal size coarse aggregates and average thickness of 50 mm including preparation of surface, batching, mixing, leveling etc. all complete as per specification & direction of engineer in charge.	SQM	11702	0.12621	-	-
506	Providing and applying PU based water proofing treatment with one coat of polyurethane or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge.	SQM	31025	0.37348	-	-
A506	Providing & Applying two (02) coats of polymer modified cementitious waterproofing coating consisting of 100 % acrylic based polymer solids and portland cement based dry powder (with or without fine specially prepared quartz sand particles). Polymer shall be mixed in the ratio of 1 cement: 0.5 polymer (for minimum solid content of polymer 30%) and applied on concrete surface after cleaning and made free from grease, oils or loosely adhered particles, complete in all respect as per specification, as per manufacturer's specifications and as per direction of Engineer-in-Charge.	SQM	11763	0.37348	-	-
508	Providing and laying wearing course consisting of 40mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	22663	0.19391	-	-
509	Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M20 (1:1.5:3) with graded aggregate of 12.5mm size cast in panels of maximum size 1.5mx1.5m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	9737	0.1658	-	-
510	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbeds (as per drawing) filled up with (silicon/elastomeric) joint sealant, etc all complete. (Water proofing paid elsewhere)	SQM	6873	0.24726	-	-
511	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	72035	0.05966	-	-
515	Providing and applying IP net coating system(min 200 micron thickness) to exposed concrete surfaces of approved make and as per manufacturer's recommendation.	SQM	12	0.12793	-	-
600	JOINTS AND FILLERS				-	-
	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:-				-	-
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.				-	-

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a	12 mm wide joints.	SQM	664	0.22661	-	-
b	20 mm wide joints.	SQM	674	0.36143	-	-
c	25 mm wide joints	SQM	739	0.44576	-	-
d	50 mm wide joints	SQM	1224	0.86571	-	-
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.				-	-
a	12 mm wide joints.	SQM	13	0.28054	-	-
b	20 mm wide joints.	SQM	16	0.45092	-	-
c	25 mm wide joints	SQM	62	0.55763	-	-
d	50 mm wide joints	SQM	58	1.09059	-	-
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:				-	-
a	25mmX25mm	RM	1431	0.30406	-	-
b	50mmX25mm	RM	535	0.59148	-	-
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.(The sealant should have VOC content limited to 250 grams per litre as prescribed by GRIHA. All necessary documentation (certificates, manufacturer declarations) to be provided by the contractor to green building consultant, wherever required).				-	-
a	10mm X 40mm	RM	29	0.01836	-	-
b	12mm X 25mm	RM	337	0.01606	-	-
c	20mmX25mm	RM	318	0.02065	-	-
605	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.				-	-
a	12 mm wide joints.	SQM	100	0.01951	-	-
b	20 mm wide joints.	SQM	75	0.03155	-	-
c	25 mm wide joints	SQM	50	0.03958	-	-
d	50 mm wide joints	SQM	415	0.07688	-	-
608	Supplying and filling in position hot applied bitumin sealing compound (Grade B) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.				-	-
a	10mm X 40mm	RM	50	0.02754	-	-
b	12mm X 25mm	RM	25	0.02295	-	-
c	20mmX25mm	RM	15	0.03213	-	-
609	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicon or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove.Note: The sealant should have VOC content limited to 250 grams per litre . All necessary documentation (certificates, manufacturer declarations) to be provided by the contractor to engineer in charge, wherever required.				-	-
a	25mmX25mm	RM	100	0.27308	-	-
b	50mmX25mm	RM	100	0.53009	-	-
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)				-	-
a	150 mm wide and 8 mm thick	RM	25	0.16178	-	-
b	230 mm wide and 8 mm thick	RM	2466	0.1222	-	-
c	150 mm wide and 6 mm thick	RM	41	0.1222	-	-
d	230 mm wide and 6 mm thick	RM	264	0.18588	-	-
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	5	0.05852	-	-
614	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	10	0.17039	-	-
615	Providing and fixing 300 mm wide Stainless steel strips over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.	Kg	35	0.18358	-	-
700	MS EMBEDMENTS				-	-
	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:				-	-
703	Fabricating and fixing of mild steel embedment, mild steel foundation bolts, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. Including loading, transportation, unloading etc. all complete from BHEL store to plant site. Mild Steel Material will be supplied by BHEL free of cost.				-	-
a	Mild steel embedment, 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	366	7.34444	-	-
b	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, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	75	6.46554	-	-
704	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	Kg	869	0.03327	-	-
b	PVC pipes / conduits of all diameters	Kg	333	0.17842	-	-
c	UPVC pipes / conduits of all diameters	Kg	51	0.18645	-	-
d	Expansion anchor fasteners (galvanised) of HILTI make (HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:				-	-
i	8mm Dia	EACH	175	0.02237	-	-
ii	10mm Dia	EACH	285	0.02754	-	-
iii	12mm Dia	EACH	484	0.03155	-	-
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:				-	-
i	HST M8	EACH	160	0.05622	-	-
ii	HST M10	EACH	257	0.07974	-	-
iii	HST M12	EACH	441	0.11761	-	-
f	Chemical Epoxy Anchor fasteners (galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals etc. all complete:				-	-

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i	HAS-E5.8 M8	EACH	20	0.12621	-	-
ii	HAS-E5.8 M10	EACH	20	0.15605	-	-
iii	HAS-E5.8 M12	EACH	25	0.20079	-	-
iv	HAS-E5.8 M16	EACH	25	0.30463	-	-
706	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	50	0.84735	-	-
707	Providing, laying and fixing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	100	40.57917	-	-
800	GROUTING				-	-
	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item				-	-
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 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	56	0.20079	-	-
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all complete.	CUM	76	7.48041	-	-
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 as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	65	7.39034	-	-
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 as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	104	22.4854	-	-
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 as per specification, drawing and direction of engineer-in-charge.(Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	97	39.0715	-	-
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	70	0.82497	-	-
900	DOORS, WINDOWS, VENTILATORS, LOUVERS				-	-
	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.				-	-
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 smoothening, 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	9	62.00955	-	-
902	Providing and fixing teak wood 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, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles 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	38	1.55471	-	-
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, partial 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, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles 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	59	1.68953	-	-
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, shop and final painting etc all complete.	SQM	623	2.41812	-	-
905	Providing and fixing single or double steel door shutters with 18 gauge M.S. sheets shutter presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	148	2.52827	-	-
906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners, SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	Kg	2242	0.23808	-	-
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	277	3.72099	-	-

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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	598	0.95864	-	-
b	fixed type	SQM	480	0.63279	-	-
A908	Providing and fixing windows/ventilator with M.S. grills as per approved design for security purpose made of 25 mm X 6mm M.S. Flats / 12mm – 20mm M.S. square bar of approved design shall be provided to suit security requirements.	Kg	200	0.05335	-	-
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing, louvers, grills 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 drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, 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 separately).Weight of aluminium section only shall be measured.	Kg	42690	0.20194	-	-
A910	Providing, fabricating, supplying and fixing of Aluminium composite panel cladding (ACP) in pan shape in solid or metallic colour of approved shades made out of 4mm thick aluminium composite panel (weight of panel should be 7.5 kg/sqmt) material consisting of 3mm thick FR grade Class B1 as per EN 13501,mineral core sandwiched between two Aluminium sheets (each 0.5mm thick).The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF conforming to AAMA 2605 or Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicon sealant, backer rods etc. The top coated surface of ACP shall comply with the "specification for coated coil for the exterior building application" issued by ECCA (European Coil Coating Association). The aluminium composite panel top and bottom skin should conform to Aluminium Alloy 5005 (AlMg 1) marine grade series and H 22/24 temper with mechanical properties conforming to EN 485-2 standard. The ACP product must conform to either BS 476 part 6 & 7 or ASTM E 84 standards along with EN-13501-1. The manufacturer must furnish Class 1A certificate for this ACP produced in the plant from which it is going to be supplied. The panel shall be designed for 12mm groove in horizontal & in vertical with close joint system. Vertical & Horizontal groove shall be filled by non-staining high performance weather sealant. ACP panel shall have sub frame all around panel and aluminium stiffener profile as per structural requirements. The finished surface of ACP shall be protected with a self-adhesive (Rubber based) peel off foil with 70 microns thickness white or black, tested to withstand up to 6 months' exposure to local weather condition without losing the original peel off characteristic or causing stain or other damages on the coated surface of the aluminium composite panel. Installation of ACP Coping/facia at terrace level sealing the top gap of the parapet wall and ACP Panel shall have GI stiffeners below with required aluminium grid work with necessary MS HDG / aluminium alloy brackets & SS fasteners.2nd barrier of 1mm thk GI sheet laid continuously below the coping to seal the parapet wall. Overlap of GI sheet shall be properly sealed with weather sealant, All shade approval shall be as per Architect's Approval.as per approved sample from Alucobond Plus, Aludecor, Reynobond or equivalent. The system shall be designed to withstand a wind pressure of 200kg/sqm or as per design requirement and shall be fixed to the Masonry/RC walls or aluminium frame with necessary clamps, brackets and anchor fasteners etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any other fastening straps, nuts, bolts, rivets, washers, etc. shall be in stainless steel SS304 grade. EPDM gaskets, open cell polyethylene backer rods, weather sealant etc. shall be provided as per requirement. Item shall include aluminium base frame with all fixing arrangements to wall/RC members, fastening material and hardware(festering straps, nuts, bolts, rivets, washers etc.), EPDM gaskets, open cell polyethylene backer rods, weather sealant, scaffolding, approach to all height, material handling, transportation, labour, T&P, preparation of working drawings etc.all complete as per drawing, specification & instructions of engineer in charge. Measurement of payment shall be outer finished area of ACP panel.				-	-
a	4mm thick	SQM	300	1.50136	-	-
B910	Providing and fixing of wooden partition wall of approved make, color, shade including fire resistant transparent paint as per IS : 162 over french polish as per IS:348 or flat oil paint as per IS : 137 etc. all complete as per manufacturer specification.	SQM	270	2.05211	-	-
911	Providing and fixing of door closers as per specification ,of approved make & quality all complete of following type :				-	-
a	Over head hydraulic door closures as per IS 3564	EACH	34	0.56624	-	-
b	Floor mounted Hydraulic door closers as per IS 6315	EACH	34	1.12215	-	-
912	Providing and fixing pressed steel frames fabricated from 16 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 etc all complete as per specifications.	Kg	5695	0.05335	-	-
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	24	1.06248	-	-
b	Mechanically Operated	SQM	311	1.40785	-	-
c	Electrically operated	SQM	179	1.52316	-	-
Ad	Electrically and mechanically operated	SQM	107	1.98011	-	-
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	119	1.32294	-	-
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.				-	-
a	4 mm thick clear sheet glass	SQM	165	0.44576	-	-
b	4 mm thick clear float glass	SQM	165	0.45322	-	-
c	6 mm thick wired glass	SQM	2776	0.5714	-	-
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	125	0.99766	-	-
f	4 mm thick ground glass	SQM	96	0.59664	-	-
g	6 mm thick tinted heat reflecting type float glass	SQM	512	0.69933	-	-
h	6 mm thick clear toughened safety glass	SQM	615	0.85022	-	-
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	591	1.60864	-	-
j	6 mm thick laminated glass	SQM	10	0.5714	-	-
k	6 mm thick clear float glass	SQM	1300	0.5714	-	-

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An	One outer 6mm thick tinted heat-reflecting type toughened glass and one inner 6mm thick plain float glass hermetically sealed and separated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Asahi (India) Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance)≤ 59 %, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) 0.2 ≤ 0.32 and U- Value 1.2 to 2.5 W/MSq K.The properties of performance and colour of glass shall be as per detail design values as approved by Architect and engineer incharge.The glass should be free from distortion and thermal stress.	SQM	465	1.95863	-	-
Ao	One inner 6mm thick clear float glass and one outer 6mm thick reflective toughened glass hermetically sealed and separated by 12 mm thick gap for thermal insulation. Glass to be used shall be of make Saint Gobain (India),Asahi (India) or equivalent .Outer glass should have solar factor 25% or less, Maximum U-Value of 1.8 to 3.3W/SQMK, VLT min 47%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28).The properties of performance glass shall be as per detail design values. (only single elevation area to be measured)	SQM	465	1.95863	-	-
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	155	0.09351	-	-
A917	Providing and fixing 12 mm thick BWP particle or equivalent board with decorative veneer (pre-laminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works). All necessary documentation (certificates, manufacturer declarations,recycle contents) to be provided by the contractor to engineer in charge, wherever required.	SQM	720	0.66893	-	-
A918	Providing and fixing steel louvered window with ISMC 75/100 frame all round including verticals with 18G pressed steel louvers, including primer& painting as approved by engineer incharge etc. all complete.	SQM	200	1.27819	-	-
919	Providing and fixing 1 mm thk. MS sheet sliding shutters 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	287	1.68437	-	-
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 sealent, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	270	1.19902	-	-
A921	Supplying, installing and commissioning of self sliding mechanism for aluminum door (double shutter) including photo operated sensors, fittings, motors, mechanical systems, electrical systems, warranty all inclusive in working condition as per specifications (aluminum and glazing to be paid separately)	NOS	10	49.97228	-	-
A922	Providing and fixing in position wall panelling at all heights with 12mm thick compact laminates of greenlam or equivalent made out from High Pressure thermosetting resin treated Kraft as core material and design paper as a finish surface of size 600 x 600mm or 1200x1200mm having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non-combustible as per BS:476 (part-4) fire performance as per BS:476 (part 6 & 7), EN:BS1D0, humidity resistance of 100%, thermal conductivity < 0.043 W/m K as per ASTM 518:1991, having Anti-bacterial and anti-termite property under JIS Z2801:2000, Chemical resistance, Scratch resistant, should have the density >1.35kg/cm3 and fulfilled the criteria of FSC and Green Guard Gold certification and manufactured under EN438-2&3:2005 standard. comprising of a frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. Vertical studs of size 48 x 34 x 36 mm are placed at 600mm centre to centre in a floor and ceiling channel section of size 50 x 32m fixed to the floor and soffit at 600mm centres using 12mm dia,50mm long wedge type expanded zinc alloy dash fastener with 10mm bolt. This same channel is then to be fixed in horizontal direction at 600mm centre to centre so as to form a grid of 600mm x 600mm. compact Laminate panels are to be screw fixed with self-tapping pan head nickel coated mild steel screws of size 13 x 3.2mm on to this grid leaving an even groove of 1 mm between the panels. The joints between the panels are to be duly jointed and finished using recommended jointing filler compound and fibre joint tape roll 50mm wide (90 metre) roll and two coats of primer suitable for panelling as per manufacturer's specification as per direction of Engineer-in-Charge all complete. The laminated panel shall be as per approved colour and shade. Finish of Interior wall panelling shall be complete as approved by engineer Incharge. The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of compact laminate panels.	SQM	500	2.05211	-	-
1000	BRICKWORK				-	-
	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item				-	-
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(including cost of cement for brick making)	CUM	3206	2.79045	-	-
b	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	45	2.45083	-	-
A1001	Providing and Laying Face brick work conforming to IS 2691 in cement sand mortar 1:5 (1 cement 5 coarse sand) in exterior walls, etc. at all heights, places and position above plinth superstructure including raking out joints, pointing, curing, scaffolding etc complete excluding plastering and painting and as directed by engineer incharge. The face brick shall be of superior quality bricks to suit the exposed brick work, standard shape and size with finished edges with crushing strength of 75 kg/cm2.	CUM	354	5.10302	-	-
A1002	Providing brick work in cement mortar 1:5 (1 cement 5 coarse sand) in walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.				-	-
a	Using fly ash bricks conforming to IS 12894 with crushing strength of 75 kg/cm2	CUM	12409	3.12549	-	-
b	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	153	2.79562	-	-
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(including cost of cement for brick making)	SQM	2523	0.37807	-	-
b	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	SQM	25	0.30119	-	-
1004	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.				-	-

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a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	16	0.3075	-	-
b	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	SQM	16	0.23063	-	-
1005	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	50	0.46412	-	-
1006	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 of 1:6. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	CUM	287	2.89429	-	-
1007	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	22	0.07229	-	-
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	19	0.53927	-	-
A1008	Making openings in existing AAC block work or partition wall including making good the broken edges/surface with cement mortar etc. complete	CUM	4	0.53927	-	-
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	1353	0.03557	-	-
1010	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	46	0.33963	-	-
1011	Providing and filling brick bats in soak pits all complete.	CUM	53	0.41708	-	-
1100	DAMP PROOF COURSE					
	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item					
1101	Providing Damp Proof Course of following thickness with 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.					
a	50mm thick	SQM	2010	0.16006	-	-
1200	CEMENT MORTAR PLASTER					
	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: The masonry mortar to be used should have more than 25% of fly ash content in green buildings. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to green building consultant, wherever required. Cement will be supplied by BHEL and issued as FOC (free of Cost) item					
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete	SQM	22989	0.12679	-	-
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:3 on walls finished to a smooth finish as per specification all complete.	SQM	75691	0.09925	-	-
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	23494	0.09236	-	-
1207	Forming groove of uniform size from 12X12 mm upto 25X15 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	200	0.01147	-	-
1208	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	762	0.22833	-	-
1300	FINISHES TO CONCRETE / PLASTERED SURFACES					
	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:					
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	16250	0.02605	-	-
A1304	Two or more coats of acrylic washable distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	36838	0.02865	-	-
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	1266	0.03947	-	-
A1305	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. Note: The paint should have VOC content limit less than 150 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge, wherever required.	SQM	5565	0.03947	-	-
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	1232	0.15874	-	-
A1306	Providing and applying 2 or more coats of Chemical Resistant Paint of approved brand and colour to floors, walls and ceilings including preparation of surface to receive paint and as approved by engineer in charge at all heights above or below ground level, complete as per specification	SQM	1100	0.15874	-	-
B 1306	Providing and applying 2 or more coats of Oil Resistant Paint of approved brand and colour to floors, walls and ceilings including preparation of surface to receive paint and as approved by engineer in charge at all heights above or below ground level, complete as per specification	SQM	1475	0.15874	-	-
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	450	0.08944	-	-

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1308	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate 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, inclusive of intermediate coat of Titanium dioxide / micaceous iron oxide complete as per specifications.	SQM	503	0.0829	-	-
1310	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	50	0.02605	-	-
A1312	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. Note: The paint should have VOC content limit less than 200 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge, wherever required.	SQM	22000	0.0358	-	-
A1313	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulphide sealant of matching color and shade as per specification/drawing/approval of engineer in charge. Note: The paint should have VOC content limit less than 200 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	5640	0.2195	-	-
1316	Providing and applying 2 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	31899	0.02754	-	-
A1319	Providing and applying Silicon coating of approved make to exposed brick surfaces/exposed concrete surfaces and wherever instructed by Engineer-In-Charge. The treatment shall be in 2 coats or as recommended by approved manufacturer including preparation of surfaces by cleaning, curing, protecting, complete at all heights.	SQM	2848	0.05166	-	-
1321	Providing and applying french polish (minimum 2 coats) on wood surface made from best quality shelac, denatured spirit and other suitable alcohol soluble ingredients and made by a well known approved manufacturer as per IS 348 including required base preparation etc. all complete as per specification	SQM	50	0.09294	-	-
1400	FLOORING AND SKIRTING				-	-
	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.				-	-
1401	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 12.5 mm 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, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	28753	0.19334	-	-
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with non-metallic hardener pigmented topping 12mm thick flooring. Under layer of 38mm thick cement concrete mix 1:1:2 (1 cement: 1 sand : 2 stone aggregates 12.5 mm well graded) and top layer of 12mm thick non-metallic concrete of mix 1:2 (1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	27995	0.19334	-	-
B1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with cement concrete mix 1:1:2 (1 cement: 1 sand: 2 stone aggregate 12.5 mm well graded) including cement slurry, rounding off edges, aluminium strips etc. all complete (Quoted item rate shall be inclusive of providing glass joint strips)	SQM	8134	0.19334	-	-
A1402	Providing and laying 18 mm thick skirting and dado with cement mortar 1:3 (1 cement: 3 sand) finished with a floating coat of neat cement all complete as per specification.	SQM	1807	0.14285	-	-
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum topping pigment content is 3.5 kg per 50 Kg of Cement) of size 300X300X22 thick of approved shade as per IS 1237, including minimum 20mm cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc.(inclusive of cost of cement for tiles manufacturing) all complete for following:				-	-
a	Laid in floors	SQM	1258	0.47272	-	-
b	Laid in skirting	SQM	63	0.56107	-	-
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and should be laid on subbase of 63 mm down aggregate with sand mix bedding of minimum 200 mm thickness as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing)				-	-
c	80mm	SQM	1023	0.37512	-	-
1405	Providing and laying 50 mm thick floor finish with 25mm thk Terrazo Tiles including minimum 25mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete.(inclusive of cost of cement for tiles manufacturing)	SQM	2192	0.38151	-	-
1406	Providing and laying polished Kota stone 18mm to 20mm thk in flooring. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	2826	0.57083	-	-
1408	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	152	0.50256	-	-
1410	Marble stone Flooring laid in 50mm overall thickness with 18-20mm thick marble slabs (grade -1) with minium 30mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level.The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	0.85251	-	-

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1412	Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30 mm thick 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 @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	7100	2.20815	-	-
1414	Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	755	2.19725	-	-
A1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer of make Johnson, Qutone, Varmora or equivalent complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following. Note:-The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of tile, to be used).				-	-
b	10mm thick tiles In flooring	SQM	2159	0.61902	-	-
d	10mm thick tiles In skirting and dado upto specific height	SQM	98	0.6259	-	-
A1417	Providing and laying Heavy Duty Anti Skid Ceramic Tiles with Matt Finish of size 300x300mm or 600x600mm from reputed / approved manufacturer of make Johnson,Qutone,Varmora or equivalent complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following. Note:-The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of tile, to be used).				-	-
b	10mm thick tiles In flooring	SQM	1427	0.61902	-	-
d	10mm thick tiles In skirting and dado upto specific height	SQM	27	0.6259	-	-
A1418	Providing and laying min.10 mm thk Double Charge Glazed vitrified tiles of make Johnson,Qutone,Varmora or equivalent in flooring and skirting over 38 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern. Note:-The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of tile, to be used).				-	-
a	600X600 mm	SQM	2209	0.78504	-	-
1419	Providing and laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete.	SQM	211	2.41812	-	-
1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including 20mm underbed of cement mortar 1:3 with neat cement slurry @3.3kg/sqm etc. all complete.				-	-
a	600X600 mm	SQM	1496	0.31897	-	-
A1421	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 (Johnson,Qutone,Varmora 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 with neat cement slurry @3.3kg/sqm all complete. Note:-The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of tile, to be used).	SQM	2386	0.46814	-	-
A1422	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 joints shall be cured with resin type mortar filling up the entire length of the joint. The excess mortar shall be trimmed off to make the joints smooth & place. Seal coat shall then be applied over the epoxy mortar to cover up porosity that may be left in mortar. The tiles should be abrasion resistant & durable. The total thickness alongwith bedding shall be min. 50 mm.				-	-
a	25mm thick	SQM	6749	1.52832	-	-
b	38mm thick	SQM	472	2.23684	-	-
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	688	1.4744	-	-
A1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm 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	2215	2.26074	-	-
1427	Providing and fixing 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 20mm thick underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete for following thicknesses:				-	-
a	5mm thick	SQM	1787	0.4188	-	-
b	7mm thick	SQM	327	0.4188	-	-
A1428	Providing and laying 2mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.	SQM	408	0.08873	-	-

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A1429	Providing and fixing Removable type flooring system (raised access floor) consisting of fire resistant Cementitious panels of 600 x 600x 35 mm and Laminated with 1.2 mm thick fire retardant food grade antistatic laminate top finish to ensure max bonding to the steel surface. Cementitious panels shall be steel welded construction, with an enclosed bottom pan of 64 hemispherical and top plain sheet which are fuse welded at multiple location to form a panel. The panel is coated with 40-60-micron epoxy coat after cleaning, degreasing, phosphate by several tank processes & is heated to achieve max adhesion to the panel surface & corrosion resistance. The inner empty core of the panel is injected with a light weight fire retardant, non-combustible cementations compound at high pressure to fill in all the crevices of the panel and ensures support of not less than 90% of the top surface area of the panel. Pedestal (300mm – 800 mm) must be 25mm dia. pipe with min.2.0 mm thickness with bottom plate of 100x100x min.2.0mm thick & top plate must be 75x75x3.0 mm. All pedestal shall be tightening to Stringer of 20x30x575x1.0 mm Rectangular tube. The system shall be design for Uniformly distributed load (UDL) of 13 KN (1300 kg/ sqm), for the same all complete as per specification.	SQM	408	2.30625	-	-
1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.				-	-
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	200	0.01893	-	-
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	250	0.0459	-	-
A1431	Providing and fixing 15mm thick wooden panel flooring and skirting of greenlam or equivalent of approved color,shade multi-layered engineered wooden planks treated with VOC free lacquers and stains to provide extra strengthening, longevity and durability to planks. In all planks each layers are arranged at cross grain to each other for provide the balancing and stability to all three layers. Top layer of flooring is made up of about 3.0 mm thick thermosetting re-polish able natural veneer setting on a core of about 10 mm thick pine wood that produce natural characteristic of wood with 2.0mm thick bottom ply based veneer balancing layer. The planks are joint to each other through plankloc system with glue less technology and laid on 2mm thick dual barrier underlay protecting sheet having anti-bacterial, Anti-termite, fire-resistant, noise reduction, high wear and abrasion resistance, water resistant properties. The system includes all accessories like beading, Quadrant, Veneered/solid wood skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge. (The contractor should provide the material cut sheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of wooden flooring to be used).	SQM	1226	1.26328	-	-
1500	ROOFING / SIDE CLADDING				-	-
	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) Item.				-	-
1502	Designing, providing, erection 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 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest 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 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 epoxy primer applied over hot dipped galvanising @ 275 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.				-	-
a	Span Upto 1800mm	SQM	10004	0.73605	-	-
b	Span Exceeding 1800mm and upto 2500 mm	SQM	3090	0.73605	-	-
1503	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	27	11.46013	-	-
1504	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	12932	0.46871	-	-
1505	Designing, providing, Erection and fixing profiled External Cladding sheet manufactured out of 0.55 mm TCT(Total Coated Thickness) of permanently colour coated zincalume steel (150gsm. zinc-aluminium alloy coating total of both sides as per AS 1397:1993) having 300MPa yield strength. The colour coating shall comprise of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side.The sheet shall have 500 mm cover width, 47mm height crests at 250mm centres with special male/female side laps and anti-siphoning features to prevent leakage. The sheet shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc coated self drilling fastners/screws 4.2 X 25mm long on to the sub-girts. The clips shall be concealed and no fastners are to penetrate the external sheeting, all complete as per specification.				-	-
a	final painting with Silicon Modified Polyester(SMP)	SQM	2760	0.46871	-	-
1508	Designing, providing and fixing Inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides of both sheets including fixing to supports / rails by concealed fixing system (Z Purlin) , corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed surface of the sheet shall be permanently colour coated with silicon modified polyester paint of minimum dry film thickness (DFT) 20 microns over suitable primer. Other face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. The sheet shall be fixed directly to side runners and Z spacers as per IS : 277. The sheet shall be fixed at the rate not more than 1500mm center to center to hold the insulation and external sheeting.	SQM	7561	0.57312	-	-
1512	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.				-	-

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a	For insulation in Sandwich Cladding	SQM	9111	0.253	-	-
Ac	mineral wool insulation(density 48 kg/cum) bound in polythene bags on top of false ceiling panels	SQM	9476	0.253	-	-
A1514	Providing and installing under deck insulation with PUF material of 50 mm nominal thickness conforming to relevant IS/ASTM standard having a density of 36kg/cum using minimum 0.05 mm thick aluminium foil on exposed surface followed by 24G and 25 mm mesh GI wire netting, fixed at various elevations with 100X50X6 slotted mild steel plate welded to MS plate inserts at the soffit of slab @600 mm c/c including clips etc. Cost of insulation shall be paid under this item.	SQM	3990	0.29258	-	-
1516	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	227	0.54099	-	-
1517	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.	SQM	235	0.32529	-	-
1600	FALSE CEILING FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc. at all level as per specification, drawings and as directed by engineer-in-charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.				-	-
1601	Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.				-	-
a	12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).	SQM	2885	0.3207	-	-
A1601	Providing and Fixing 12.5 mm thick GRG board perforated/ mineral fibre based acoustic ceiling board (600x600MM) in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ). Work shall include 25mm thick resin bonded mineral wool insulation (as per IS:8183) bound in polythene bags on top of ceiling. The work to be complete as per specifications, drawings and direction of engineer. Payment terms - a) On receipt of Gypsum board false ceiling at site - 50%; b) On completion of erection & fixing - 50%.The contractor should provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of board to be used)	SQM	1443	0.48076	-	-
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm . Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301).	SQM	9527	1.02003	-	-
A1604	Providing, fixing and laying permanently colour coated aluminium false acoustic ceiling of Hunter Douglas,dunlop or equivalent of approved colour with stove enamel finish of approved make in LINEAR and SQUARE,CURVILINEAR TYPE false ceiling with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including with acoustic fleece on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm 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. (Structural steel works for platform for movement is separately payable under relevant items of BOQ).The contractor should provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of ceiling material).	SQM	889	0.95692	-	-
A1609	Providing and Fixing 12mm thick Calcium silicate board of HILUX or equivalent in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C 635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ). Work shall include 25mm thick resin bonded mineral wool insulation (as per IS:8183) bound in polythene bags on top of ceiling. The work to be complete as per specifications, drawings and direction of engineer. Payment terms - a) On receipt of false ceiling at site - 50%; b) On completion of erection & fixing - 50%.The contractor should provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of board to be used)	SQM	793	0.63279	-	-
1700	RAIN WATER DOWN TAKE PIPES RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.				-	-
1702	Providing and fixing HCl down take pipes of 150mm dia with water tight lead joint etc. all complete.	RM	577	0.91275	-	-
1703	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-I) / IS:3589 all complete.	RM	2587	0.64254	-	-
1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.	RM	2652	0.84218	-	-
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	350	0.20997	-	-
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	350	0.30119	-	-
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.				-	-
a	100 mm Dia	RM	200	0.66606	-	-

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE * QUANTITY
b	150 mm Dia	RM	200	0.91676	-	-
c	200 mm Dia	RM	400	1.23918	-	-
1708	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.				-	-
a	100 mm Dia	RM	100	0.83989	-	-
b	150 mm Dia	RM	400	1.08658	-	-
c	200 mm Dia	RM	400	1.51111	-	-
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.				-	-
a	110 mm Dia	RM	200	0.20366	-	-
b	160 mm Dia	RM	100	0.30693	-	-
c	200 mm Dia	RM	400	0.45551	-	-
1800	MISCELLANEOUS WORKS				-	-
	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ / contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.				-	-
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	27122	1.20189	-	-
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	1031	1.42678	-	-
1804	Providing and fixing weep holes in Retaining wall, drains, etc consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening all complete.	EACH	1515	0.08376	-	-
1807	Anti termite chemical treatment of soil with Chlorpyrifos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	13696	0.06368	-	-
1808	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	460	4.11282	-	-
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items.	EACH	40	3.07386	-	-
1813	Providing Earthing/test 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	125	10.53075	-	-
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	30	7.13504	-	-
A1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 610 g/sqm etc. all complete.	Kg	385	0.035	-	-
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	25	3.85007	-	-
1821	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust suppression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	215	0.24497	-	-
A1837	Providing and laying factory made Autoclave Aerated concrete blocks(AAC) of dimensions 625mmX250mm in cement mortar 1:6 (1 part cement : 6 part coarse sand) conforming to IS 2185 Part III, in Boundary walls, chambers etc. at all depths, places and positions below/above plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting all complete as per specification and drawing and as directed by engineer in charge. AAC blocks shall have min. compressive strength of 30 kg/sq.cm, Density in the range of 550-650 kg/cum, average thermal conductivity of 0.162 W/mk, 2-6 hrs. of fire resistance depending on thickness, and average drying shrinkage of 0.02%. The blocks shall be made of a mixture of fine fly ash, quicklime, cement, gypsum as binding agents and water, aluminium powder as foaming agent, The moulded blocks shall be steam cured in high pressure autoclaves. 1 no. 6 mm diameter MS bar shall be placed at every alternate course and anchored properly with main structure. The item includes the rate of 6 mm MS bar placed at every alternate course. All AAC blocks should have fly-ash content more than 40%. The contractor should submit the documents certifying the percentage of fly-ash content of required quality in AAC blocks. Note: Cement for making of AAC blocks is in the scope of contractor.	CUM	1985	3.11287	-	-
A1838	Providing engineering consultancy services for Architectural design & drawings of GRIHA and ECBC compliant buildings in harmony with the overall plant and presented in the form of presentation drawings, including 3-D perspective rendered view,with color schemes, energy simulation,solar analysis,Daylight Modelling, lighting design, as per ECBC compliance ,Green Building norms and specification including preparation of integrated services drawings in co-ordination with electrical, HVAC & fire systems and taking approval on drawings from BHEL/customer, All activities required for obtaining GREEN BUILDING certification as per specifications etc. all complete.the bidder should have experience in design of green building in industrial power plant setup and completed similar kind of buildings with green building rating. Structural design & drawing, of buildings & foundations are in scope of BHEL and not included in scope of bidder.The scope of bidder shall include coordination with respect to HVAC, electrical & fire fighting systems & space requirements for electrical facilities in consultation with BHEL/customer. HVAC design parameters & space requirement as per GRIHA norms shall be provided by bidder for further detail engineering by BHEL.Engineering services of interior architecture, PA system, planning for firefighting system as per inputs provided by BHEL, external & internal finishes, landscaping, plumbing & sanitation, water supply system, false ceiling, internal partitions, reception, glazing, planning for parking etc. are also included in this item. Approximate sizes of buildings are mentioned below, however, for any variation during detailed engineering stage, no extra payment is admissible.Bidder shall also provide BOQ & specification of finishing items in a generalized fashion in consultation with BHEL Civil design wing, during detailed engineering stage for further sub-contracting of finishing works.The above scope shall also include the landscape design and BOQ along the buildings as per specification.				-	-
a)	Service building of Approx. 4000 Sq.M. floor area in Ground+ 4 storeys	LS	1	1938.952	-	-
b)	Administration Building of Approx. 4500 sqm in G+2 Storeys	LS	1	2181.321	-	-
c)	Training Centre of Apprx. 300 sqm in Single storey	LS	1	145.4214	-	-

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE * QUANTITY
2000	FENCING AND GATES					
	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.					
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 conforming 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 barbs 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 paid separately under item 2007)	RM	1752	0.70622		
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	20	45.22151		
2008	Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.	MT	1	42.32722		
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 stiffners, 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	16	49.35555		
A2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings & motorized arrangement of opening/closing etc. all complete.	MT	21	47.13249		
2100	WATER SUPPLY					
	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.					
A2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks with flow rate less than 5 LPM (litres per minute) at 45 psi, including sockets, union, nuts etc all complete -15mm nominal bore.(Note: Flow rate of all faucets at 45 psi should be less than 5 lpm. The contractor should submit the cutsheets/ declaration from the manufacturers mentioning the same to Engineer in charge.Note: Flow rate of all faucets at 45 psi should be less than 5 lpm. The contractor should submit the cutsheets/ declaration from the manufacturers mentioning the same to Engineer in charge.	EACH	209	0.39757		
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	105	0.12679		
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	52	0.21169		
b	50mm nominal bore.	EACH	52	0.37462		
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	50	0.14457		
b	20 mm nominal bore.	RM	165	0.16695		
c	25 mm nominal bore.	RM	490	0.20825		
d	50 mm nominal bore.	RM	220	0.34766		
Ae	40 mm nominal bore.	RM	50	0.27813		
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	50	0.11875		
b	20 mm nominal bore.	RM	50	0.14113		
c	25 mm nominal bore.	RM	225	0.18244		
d	50 mm nominal bore.	RM	235	0.32127		
Ae	40 mm nominal bore.	RM	50	0.25702		
A2106	Providing and fixing 600mmx900mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws, edge mounted with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	116	0.68387		
A2108	Providing and fixing 20 mm diameter stainless steel towel rails (600mm X 20mm) with C.P. mounting brackets all complete.	EACH	78	0.22443		
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	EACH	52	0.22317		
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	EACH	117	0.17383		
2111	Providing and fixing stainless steel / C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	EACH	120	0.31496		
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	118	0.144		
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	EACH	58	0.02983		
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	1000 litres capacity	EACH	1	3.26203		
A2114	Providing and fixing in position HDPE water tank including making all necessary inlet and outlet pipes, fixtures, ball cocks, valves etc. all complete as per specification for following capacities. GI pipes shall be paid seperately under ST no. 2105					
a	500 litres capacity	EACH	19	1.63101		
b	1000 litres capacity	EACH	31	3.26203		
c	2000 litres capacity	EACH	5	6.52349		
A2115	Providing and fixing approved Geyser of 25 Litres capacity with inlet and outlet connections and all other fittings etc. all complete.	EACH	5	4.01587		
2200	SANITARY WORKS					
	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: Note: Cement will be supplied by BHEL and issued as FOC (free of Cost) item.					

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2201	Supply and fixing glazed vitreous china Wash Basin of approved make 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.				-	-
a	White	EACH	60	1.4962	-	-
b	Colored	EACH	58	1.60807	-	-
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 as per approved sample mounted over 20 mm thk granite beveled edge counter counter.The Basin shall be fitted with approved shape bib cock, photo-voltaic control system for water control with flow rate less than 5 LPM (litres per minute) at 45 psi,CP brass chain with rubber plug, 40mm CP brass waste and bottle trap with necessary union including cutting of notch in granite counter slab etc complete as per specification	EACH	25	1.92968	-	-
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 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	15	1.1451	-	-
2203	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	15	2.14906	-	-
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	69	1.99359	-	-
b	Wall mounted	EACH	1	4.12716	-	-
A2204	Providing and fixing wall mounted coloured glazed vitreous water closet with flushing valve system,water faucet ,Toilet paper holder, open front solid plastic seat and plastic cover,including necessary CP connection etc all complete.having flow rate of 6/3 LPF (litres per flush) or less and faucet having flow rate of 5 LPM (litres per minute) or less.	EACH	30	4.95259	-	-
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	46	2.01424	-	-
A2205	Providing and fixing colour glazed vitreous china 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 having flow rate of 6/3 LPF (litres per flush) or less at 45 psi.	EACH	25	2.01424	-	-
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	156	2.42501	-	-
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 440x265x355mm with photo voltaic control flushing system as per IS: 2556(pt-6 sec-1) with flush pipes, lead pipes, gratings, traps and necessary C.P fitting etc. all complete as per specification having flow rate of 2 LPF (litres per flush) or less at 45 psi.	EACH	40	2.42501	-	-
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 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	895	0.10843	-	-
b	110mm dia pipes	RM	1395	0.15719	-	-
c	160mm dia pipes	RM	50	0.20596	-	-
d	200mm dia pipes	RM	50	0.25128	-	-
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.				-	-
a	200mm dia	RM	1150	0.23923	-	-
b	300mm dia	RM	1255	0.29832	-	-
c	450mm dia	RM	998	0.93627	-	-
d	600mm dia	RM	1334	1.22082	-	-
e	900mm dia	RM	50	1.91499	-	-
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	100	0.15949	-	-
b	250mm dia	RM	75	0.20882	-	-
c	300mm dia	RM	55	0.23005	-	-
d	450mm dia	RM	50	0.30521	-	-
e	500mm dia	RM	55	0.41421	-	-
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:				-	-
b	600mm dia	RM	50	1.3958	-	-
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	122	1.28106	-	-
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH			-	-
A2212	Providing and fixing circular heavy duty C.I. Grill cover with frame, painting etc. all complete.	EACH	35	1.10895	-	-
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) 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:				-	-
b	150x100mm P or S Type.	EACH	108	0.62475	-	-
2214	Providing and fixing C.I. floor traps size 100 mm Inlet and 100 mm Outlet Sand Cast Iron S&S as per IS: 1729 with C.P jalli all complete.	EACH	193	0.4056	-	-
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	72	0.39011	-	-
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	114	0.54673	-	-
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	5	10.99888	-	-
A2223	Providing and fixing Desert Cooler with all fittings etc all complete as per specification	EACH	5	5.73695	-	-
A2224	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 50 mm domestic water inlet pipe	EACH	4	5.16326	-	-
A2225	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 150 mm sewer water outlet pipe	EACH	4	7.45804	-	-

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2300	STRUCTURAL STEEL					
	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:					
2301	Fabrication, erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including 2 coats of red oxide zinc-chromate primer (one coat at shop and one coat after erection), connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL Note: Structure Steel will be supplied by BHEL and issued as Free of Cost (FOC) Item.	MT	12554	13.21793	-	-
A2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2) and applying zinc silicate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	12554	2.15365	-	-
A2304	Extra over ST No. 2301 for providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats of different tint to distinguish the same and keeping overall DFT with primer not less than 100 microns including protection and cleaning, scaffolding etc. all complete.	MT	12554	0.87202	-	-
2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.					
a	Minimum galvanisation of 610 g/sqm	MT	512	56.194	-	-
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.	KG	66	0.04303	-	-
2312	Providing and fixing in positioning of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	KG	289	0.04762	-	-
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	60	3.51388	-	-
2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:					
a	In erected position	MT	27	7.16602	-	-
b	In fabrication yard	MT	27	6.0433	-	-
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, re-welding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	27	4.93263	-	-
A2317	Supply, fabrication and erection of minimum 6 mm thick stainless steel liner of grade SS316L on M.S. plate for inside surfaces vertical portion and inclined portion of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper)	MT	365	159.6645	-	-
2318	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ±50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.					
a	20 Tons	EACH	5	6.58258	-	-
b	25 Tons	EACH	5	7.48959	-	-
c	40 Tons	EACH	4	8.09369	-	-
d	50 Tons	EACH	8	8.69894	-	-
e	60 Tons	EACH	12	9.30304	-	-
f	100 Tons	EACH	1	10.51239	-	-
2319	Providing and fixing flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	378	1.08314	-	-
2320	Supply, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..	MT	15	159.0013	-	-

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE * QUANTITY
2321	Supply, fabrication and fixing of MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payments terms - a) on receipt of materials at site - 65%; b) Erection & fixing - 35%	MT	7	56.69025	-	-
2322	Supply, fabrication and fixing of GI pipe hand railing (900 mm high) of 32 mm/40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete.	MT	74	63.82529	-	-
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	3	0.4842	-	-
2324	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	3	0.33045	-	-
2325	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	3	0.15088	-	-
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	3	0.25988	-	-
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	3	0.20825	-	-
2328	Supply, fixing lightning arrester and air terminal over roof of power house building, pump house and other structures including all materials, labour, electrodes etc complete (all materials to be supplied by the contractor).	EACH	2	1.89377	-	-
A2329	Design, supply, fabrication, erection of stoplog gates, Sluice gates etc. 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, including an application of etching primer, epoxy paint, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval, technical specification 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 paid separately under relevant BOQ item) (Supply of structural steel is in the scope of contractor only)	MT	23	58.61442	-	-
2332	Design, 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, 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, submission of drawings / fabrication drawings for engineers approval etc all complete. (supply of structural steel is in the scope of contractor only)	MT	28	55.29272	-	-
2400	ROAD WORKS				-	-
	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation etc. as per specification, drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following: Note: Cement will be supplied by BHEL and issued as Free of Cost (FOC) Item.				-	-
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 a lead upto 1 km etc. all complete.	CUM	30797	0.02582	-	-
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	855	0.08605	-	-
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size (IRC 19 - grading -1), 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	8555	1.54553	-	-
2413	Supplying and laying 400mmx150mmx350mm deep precast concrete kerb stone of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete. Note: cement for kerb stone making is in the scope of contractor	RM	15000	0.14858	-	-
A2415	Supply and laying 150mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:3) in 13mm thick joints, finishing of joints with neat cement paste etc all complete. Payment terms - a) On receipt of materials at site - 50%; b) On completion of erection & fixing - 50%.	RM	1623	0.33259	-	-
2416	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadam course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	250	0.03778	-	-
2417	Providing 25 mm compacted thick premix carpet on existing/damaged road surfaces in a single course composed of suitable small size aggregate premixed with a bituminous binder using medium setting grade bitumen on the existing base including tack coat, cleaning of existing surface, mixing, applying, rolling etc all complete.	SQM	250	0.10958	-	-
2419	Providing and laying cement concrete of grade M30 using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)	CUM	8555	2.12497	-	-
2421	Providing & laying dry lean cement concrete of grade M15 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	5045	1.89721	-	-
	REINFORCEMENT FOR ROAD WORKS				-	-
A2422	Providing and fixing in position MS dowel bar reinforcement including surface painted with bitumen and greasing, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	49	35.66777	-	-
A2423	Straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc all complete as per specification, drawing and as directed by Engineer. Note: Reinforcement Steel will be supplied by BHEL and issued as Free of Cost (FOC) Item)	MT	203	3.82081	-	-
A2424	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	11	35.66777	-	-
	MISCELLANEOUS				-	-

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 1000000 (Rounded off to	AMOUNT (Rs.) = RATE * QUANTITY
A2425	Providing & installation of bitumen impregnated fibre board of 20 mm thickness and 225 mm width conforming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	RM	1141	0.01133	-	-
A2426	Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	17152	0.01606	-	-
A2428	Providing & laying 80 mm thick precast (M35 Grade) interlocking concrete pavers of approved colour and pattern as per specification and recommendation of manufacturer. Note: cement for paver blocks making is in the scope of contractor.	SQM	8117	0.29775	-	-
A2429	Providing and laying 50mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	8117	0.0895	-	-
A2430	Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.	SQM	34219	0.00895	-	-
A2431	Providing and laying Inverted Choke with 25 mm course of screenings (Grading-B) over prepared subgrade including compaction etc all complete as per specification, drawing and as directed by Engineer.	CUM	855	1.156	-	-
A2433	Providing and installation of Variable message signs including Cantilever type MS supports etc. all complete as per drawings, specifications, manufacturer's recommendations, indian standards.	EACH	50	0.21479	-	-
2600	LEVELLING & GRADING					
2601	Cutting of trees having girth more than 300 mm measured at a height of 1m above ground level including removal of roots, stacking the serviceable material like trunks, branches etc at specified area within the plant boundary and disposal of unserviceable parts/materials within a lead upto 1km etc all complete.	Nos.	50	0.10499	-	-
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m below ground level so as to exclude all debris, grass, vegetation, bushes including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	116250	0.00975	-	-
2603	Earth work in excavation upto any depth below ground level in all types of soil including moorum, ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	22125	0.03958	-	-
A2608	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock directly from excavation within a lead upto 1km and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tising etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	7920	0.01377	-	-
A2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock from compulsorily excavated earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tising etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	98940	0.03958	-	-
2610	Extra over ST No. 2601 to 2609 for carriage of unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM	45600	0.00402	-	-
A2611	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250 mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tising, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	2640	0.17785	-	-
	Total Amount					-
						'A'
NOTES:						
1	Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.					
2	Contractor shall fully understand description and Specifications of items mentioned in BOQ.					
3	Conditional price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.					
4	Quantities mentioned in rate schedules are approximate only and liable for variation on either side depending upon site / design requirement. The tentative contract value (CV) of entire scope of work shall be calculated as per finally quoted / accepted rates & the Quantities indicated in BOQ cum Rate Schedule .					
5	Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same.					
6	In case of any mis-match in rate and amount on price discrepancy, the same will be dealt as per clause no. 1.4 of GCC.					
7	Taxes (GST) shall be payable extra as per relevant clauses in Technical Conditions of Contract.					