

T S No: BHE/PW/PUR/HONGI-CVL/1532

BOQ / SOQ for Execution of Civil works comprising of Cost-in-Situ RCC bored piles and Entire Civil works for GTG Foundation, STG foundation, HRSG Foundation, AUX Foundations, Pipe Racks, Dearator structure, GTG Hall, STG Hall, SWGR cum Control cum Cellar Buld, DG shed, IA& workshop shed etc including BOP Civil, roads, drains, culverts, cable & pipe trenches with/without sand filling, complete all for Combined Cycle Captive Power Plant, ONGC Hazira, Gujarat

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	Weightage in %
LEVELLING & GRADING				
11	Earth work in filling upto any depth below/ above ground level for grading to proper grade and level in layers not exceeding 250 mm loose thickness with approved borrowed CNS soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorowed 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, tesing, 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	22867.83903	2.752229233
12	Providing and laying 200mm thick stone pitching in 1 cement : 6 sand mortar with raised pointing in 1 cement : 3 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	325.412	0.391196559
100 EARTH WORK				
	Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.			
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 5km, 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	16000	0.690200479
b	Depth exceeding 2 m but not exceeding 4 m	CUM	5100	0.299201908
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100	0.007635343
108	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 200 mm thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	14830	0.511783655
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	60	0.002070601
109	Extra over ST No. 101 and 103 to 107 for carriage of excavated earth/selected materials for every 1 km or part thereof beyond an initial lead of 500m.	CUM	6310	0.097991213
110	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 200 mm thickness using/with approved borrowed CNS soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	1220	0.146831524
111	Supplying and filling sand upto any depth under floors, around foundations, plinths, trenches etc. in layers not exceeding 200 mm thickness and compacted so as to achieve at least 85% 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	6902	1.77450198
200 Concrete Works				
	Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. Note: 1) Cement for all concrete works shall be only portland slag cement conforming to IS:455 with minimum 50% slag Cement or Portland pozzolana cement conforming to IS:1489 shall be used for construction. 2) Aggregate shall be machine crushed blue granite conforming to IS:382 3) The consumption of cement (per cum. of concrete) shall be as per recommended/approved concrete design mix subject to minimum requirement of IS 456/FICHTNER Specifications/ Approved drawing (whichever is higher). However no extra claim shall be entertained on account of excess cement consumption as per the actual design mix to achieve required target strength & other parameters.			
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 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	800	1.013214303
201(a)	Concrete of 1 part cement, 5 part sand, 10 parts of 40 mm graded aggregate by volume as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc	CUM	100	0.113986609
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	50	0.072578894
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	30	0.051428563
204	Concrete under floors, paving, plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.			

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b	M20 Grade	CUM	80	0.147771923
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 any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M20 Grade	CUM	985	1.819441796
b	M25 Grade	CUM	200	0.410151635
c	M30 Grade	CUM	4577	11.24028621
206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at any level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M25 Grade	CUM	50	0.107132056
b	M30 Grade	CUM	1525	3.597109208
207	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of grade M-30 Grade in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system including addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing.	CUM	500	1.171399625
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 plasticizers 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	M30 grade (with 20mm nominal size graded stone aggregate)	CUM	231	0.553742236
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	731	0.112259382
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)			0
a	M20 grade	CUM	500	0.885829177
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, 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 (1:2) 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.			
b	M 30 grade	CUM	240	0.76446605
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 plasticizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades.			
b	M 30 grade	CUM	700	1.701559868
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	10	0.007807893
b	Reinforced cement concrete of all grades	CUM	10	0.011021639
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	100	0.00401179
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	100	0.004572578
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	100	0.00418434
			11619	0
300 FORM WORKS				

	Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets 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 required thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	18340	2.452541127
302	Fairface form work with good quality water proof ply wood of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.	SQM	6025	1.021421218
303	Fairface Formwork with good quality water proof ply wood of required 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.	SQM	100	0.05745919
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.			
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	230	0.038099066
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	350	0.092249608
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	110	0.040238688
400 REINFORCEMENT				
405	Taking delivery of steel from BHEL stores / store yard, loading, Transportation, unloading, straightening, cutting, bending, placing in position at any level, binding in position of corrosion resistant steel -HCRM re-bars of approved make with steel of grade Fe-500 conforming to IS:1786 norms including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	1332	3.996286655
406	Taking delivery of steel from BHEL stores / store yard, loading, Transportation, unloading, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	0.6	0.001800129
500 WATER PROOFING WORKS				
	Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.			
511	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	100	0.001854914
512	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.	SQM	1000	0.033647273
513	Providing and applying concrete structures two coats of ERPB (Epoxy resin based anticorrosive and chemical resistant paint) over a coat of CPCI (concrete penetrating bipolar corrosion inhibitor) with 300 to 325 micron DFT for protection of concrete against carbonation and chloride penetration in saline/marine environment all complete of approved make and as per manufacturer's recommendation	SQM	5955	1.014691763
514	Providing and applying IP net coating system (total DFT of 370 micron) to exposed concrete surfaces of approved make and as per manufacturer's recommendation.	SQM	772	0.023977565
515	Providing and laying 5 layered Bitumenous Polymeric membrane (Multiplas standard or equivalent) consisting of a central core of 90 microns thick High Molecular High Density Polyethelene (HMHDPE) film protected on both sides with polymeric asphaltic mix and further covered on both sides with protective thermofusible HMHDPE film over graded and treated concrete screed (paid under item no. 515a). The membrane shall be unrolled over the coated surface with overlap of 100mm and overlaps shall be sealed by flame. Roof with parapets, a chase 75mm dip shall be cut in the parapet at about 150mm above the roof level and membrane shall be laid as flashings in widths with a minimum overlap of 100mm. After the flashing has been properly bonded, the chase shall be cleaned and shall be filled up with cement mortar 1:4 flush with the face of the wall, and allowed to set by adequate curing, complete as per manufacturer's recommendation, specifications and directions of engineer in charge.	SQM	900	0.138212646
a	Providing and laying underbed grading screed layer with 40mm (min) thick plain cement concrete of grade M15 (1:2:4) with 20mm downgraded brick bats aggregate including preparation of surface, batching, mixing, leveling etc. all complete as per specifications and directions of engineer in charge.	CUM	36	0.072196696
b	Providing and applying of suitable approved primer (Multiplas primer or equivalent) coat over the hardened and finished concrete screed at the rate of 250g/scm etc all complete as per manufacturer's recommendation, specifications and directions of engineer in charge.	SQM	900	0.012190666
c	Providing and laying wearing course over treated membrane consisting of 20mm thick plaster of cement mortar 1:3 cast in panels of maximum size 3mX3m 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	900	0.115694855
d	Providing and applying a coat of hot bitumen at not less than 1.5 kg/ sqm over membrane etc all complete as per manufacturer's recommendation, specifications and directions of engineer in charge.	SQM	120	0.008277229
516	Providing and laying 7 layered Bitumenous Polymeric membrane (Multiplas Hyper or equivalent) consisting of a central core non woven polyester mat of minimum 140 g/sqm over graded and treated concrete screed (paid under item no. 515a). The membrane shall be unrolled over the coated surface with overlap of 100mm and overlaps shall be sealed by flame etc. complete as per manufacturer's recommendation, specifications and directions of engineer in charge.	SQM	100	0.022690341
600 JOINTS AND FILLERS				
	Joints & fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.			
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			

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c	25 mm wide joints	SQM	140	0.096567674
603	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.			
c	20mmX25mm	RM	1000	0.006470629
604	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.			
c	20mmX25mm	RM	300	0.001682364
606	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:			
b	230 mm wide and 8 mm thick	RM	2130	0.379476537
608	Providing and fixing joint sealing aluminium strips of minimum 18 swg. thick and 300mm wide and shall conform to IS:737 of 19000 grade of 31000 grade (edsignation as per IS:6051) all complete as per specifications and directions of engineer in charge.	RM	100	0.020015814
700 EMBEDMENTS				
	Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.			
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	30	0.893813934
702	Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT	5	0.046858142
703	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	25	0.157139237
704	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	7.2	0.265989461
705	Supplying, fabricating, erecting and installing following items in concrete/ brickworks for road crossing and all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.			
b	PVC pipes / conduits of all diameters of class-1 as per IS:4985	Quintal	5	0.037980438
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	Upto 250 kg	Each	100	0.011776546
ii	Beyond 250 Kg and upto 500 kg	Each	100	0.018290313
iii	Beyond 500 Kg and upto 750 kg	Each	100	0.02950607
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	Upto 250 kg	Each	100	0.013933422
ii	Beyond 250 Kg and upto 500 kg	Each	100	0.021223665
iii	Beyond 500 Kg and upto 750 kg	Each	100	0.033345311
800 GROUTING				
	Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.			
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	20	0.20921702
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	0.5	0.003112588
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	2	0.045787037
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	2	0.050844481
900 DOORS, WINDOWS, VENTILATORS, LOUVERS				
	Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.			
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.	CUM	9.3	0.419027483

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902	Providing and fixing teakwood frame panel door shutter as per IS 1003 with 38 mm x 150 mm vertical rail & 38mm x 125 mm horizontal rail and 15mm marine board panel (with decorative surface veneer/teak veneer on outer face and laminated plastic sheet on inside face) 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.	SQM	20	0.031283337
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 paint of 250 micron epoxy based etc all complete.	SQM	35	0.087282321
906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of Indian Aluminium Company Ltd or equivalent make having minimum 2.5mm 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 0.06mm 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 including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. The alloy used shall conform to IS designation HE 9-WP of IS:733 and section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	SQM	55	0.128853959
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	20	0.12616002
908	Providing and fixing steel windows/ventilator with steel sections @ 100 mm c/c as per IS:1038, IS:1361 & IS:7452 latest revision and with 12 mm square MS safety bars including all fittings, metal beadings, hold fasts, shop and final paint of 250 micron epoxy based, glazing etc. all complete. (Glazing shall be paid separately)			
a	openable type	SQM	100	0.119663508
b	fixed type	SQM	100	0.114659555
909	Providing and fixing anodised aluminium work of Indian Aluminium Company Ltd or other equivalent approved make having minimum 2.5mm thickness for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of 0.06mm 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, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately). Weight of aluminium section only shall be measure. The alloy used shall conform to IS designation HE 9-WP of IS:733 and section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	Kg	1000	0.194981635
911	Providing and fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :			
a	Over head hydraulic door closures	Each	25	0.016478536
b	Floor mounted Hydraulic door closers	Each	20	0.022440143
912-a	Providing and fixing pressed steel door frames from commercial mild steel 18 gauge sheet conforming to IS 4351, including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.6mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5mm thick with mortar guards, lock strike plate and shock absorbers and specified and fixing with adjustable lugs with split end tail to each jamb applying a coat of approved steel primer after pre-treatment of the surface and finish paint of 250 micron epoxy based etc. all complete as per drawing, specification and instruction of engineer in charge.	kg	735	0.034876693
913	Providing and fixing in position PVC coated rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres with effective bridge depth of 12 mm lath sections, interlocked with each other and ends locked with malleable cast iron clips to IS: 2108 and shall be designed to withstand a wind load of 200 Kg/m ² without excessive deflection. The guides shall be either rolled or pressed deep channel sections 75 mm and 25 mm wide fitted with necessary fitting and fixtures. The suspension shaft shall be formed from heavy duty tubes conforming to IS:1161 and of sufficient diameter so as to resist deflection due to weight of the rolling shutter. The deflection shall not exceed 5 mm/ metre width. The shaft shall be provided with CI pulleys and helical springs for counter balancing the weight of the shutter adequately. The springs shall be approved high tensile flat springs conforming to Grade 2 of IS:4454. These shall be fitted inside the fabricated housing of either ends which counter-balance the shutter curtain. The ball bearings shall be double row self-aligning ball bearings fitted inside C.I. housing fixed on side brackets holding the suspension shaft at either end. The roller assembly shall be designed so as to be capable of producing sufficient torque to ensure easy operation of the rolling shutter in any position. The spring tension shall be adjustable by means of suitable adjustments holes drilled on the rims of the pulley. The hood cover shall be made of 20 gauge galvanized sheets with necessary stiffeners and framework to prevent sag. The bottom lock plate shall be made of 5 mm thick M.S. plate and 95 mm wide reinforced with angle/T iron of suitable section with 6 mm dia M.S. rivets interlocked with last stride of curtain. The locking arrangement shall consist of sliding bolts at both ends of the bottom plate fitted to engage with suitable receiving pockets at the bottom of guide channels.			
b	Mechanically Operated	SQM	20	0.03313825

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c	Electrically operated	SQM	200	0.563376141
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	10	0.011435759
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 plain glass sheet	SQM	100	0.019584439
d	6 mm thick plain glass sheet	SQM	50	0.015982455
i-a	Two nos. 6 mm thick laminated safety glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	150	0.186936486
l	6.3 mm thick laminated safety glass	SQM	100	0.051937586
J	6 mm thick wired glass	SQM	300	0.095894729
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting with 250 micron epoxy based paint etc. all complete.	SQM	70	0.090649205
920-a	Skylight (polycarbonate sheets): Supply and installation of 2mm thick clear embossed polycarbonate sheet (sabic India make) (polycarbonate profile to match with standing seam profile with side laps to be clamped with bare galvalume sheets of 0.55mm (tct), which can be further seamed with metal roof sheets. Product required is clear embossed with both sides UV stabilizer, having at least 60-80 % transparency, confirming to the relevant IS code including cutting to shape and size as required including necessary sealants (silicon sealants/ butyl sealants for transverse laps). Including all materials, tools & tackles, labour etc. required for completing the work in all respect as per direction of engineer in-charge.	SQM	50	0.039708096
1000 BRICKWORK				
	Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.			
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.			
d	Using burnt clay bricks of class designation 5 of nominal dimension	CUM	928	1.312637075
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
d	Using burnt clay bricks of class designation 5 of nominal dimension	CUM	415	0.611534879
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.			
d	Using burnt clay bricks of class designation 5 of nominal dimension	SQM	465	0.117144276
1006	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	20	0.0074024
1009	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	5	0.002480408
1010	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	500	0.0541376
1011	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	10	0.002868646
1100 DAMP PROOF COURSE				
	Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.			
1102	Providing Damp Proof Course 40mm thick 1:2:4 concrete (6mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.	SQM	182	0.029912426
1200 CEMENT MORTAR PLASTER				
	Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.			
1201	Providing 20mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:3 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	2500	0.163922614
1202	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	2800	0.138902846
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	2600	0.120008608
1208	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	100	0.001035301
1300 FINISHES TO CONCRETE / PLASTERED SURFACES				

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	Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.			
1301	Three or more coats of white wash/ colour wash as per IS 6278 of approved brand and manufacture over a primer coat to give an even shade including cost of primer and paint, surface preparation etc. all complete as per manufacturers guideline.	SQM	1450	0.010007907
1303	Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface, including cost of primer and paint, surface preparation etc. all complete as per manufacturers guideline.	SQM	1500	0.048529721
1305	Providing and applying two or more coats of acrylic plastic emulsion paint as per IS 15489 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over two coat of primer over prepared plaster surface including cost of primer and paint, surface preparation etc. as per manufacturers guideline.	SQM	990	0.050820324
1312	Providing and applying 3 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per manufacturers guideline.	SQM	990	0.029040185
1313	Providing and applying ready made Epoxy Paint over areas other than steel structure with suitable pigments of approved shade over a primer and prepared plaster surface including cost of primer and paint, surface preparation etc. as per manufacturers guideline. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 250micron thickness over epoxy primer.	SQM	1900	0.283586122
1316	Providing and applying acid resistant resin based epoxy coating of approved brand over two coats of Dekguard S manufactured by FOSROC or equivalent after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including cost of primer and paint, surface preparation, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable finish over prepared plaster surface as per manufacturers guidelines.	SQM	70	0.01044791
1317	Providing and applying two or more coats of Apex Ultima/ Exterior weather shiled from ICI or equivalent paint of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including cost of primer and paint, surface preparation, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.	SQM	2420	0.152883288
1718	Providing and applying 2 or more coats of acid/alkali resistant chlorinated rubber based paint of approved brand and colour over a coat of chlorinated rubber based primer, as per manufactures instructions over plastered surfaces. including cost of primer and paint, preparation of surfaces, scaffolding etc., all complete as per per manufacturers guidelines.	SQM	120	0.016305986
1400 FLOORING AND SKIRTING				
	Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.			
1401-a	Providing and laying 40 mm thick Indian Patent Stone (IPS) flooring and skirting with non-metallic hardener NITOFLOL HARDTOP or equivalent topping 12mm thick uniform graded flooring. Under layer of 28mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 10mm well graded) and top layer of 12mm thick non-metallic concrete of mix 1:3 (1 cement hardner mix with approved quality non-metallic hardening compound as per manufacturer specification :3 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): (In absence of manufacturer direction, surface hardner application rate shall be 7 kg/sqm)	SQM	3000	0.507297352
1401-b	Providing and laying 40 mm thick Indian Patent Stone (IPS) flooring and skirting with metallic hardener NITOFLOL HARDTOP or equivalent topping 12mm thick uniform graded flooring. Under layer of 28mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 10mm well graded) and top layer of 12mm thick metallic concrete of mix 1:3 (1 cement hardner mix with approved quality metallic hardening compound as per manufacturer specification :3 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): (In absence of manufacturer direction, one part of metallic hardner shall be mixed dry with 4 part of cement by volume)	SQM	670	0.13595569
1412-a	Providing and laying 20 mm thick polished Granite stone of approved black color and texture in flooring with brass/ stainless steel strips. Under bed shall average 15 mm thick of 1 cement : 3 sand by weight and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	220	0.324851483
1414	Providing and laying 20 mm thick polished Granite stone of approved black color and texture in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	10	0.015214607
1432	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 make 'MARBONITE' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes			
a	10mm thick tiles In skirting and dado upto specific height	SQM	280	0.160281806
1433	Providing and laying non-skid Ceramic Tiles of 6mm thick of reputed manufacturer of approved finish shade and colour in flooring and dado including 19mm thick underbed of cement mortar 1:3 with neat cement slurry etc. all complete.			
a	400X200 mm	SQM	50	0.028621751

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1434	Providing & fixing 25 mm thick Acid / Alkali resistant (Chemical resistant) tiles conforming to IS: 4457 in flooring/Dado and shall be laid over under bed layers and total thickness shall be 50mm. The under bed layers shall be laid in three layers. The first layer shall be composed for 1 part cement and 3 parts river sand with just enough water to make the mix workable. The second layer consist of 3 mm thick hot blown bitumen conforming to IS: 702 of grade 85/25 and shall be applied in three coat with brush or spray. The third layer shall be 6 mm thick acid proof mortar as specified by manufacturer. Including cost of tiles, under bed layers, preparation of surface, curing etc. all complete. The tiles should be abrasion resistant & durable.	SQM	230	0.286085295
1435	Providing and fixing false flooring all complete as below: Floor Panels for False Flooring: Floor panels for false flooring shall be of 600x600x32 mm cement fill metallic false flooring panels with 1.2 mm thick antistatic, high abrasion resistance, high pressure laminate tiles on faced on top (Lloyd insulations or approved equivalent) unless otherwise specified. All steel works and stools shall be provided with two coats of polyurethane paint over a coat of approved primer. Each panel shall have PVC beading on all edges. The floor panels shall be of completely removable type. The clearance under the floor shall be as per drawing, the floor panels shall be cut wherever required for providing suitable outlets for cables etc. Supporting arrangement for false flooring: The supporting arrangement for cement fill metallic panels false flooring shall consist of seamless pipe 25 mm. outer dia and 100x100x12 mm thick base plates. The pipes shall be fixed on the floor @ 600 mm c/c with 50x6 mm metal screw with nylon rowal plug. The pipe heads will have MS check nut and M18x 100 long studs with jack head zinc plated of size 90x90x4 mm thick over which GI stringer 30x20x1.5 thk having pre punched holes 6 mm dia for the fixing of panels. The pedestals will have level adjustments to ± 25 mm for levelling. Each pedestal shall be able to support a load of 2500 kg without deformation. All steel framework shall be hot dip galvanized.	SQM	450	1.181989889
1500 ROOFING / SIDE CLADDING				
Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
1511	Designing, providing and fixing Permanent colour coated sandwiched insulated metal side cladding system including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. consisting a) Troughed zinc - aluminium alloy coated (both sides) M.S. sheets of 0.8 mm bare metal thickness having minimum yield strength 250 MPa (or high tensile steel sheet of 0.5 mm minimum thickness) shall be used on external face (outer face) of cladding system. Weight of coating shall not be less than 150 gm /sq.m. The outer side (exposed face) shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of Dry Film Thickness (DFT) 40 microns (min) over primer. Inner side of external sheet shall be provided with suitable pre-coating of minimum 7 microns. Double dip Galvanized (475 gm/sq.m) MS sheets of minimum 0.8 mm thickness shall be used as inner liner (internal face) of cladding system. The exposed face shall be permanently colour coated with silicon modified polyester paint of DFT 40 microns (min) over primer. Other face of internal sheet shall be provided with suitable pre-coating of minimum 7 microns. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. Inner sheet shall fixed directly to side runners and Z spacers made of at least 2 mm thick galvanized steel sheet of grade 375 as per IS : 277. Inner sheet shall be fixed at the rate not more than 1.50 m center to center to hold the insulation and external sheeting. b) The insulation shall be of bonded mineral wool of minimum thickness 50 mm conforming to IS : 8183, having a density of 32 kg / cu.m for glass wool & 48 kg /cu.m for rock wool.	SQM	3300	4.502652236
1512	Designing, providing and fixing Permanent colour coated sandwiched insulated metal roof cladding system including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. consisting a) Troughed zinc - aluminium alloy coated (both sides) M.S. sheets of 0.8 mm bare metal thickness having minimum yield strength 250 MPa (or high tensile steel sheet of 0.5 mm minimum thickness) shall be used on external face (outer face) of cladding system. Weight of coating shall not be less than 275 gm /sq.m. The outer side (exposed face) shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of Dry Film Thickness (DFT) 40 microns (min) over primer. Inner side of external sheet shall be provided with suitable pre-coating of minimum 7 microns. Double dip Galvanized (475 gm/sq.m) MS sheets of minimum 0.8 mm thickness shall be used as inner liner (internal face) of cladding system. The exposed face shall be permanently colour coated with silicon modified polyester paint of DFT 40 microns (min) over primer. Other face of internal sheet shall be provided with suitable pre-coating of minimum 7 microns. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. Inner sheet shall fixed directly to side runners and Z spacers made of at least 2 mm thick galvanized steel sheet of grade 375 as per IS : 277. Inner sheet shall be fixed at the rate not more than 1.50 m center to center to hold the insulation and external sheeting. b) The insulation shall be of bonded mineral wool of minimum thickness 50 mm conforming to IS : 8183, having a density of 32 kg / cu.m for glass wool & 48 kg /cu.m for rock wool.	SQM	1100	1.350795671
1513	Designing, providing and fixing Permanent colour coated non-insulated metal side cladding system consisting Troughed M.S. sheets of 0.6 mm bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 150 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 outer side (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 side (internal face) of the sheet shall be coated with same paint of minimum DFT 12 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	350	0.208505251

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1514	Designing, providing and fixing Permanent colour coated non-insulated metal roof cladding system consisting Troughed M.S. sheets of 0.8 mm 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 outer side (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 side (internal face) of the sheet shall be coated with same paint of minimum DFT 12 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	450	0.305609125
1515	Rain Water Gutter: Supply & installation of leak proof rain water gutter fabricated out of plain pre-painted Galvanized (min. coating 275 gm /sq. m) M.S. sheets of 1 mm bare metal thickness having minimum yield strength 250 MPa with 2mm thick FRP coating on all joints min. 300mm overlap of girth. Cost includes proper supporting structure and necessary arrangement for maintaining slope complete as per manufacturers' specification. Water discharge calculation to be provided by the contractor before procurement of material at site.	RM	150	0.078424029
1600 FALSE CEILING				
	False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.			
1603-a	Providing and fixing false ceiling system consisting of Ceiling Panels: Ceiling panels shall be square edged plain panels, 84 mm wide x 15 mm deep with 25mm recessed flanges, formed out of 0.5mm thick corrosion resistant aluminium alloy electrically power coated in approved colour made of Luxalon 84C or approved equivalent including all splices, fittings etc. complete as per manufacturers specifications. Suspension system for aluminium panels: The panels shall be supported on formed carriers, 15 mm wide at top and 43 mm deep, made out of 0.91 mm min. thick aluminium alloy electrically powder coated in stain black with protruding cars to hold panels in a module of 100 mm (16 mm gap between the panels) at a maximum spacing of 1.3 metres. Carriers shall be suspended from the slab/roof by 4 mm dia galvanised steel wire/rod hangers with height adjustment suspension springs made out of galvanised spring steel hangers, fixed to slab by J hooks and nylon inserts. Edges of the ceiling shall be trimmed with suitable matching edge profiles to cover the gap between the false ceiling and the walls etc. complete as per manufacturers specifications. Note: Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete.	SQM	650	0.659206164
1607	Providing and fixing under deck insulation of 50 mm thick resin bonded mineral wool conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool with one face having aluminium foil of 0.05 mm thickness including slotted angles 50x50x6, 50mm long fixed to underside of slab with anchor fasteners at 600mm c/c in both direction, fixing of insulation to the underside of slabs at 600 mm centre in both direction with suitable adhesive as per manufacture's recommendation keeping aluminium foil face of insulation at bottom, holding the insulation in position by means of 25mm x 24 SWG GI wire net tied to slotted angles etc. all complete as per specification and instruction of the engineer.	SQM	650	0.135991063
1700 RAIN WATER DOWN TAKE PIPES				
	Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.			
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 with suitable grating at mouth all complete.	RM	200	0.071867125
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty CI grating at mouth all complete for following diameters.			
b	150 mm Dia	RM	200	0.130706716
1800 MISCELLANEOUS WORKS				
	Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.			
1801	Providing and Filling in trenches, plinths, foundations, 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	200	0.114487004
1803	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	2160	0.068951028
1805	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	200	0.031404122
1806	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	200	0.04279243
1808	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	100	0.020015814
1810	Providing, laying and fixing rails and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	5	0.178153685
1812	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	55	0.289618905

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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	70	0.142798165
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	100	0.004400028
1817	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.			
a	Upto 75 mm dia	RM	10	0.001246675
1818-a	Providing and laying 200mm thick stone pitching including caulking with in 1 cement : 6 sand mortar with raised pointing in 1 cement : 3 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.	SQM	100	0.051506211
1823	Fire proofing of steel structures with VERMICULITE cementitious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, surface preparation, curing, staging, compatible paintings etc. all complete.	CUM	100	3.415543345
1825	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	300	0.164224576
1828	Dismantling old existing reinforced/non-reinforced brickwork/blockwork/stone masonry work in mud/lime/ cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto1km all complete.	CUM	20	0.006858867
1829	Dismantling old existing plain/re-inforced concrete work at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.	CUM	20	0.020386797
1830	Dismantling old existing structural steel work at any level including plates, bolts, cutting rivets, welding, dismembering and stacking the dismantled materials within a lead upto 1km etc all complete.	MT	5	0.021124448
1834	Providing and fixing GI pipes & elbows of medium duty of Class-"B" Type conforming IS:1239 in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete. Galvanizing shall be minimum 360gram/Sq.meter conforming to IS:6745, IS:2629 & IS 4736.			
a	50 NB pipe	RM	100	0.029441364
b	100 NB pipe	RM	75	0.033970805
c	150 NB pipe	RM	50	0.032676679
b	50 NB elbow	EACH	30	0.021715433
c	100 NB elbow	EACH	20	0.01669595
b	150 NB elbow	EACH	12	0.012014665
1835	Supply and installing 25mm deep FRP grating of approved make including manufacturer's clip fixing system on drain all complete.	SQM	20	0.007497303
2000 FENCING AND GATES				
Fencing and gates including all labour, material, equipment etc at any level as per specification, drawings and as directed by engineer - in - charge.				
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	2	0.082440996
2011	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing conforming to IS 2761 of 10G (excluding PVC coating) hot dip galvanised steel wires woven in the form of zig-zag mesh giving an opening size of 50 mm square. Cost to include for 6 mm dia. GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under ST No. 2007)	RM	100	0.076396566
2100 WATER SUPPLY				
Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	10	0.003269825
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	20	0.002243152
b	20 mm nominal bore.	RM	80	0.010560067
c	25 mm nominal bore.	RM	20	0.003304335
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:			
b	20 mm nominal bore.	RM	20	0.002829822
c	25 mm nominal bore.	RM	80	0.01414911
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	5	0.002025307
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	EACH	5	0.001662952
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) all complete.	EACH	5	0.001997268
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	EACH	5	0.001337263
2110	Providing and fixing C.P. soap holder mounted with C.P. screws etc all complete.	EACH	5	0.000871378
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	5	0.001330793
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	5	0.001216478

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2113	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	EACH	5	0.001926091
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.			
a	1000 litres capacity	EACH	1	0.003453159
b	2000 litres capacity	EACH	2	0.013628008
c	5000 litres capacity	EACH	2	0.034642888
2115	Providing and fixing approved stainless steel sink with integrated drainboard as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	1	0.002028758
2200 SANITARY WORKS				
Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in -				
2201	Supply and fixing glazed vitreous china Wash Basin 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	6	0.0120509
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, 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	5	0.012419295
2203	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	1	0.001776403
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 15 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
a	Floor mounted	EACH	3	0.007517577
b	Wall mounted	EACH	2	0.005456898
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	3	0.00682522
2206-a	Providing and fixing white flat back half shell glazed vitreous china urinals of size 610x410x380 mm without photo voltaic control flushing system including 250x125mm white ceramic foot rest as per relevant standard with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	8	0.03129369
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.			
c	160mm dia pipes	RM	100	0.088259386
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
b	300mm dia	RM	50	0.026292324
c	450mm dia	RM	50	0.050902285
b	600mm dia	RM	50	0.060112148
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.			
b	250mm dia	RM	50	0.015486373
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	10	0.023786034
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	10	0.045393623
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:			
b	150x100mm P or S Type.	EACH	10	0.009140843
2216	Providing and fixing heavy duty UPVC floor traps with C.P jalli all complete.	EACH	20	0.004003163
2219	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	6	0.004682147
2220	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	4	0.066195402
2300 STRUCTURAL STEEL				
Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings				

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2301	Taking delivery of steel from BHEL stores / store yard, loading, Transportation, unloading, fabrication and erection 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, 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 20° C for welding over 20 mm and upto 40 mm & 66° C for welding over 40 mm and upto 63 mm & 110° 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, online production test coupons , 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.			
(I)	Fabrication	MT	850	4.289789017
(II)	Erection, alignment and welding Payment Break up: a) Erection :70% (Seventy Percent) b) Alignment and Welding : 30 % (Thirty Percent)	MT	850	2.309886394
2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying epoxy resin based zinc phosphate primer in coats of minimum 50 micron (DFT) at shop and 50 micron (DFT) after erection, including touch-up painting etc all complete. Payment Break up: a) Shot Blasting & first coat of primer :70% (Seventy Percent) b) Second Coat of primer : 30 % (Thirty Percent)	MT	850	1.383442154
2302-a	Extra over ST NO. 2301 for providing and application of intermediate coat of epoxy resin based paint pigmented with Titanium dioxide of 100 micron (DFT) primer over steel structures already having primer coats.	MT	850	0.752771466
2302-b	Providing and applying top coat of epoxy paint suitably pigmented of approved colour and shade finish paint with glossy finish of minimum 75 micron dry film thickness (DFT) and finishing coat of polyurethane of 25micron (DFT) thick of approved make and shade to achieve an even shade over steel sections already having primer coats and Inter mediate coat keeping overall DFT not less than 300 microns including protection and cleaning, scaffolding etc. all complete	MT	850	0.852872104
2309	Extra over above ST NO. 2301 for finishing the grating units with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of primer all complete.	MT	50	0.408426133
2311	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	Quintal	1	0.009631748
2312	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	1	0.003473003
2313	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	1	0.004711481
b	In fabrication yard	MT	1	0.004411244
2314	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	1	0.003586023
2320-a	Supply, fabrication and fixing of hot dip galvanized (at 610gm/sqm over blasted cleaned surface) hand railing (1000 mm high) with 40mm NB pipes of medium class conforming to IS: 1161 with threaded ends, necessary bends, tees, elbows, sockets etc. including transportation, loading/ unloading, touch up painting etc. all complete.	MT	5	0.185247652
2321	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	20	0.019972676
2322	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	20	0.013122437
2325	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	20	0.012113018
2400 ROAD WORKS				
	PROVIDING ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPECIFICATION, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER FOR THE FOLLOWING			

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2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within plant boundary all complete. Subgrade below road/pavement shall be compacted to 95% of Modified Proctor Density as per IS: 2720 part-VIII and slope of sub-grade shall be same as top of the pavement slope.	SQM	2200	0.119577233
2403	Providing, stacking & laying granular morrum for shoulder in layers (max. 150mm in loose thickness) including watering, compaction with road roller to required camber etc all complete.	CUM	97.8	0.021009875
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	220	0.171394034
2405-a	Providing & laying water bound macadam base course in two layers each 83mm thickness rolled to 150mm thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	SQM	2200	1.805995828
2407	Providing & applying tack coat of low viscosity liquid bitumen of a suitable approved grade conforming to IS 73, 217 or 454 as applicable @ 10 kg/ 10 sqm for an untreated WBM surface including scraping, cleaning with compressed air etc all complete.	SQM	2200	0.064913355
2408	Providing, mixing & laying of compacted 115 mm thickness bituminous macadam binder course. Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling etc as per IRC specification all complete.	SQM	2200	0.615917652
2409	Providing, mixing & laying premix carpet (as per IRC-14) of compacted 50 mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on a prepared base including mixing, applying, rolling etc as per IRC specification all complete.	SQM	2200	0.167028516
2410	Providing and applying premixed seal coat of 25mm thick comprising of an application of a layer of bituminous binder at the rate of 6.8kg/ 10 sqm followed by a cover of stone chips at the rate of 0.06 cum/ 10 sqm including rolling etc as per IRC specification all complete.	SQM	2200	0.095234725
2411	Supply & laying (400mmx150mmx350mm deep) precast concrete kerb stone of grade M-20 with 20 mm aggregate and of shape as per detailed drawing including fixing in 13mm thk cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	652	0.025291165
2414	Dismantling of existing road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, preparing sub grade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	50	0.001041771
2415	Providing 25mm thick premix carpet on existing/ damaged road surfaces (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on the existing base including tack coat, cleaning of existing surface, mixing, applying, rolling etc as per IRC specification all complete.	SQM	50	0.004551009
2417	Filling below roads with stone (150 mm down graded), in two layers compacted to a thickness of 230 mm including breaking of boulders to required size, filling interstices with selected sand & compacting to 85 % of original volume of stone stack for all lifts etc all complete.	CUM	506	0.303685079
2500 PILING WORKS				
2501	Mobilisation of two sets of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete. Payment Shall be made on pro rata basis.	LS	1	0.446046373
2502	Mobilisation of two sets of conventional DMC/RMC piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete. Payment Shall be made on pro rata basis.	LS	1	0.128718507
2503	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M30 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/payment shall be made separately), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following. Note: 1) No compansation shall be made towards additional qty. of cement beyond 400kg/Cum. for concrete mix design.			
b	Pile with 500 mm diameter and 18 m length below cut off level	Each	1008	21.52938074
2504	Extra over ST. No. 2503 for pile length more than the specified length of 18m below cut off level for the following.			
b	For 500 mm diameter pile	Rm	120	0.107567745
2505	Rebate on ST.No.2503 for pile length less than the specified length of 18m below cut off level for the following.			
b	For 500 mm diameter pile	Rm	120	0.081529932
2507	Conducting initial load test upto a maximum test load of 2.5 times the safe load capacity on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (Installation of pile shall be paid seperately) etc all complete as per specification, drawing and as directed by engineer in-charge for the following.			
a	For vertical compression test by cyclic load method			
ii	500 mm diameter pile	Each	2	0.103091795
b	For lateral load test			
ii	500 mm diameter pile	Each	2	0.030141055
c	For tension/uplift test			

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ii	500 mm diameter pile	Each	2	0.035665247
2508	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
a	For vertical compression test by maintained load method			
ii	500 mm diameter pile	Each	17	0.614595918
b	For lateral load test			
ii	500 mm diameter pile	Each	17	0.188929871
2509	Carrying out pile integrity test on 450mm/500mm/ 600mm/760mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	Each	35	0.018631099
Grand Total Weightage				100.000