

PREAMBLE FOR BOQ CUM RATE SCHEDULE	
1	Preamble for the Schedule of Quantities/BOQ Cum Rate Schedule:
1.1	Details of the items in the BOQ Cum Rate Schedule shall be read in conjunction with the Corresponding Consultants/ Customer specifications, drawings and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
1.2	The work shall be carried out as per construction drawings, specifications, the description of the items in this schedule and/or Engineer's instructions, Drawings enclosed with these documents are only indicative giving some idea of the type of work involved. The layout, sizes and details of the building, structures and foundations shown in tender drawings may vary at a large extent during actual construction. Final drawings will be issued progressively during the execution of the work.
1.3	Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
1.4	Unless specifically mentioned otherwise in the contract, the contractor shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant, temporary works, labour materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
1.5	The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, from existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
1.6	The quantities of the various items mentioned in the BOQ cum Rate Schedule are approximate and may vary up to any extent or be deleted altogether. The overall variation in contract value on execution shall be dealt as per GCC. Contractor has to obtain prior approval of BHEL/ Customer before procurement of bought out items/ building materials.
1.7	BHEL Engineer's decision shall be final and binding on the contractors regarding clarification of items in BOQ cum Rate schedule with respect to the other sections of the contract.
1.8	In case of any discrepancy between item description, relevant specification, clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the contractor has quoted for the more stringent requirement.

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
Part-I (CHP)	Balance Civil and Architectural works of Coal Handling Plant and Leveling & Grading works of CHP, AHP, LHP, GHP & other areas of FGD					
A	Construction and maintenance of labour colony having adequate no. of rest rooms along with toilets & fencing etc. as per drawing attached and TCC including associated civil and structural works on built, own and operate basis. Proposal for construction of these hutment is to be got approved from BHEL before organizing material and execution. One-time payment towards construction/development of labour colony of 03 Sets as per drawing attached and as above shall be paid by BHEL as per following payment terms: i) On receipt of material for each set of labour colony at site - 50% ii) On completion of installation of labour colony for each set - 20% iii) Handing over for accommodation of labour with all amenities for each set - 30% Land for labour colony shall be provided by BHEL free of cost as per availability outside project area within 5Km, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.	LS	1	₹ 1,50,00,000.00	₹ 1,50,00,000.00	Fixed Price
Continued...A	The labour colony shall be handed over for accommodation with all amenities within Three (03) Months from date of start. Date of start shall be decided jointly by BHEL/NTPC and Contractor based on availability of Land, Fronts, etc. If the contractor fails to maintain the required progress of work which results in delay in the completion of the labour colony as per above completion period, BHEL shall have the right to impose Penalty at the rate of Rs. 75,000/- per weeks of delay or part thereof beyond Three (03) Months of completion period for a maximum delay of Three (03) Months. In case, contractor fails to complete the labour colony within Six (06) Months Period, BHEL reserves the right to execute the work at risk and cost of contractor. Risk & Cost Amount= [(A-B) + (A x H/100)] Where, A= Value of Balance scope of Work new contract B= Value of Balance scope of Work of this contract being paid to the contractor. H = Overhead Factor to be taken as 5 In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).					
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, material, equipments etc complete 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	88300			0.5887686069
b	Depth exceeding 2 m but not exceeding 4 m	Cum	55806			0.4660305786
c	Depth exceeding 4 m but not exceeding 6 m	Cum	120			0.0012506657
d	Depth exceeding 6 m but not exceeding 8 m	Cum	100			0.0013011684
e	Depth exceeding 8 m but not exceeding 10 m	Cum	100			0.0015601456
f	Depth exceeding 10 m but not exceeding 15 m	Cum	100			0.0017931465
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	Cum	11703			0.2560626246
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), 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 1 Km, 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	804			0.0079631272
b	Depth exceeding 2 m but not exceeding 4 m	Cum	38489			0.4574519440
c	Depth exceeding 4 m but not exceeding 6 m	Cum	41035			0.5852589200
d	Depth exceeding 6 m but not exceeding 8 m	Cum	21383			0.3659658511
e	Depth exceeding 8 m but not exceeding 10 m	Cum	2090			0.0411896257
f	Depth exceeding 10 m but not exceeding 15 m	Cum	1000			0.0216528131
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
b	Depth exceeding 2 m but not exceeding 4 m	Cum	585			0.0135951562
c	Depth exceeding 4 m but not exceeding 6 m	Cum	500			0.0139502384
d	Depth exceeding 6 m but not exceeding 8 m	Cum	115			0.0038487688
e	Depth exceeding 8 m but not exceeding 10 m	Cum	100			0.0040179427
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, 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	150			0.0030586779
b	Depth exceeding 2 m but not exceeding 4 m	Cum	550			0.0134582913
c	Depth exceeding 4 m but not exceeding 6 m	Cum	960			0.0282138008
d	Depth exceeding 6 m but not exceeding 8 m	Cum	494			0.0174284380
e	Depth exceeding 8 m but not exceeding 10 m	Cum	350			0.0142058402
f	Depth exceeding 10 m but not exceeding 15 m	Cum	26928			1.2027740675

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A105	Extra over item no. 104 and 105 for breaking of the rock boulders into the size of 150mm - 700mm and stcked at designated location within a lead upto 1 Km including spreading / levelling of the rock pices etc. all complete.	CUM	15366			0.2779175039
106	Earth work in excavation upto any depth below ground level in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
b	Depth exceeding 2 m but not exceeding 4 m	Cum	150			0.0211874621
c	Depth exceeding 4 m but not exceeding 6 m	Cum	150			0.0254210763
d	Depth exceeding 6 m but not exceeding 8 m	Cum	150			0.0305091698
e	Depth exceeding 8 m but not exceeding 10 m	Cum	150			0.0350826119
f	Depth exceeding 10 m but not exceeding 15 m	Cum	150			0.0385879977
A106	Providing scaffolding pipes (6m Length) with clamps and barricading the excavated pit of required height as per safety norms. The scaffolding pipes with clamps will be under control of BHEL and can be used any where by BHEL during entire duration of contract period.	Nos	1036			0.0067735962
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 materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	Cum	194546			1.1407910449
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	Cum	2000			0.0130856566
Ac	Each layer compacted so as to achieve at least 98% maximum dry density as per IS-2720 (Part-VII)	Cum	2000			0.0139498352
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 materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	Cum	395			0.0010971722
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	Cum	100			0.0003024596
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.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	Cum	75000			0.0485571287
b	Carriage for disposal of serviceable/unserviceable material/ earth	Cum	78000			0.0504994139
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 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:					
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	Cum	100			0.0119866412
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	30480			3.6535282229
200	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.					
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	5388			0.4614452373
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	301			0.0257785851
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	119			0.0101915336
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	21			0.0017985059
204(A)	Concrete of grade M25 (1 part cement, 1 part sand, 2 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	267			0.0228667183
E204	Extra over item no. 201, 202, 203, 204, 204(A) & 212 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).	CUM	1885			0.2575979181

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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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	M 25 Grade	Cum	27077			2.3189592968
b	M 30 Grade	Cum	360			0.0308315303
c	M 35 Grade	Cum	2815			0.2410854386
206	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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	M 25 Grade	Cum	6338			0.5428062202
b	M 30 Grade	Cum	52			0.0044534433
c	M 35 Grade	Cum	75			0.0064232355
E206	Extra over item no. A205, 206, 211 & 213 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
Aa	M 20 Grade	CUM	15			0.0022285821
a	M 25 Grade	CUM	10032			1.5405404009
b	M 30 Grade	CUM	228			0.0355054564
c	M 35 Grade	CUM	867			0.1365346972
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/PD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over/without vibration isolation system but including TG foundation Columns with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% 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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	M 30 Grade	Cum	10			0.0009172805
b	M 35 Grade	Cum	260			0.0238492917
E207	Extra over item no. 207 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
a	M 30 Grade	CUM	3			0.0004968034
b	M 35 Grade	CUM	78			0.0131752252
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). (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	M 20	Cum	49			0.0041965139
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 all level or thickness, drains etc complete as per following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	01:02:04	Cum	111			0.0095063885
b	01:01:02	Cum	75			0.0064232355
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, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with following 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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
a	M25	Cum	25			0.0051787215
b	M30	Cum	349			0.0722949516
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 with high performance PCE- based water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% cum water proofing cement additives 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. Watertightness is to be ensured including structural grouting if required. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
b	M30 Grade	Cum	1			0.0000934111
Ac	M35 Grade	Cum	29293			2.7362921844
E214	Extra over item no. 214 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
Ac	M35 Grade	CUM	8788			1.8804017349

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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	421			0.0284248461
b	Reinforced cement concrete of all grades	Cum	590			0.0587026598
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	69			0.0002903319
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	47			0.0000152146
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	114			0.0020589087
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	Sqm	226			0.0017702754
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. (RMC shall not be provided for this item however, cement shall be provided by BHEL free of cost)	Cum	380			0.0823572219
221	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 sloped surface of canal lining or channel cast in alternate panels with provision of expansion gap/construction joints 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, compaction with special equipments, etc all complete as per specification & drawing for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)					
b	M25 Grade	Cum	117			0.0109291020
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	Sqm	120			0.0190473200
300	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	117721			4.1989274249
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	20798			0.9087822499
B302	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301, 302 & A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	5143			0.5939410309
C302	One time payment shall be made for mobilization of complete set (Minimum 03 Sets) of shuttering and staging materials required for casting of Hopper (Track Hopper) and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.	Ls	1			0.2837838157
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	66			0.0010253745
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	123			0.0032247394
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	181			0.0084947321
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	238			0.0175482053
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	126			0.0134174337
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	119			0.0167317037
400	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:					
402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	Mt	114			0.5950330732
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming 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. (TMT steel shall be issued by BHEL free of cost)	Mt	8392			5.4618158988

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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	Nos.	114			0.0029961373
b	16mm Reinforcement bar	Nos.	114			0.0047082063
c	20mm Reinforcement bar	Nos.	114			0.0065974381
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR conforming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).					
a	12mm dia	Nos.	40			0.0001786764
b	16mm dia	Nos.	40			0.0002485802
c	20mm dia	Nos.	40			0.0003133231
d	25mm dia	Nos.	40			0.0004376017
e	28mm dia	Nos.	40			0.0006732334
f	32mm dia	Nos.	38			0.0007379808
g	36mm dia	Nos.	21			0.0005288165
h	40mm dia	Nos.	15			0.0004650855
500	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. (Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same).					
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	2730			0.0231502073
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	3459			0.2377986175
A507	Providing and laying wearing course consisting of 20 mm thick plain cement mortar 1:4 (1 cement : 4 sand) 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. (Cement shall be issued by BHEL free of cost as per TCC)	Sqm	3459			0.0770260869
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 (already placed and paid in other item) during green stage 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 underbed(as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making)	Sqm	3459			0.1187095077
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	62652			0.6124099035
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	Kg	204			0.0015054714
600	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.					
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	Sqm	217			0.0081755321
b	20 mm wide joints.	Sqm	217			0.0120946828
c	25 mm wide joints	Sqm	217			0.0146934090
d	50 mm wide joints	Sqm	126			0.0164108511
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	64			0.0022161750
b	20 mm wide joints.	Sqm	64			0.0035316527
c	25 mm wide joints	Sqm	64			0.0038732596
d	50 mm wide joints	Sqm	64			0.0078533524
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	25			0.0006716205
b	50mmX25mm	Rm	25			0.0012428868
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.					
a	10mm X 40mm	Rm	24			0.0000681413
b	12mm X 25mm	Rm	23			0.0000596164
c	20mmX25mm	Rm	11			0.0000346178

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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	5			0.0000129601
b	20 mm wide joints.	Sqm	5			0.0000197569
c	25 mm wide joints	Sqm	5			0.0000249986
d	50 mm wide joints	Sqm	5			0.0000478083
606	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanised as needed.	Rm	181			0.0015417896
607	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer's recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc all complete.	Sqm	41			0.0004327517
608	Supplying and filling in position hot applied bitumin sealing compund (Grade B) confirming 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	11			0.0000312194
b	12mm X 25mm	Rm	16			0.0000414723
c	20mmX25mm	Rm	11			0.0000346178
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
d	230 mm wide and 6 mm thick	Rm	6088			0.0766593222
611	Providing and fixing copper water stops in joints of deep underground structure all complete for the following:					
Ac	600 mm wide and 22 guage (0.7 mm) thick	Rm	5185			0.8266722719
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	26			0.0003466391
700	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.					
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. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	25			0.1653971438
702	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. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	25			0.1934901068
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.					
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	Mt	104			0.1459302470
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, stiffner plates, protective tape, pipe sleeves, templates etc.	Mt	92			0.1388472929
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. Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%					
a	MS pipes of all diameters	Kg	84			0.0004295561
b	PVC pipes / conduits of all diameters	Kg	76			0.0018498550
c	UPVC pipes / conduits of all diameters	Kg	66			0.0018286513
d	Expansion anchor fasteners (galvanised) of HILTI make(HRD Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
ii	10mm Dia	Nos	10			0.0000381948
iii	12mm Dia	Nos	10			0.0000433731
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	HST3 M8	Nos	65			0.0007026787
ii	HST3 M10	Nos	30			0.0004719027
iii	HST3 M12	Nos	30			0.0007593229
iv	HST3 M16	Nos	5			0.0002262457
f	Chemical Expansion fasteners (galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:					
i	HAS-E5.8 M8	Nos	49			0.0011038481
ii	HAS-E5.8 M10	Nos	53			0.0013963907
iii	HAS-E5.8 M12	Nos	9			0.0002936341
iv	HAS-E5.8 M16	Nos	9			0.0004905549
v	HAS-E5.8 M20	Nos	9			0.0008156509

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
vi	HAS-E5.8 M24	Nos	1			0.0001218939
707	Providing, laying and fixing rails (52kg/rm and/or 60kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	54			0.3168735918
A707	Providing, laying and fixing rails(60kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	55			0.3211748784
800	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.					
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). (Cement shall be issued by BHEL free of cost as per TCC)	Cum	150			0.1989309532
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	30			0.0900748735
A807	Providing on the outer surface of walls, frames, rafts and roof slabs coming in contact with earth, Polymer modified cementitious coating in two layers as specified and as per manufacturer's specifications shall be provided directly on the concrete surface : 50 mm thick P. C. C. (1 : 2 : 4 with 10 mm nominal size stone aggregates) shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers (slurry mix application) as per manufacturer's specification. 50 mm thick P. C. C. (1 : 2 : 4) with 10 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft. (Cement will be provide by BHEL as per TCC)	Sqm	26869			0.4477911340
A808	Providing Chemical Injection Grouting with Minimum, 12 mm dia (NB) threaded nozzle of suitable length over the surface and along the construction joint line in a grid pattern at a spacing not exceeding 1.5m c/c before concreting operation After the nozzles are fully set, neat cement slurry admixed with water soluble non-shrink polymer / monomer based chemical shall be injected through the net - work of nozzles with low pressure grout pumps at a pressure of about 2.0 Kg/Sqcm. Cement slurry shall be prepared by mixing cement with non-shrink polymer/monomer @ 500 gm/50 kg bag of cement and water, ensuring that Water: Cement ratio does not exceed 2 (by weight). Wetter the structure, lesser should be the water cement ratio. The property of the polymer/monomer should be such that when it is mixed with water @ 0.5% by weight of water, the viscosity of the resultant solution (water and polymer/monomer) should not be more than 1.2 centipoises. Plasticizing agent shall be added wherever required. The grouting shall be started at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting operation, the nozzles shall be sealed properly to the satisfaction of the Engineer.	Sqm	17532			0.6720216185
900	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.					
904	Providing and fixing single or double steel door shutters with 45 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, air tight, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	Sqm	35			0.0173733202
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) Payment Terms: a) On receipt of material at site - 60% b) Execution as per item description - 40%	Kg	400			0.0167041131
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	2104			0.4241692717
b	fixed type	Sqm	708			0.1223432283

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic 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 seperately).Weight of aluminium section only shall be measure. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%.	Kg	150			0.0062640424
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).					
b	Mechanically Operated	Sqm	96			0.0341622244
c	Electrically operated	Sqm	5			0.0043200292
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.					
Ah	6 mm thick clear toughened glass conforming to IS 5437	Sqm	2253			0.3675320351
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	Sqm	137			0.0333768286
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	Sqm	20			0.0021504645
1000	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.(Cement shall be issued by BHEL free of cost as per TCC)					
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.(Cement shall be issued by BHEL free of cost as per TCC)					
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	835			0.2988585433
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. (Cement shall be issued by BHEL free of cost as per TCC)					
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	1541			0.6920016576
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.(Cement shall be issued by BHEL free of cost as per TCC)					
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	147			0.0081075682
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	117			0.0151553503
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	117			0.0015905294
1100	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.					
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, before starting of masonry work.					
b	50mm thick	Sqm	2674			0.0557380035
1200	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.					
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	7092			0.1317582240
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	Sqm	10696			0.1466146658
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	Sqm	2668			0.0350600625

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1300	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.					
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	Sqm	5			0.0000114250
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	13364			0.0794370434
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	2400			0.0201914135
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	5			0.0000341138
1317	Providing and applying 2 mm thick white cement 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	2025			0.0131080919
A1319	Providing and applying two or more coats of Premium Acrylic Smooth Paint with Silicone additives weather coat 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 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 repellent and extremely durable with color fastness as per specification. (The sealant should have VOC content limit less than 250 grams per litre as prescribed by GRIHA. All necessary documentation (certificates, manufacturer declarations) to be provided by the contractor for green building documentation).	Sqm	7092			0.0803400816
1400	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. (Cement shall be issued by BHEL free of cost as per TCC)					
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):(Cement shall be issued by BHEL free of cost as per TCC)	Sqm	60124			2.1951276716
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	355			0.0349063547
1407	Providing and laying polished Kota stone 14mm to 16mm thk in flooring. Under bed shall average 35mm 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	50			0.0046910910
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	50			0.0054287216
1411	Marble stone Flooring laid in 50mm overall thickness with 14 -16mm thick marble slabs (grade -I) with minium 35mm 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	15			0.0026016944
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. (Cement shall be issued by BHEL free of cost as per TCC) Payment Terms: a) On receipt of material site - 50% b) Execution as per item description - 50%	Sqm	15			0.0030868423
1413	Providing and laying 14 to 16mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	Sqm	30			0.0055478392
1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, 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					
a	7mm thick tiles In flooring	Sqm	200			0.0128140708
c	7mm thick tiles In skirting and dado upto specific height	Sqm	120			0.0082217645

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
1417	Providing and laying digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer Simpola, 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					
b	10mm thick tiles In flooring	Sqm	125			0.0109947624
d	10mm thick tiles In skirting and dado upto specific height	Sqm	225			0.0207904576
1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' 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, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes.					
b	600X600 mm	Sqm	450			0.0385533810
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.					
b	600X600 mm	Sqm	353			0.0223117991
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
b	38mm thick	Sqm	264			0.0916614590
1428	Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete.	Sqm	150			0.0045923063
1600	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.					
1603	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 including 50mm thick mineral wool insulation (density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete.	Sqm	394			0.0677544171
1700	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.					
1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.	Rm	454			0.0499651703
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	35			0.0026572788
b	150 mm Dia	Rm	135			0.0164740571
c	200 mm Dia	Rm	35			0.0065977791
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	45			0.0046358522
b	150 mm Dia	Rm	45			0.0061662945
c	200 mm Dia	Rm	45			0.0097189138
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.					
a	110 mm Dia	Rm	90			0.0032553436
b	160 mm Dia	Rm	90			0.0050052435
c	200 mm Dia	Rm	90			0.0071940583
1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.					
Ac	273mm OD and 4mm thick	Rm	3913			0.8554972350
1800	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.					
B1802	Providing and Filling in trenches, plinths, area paving, grade slab, other underground structures, etc. with graded stone aggregate of size range 40 mm downwards nominal size rammed, consolidated in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per drawings/specifications. Payment shall be made for the measurement of the volume of the compacted fill.	Cum	474			0.0542491440
C1801	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 275 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with well graded selected sand and compacting to 90 % 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	8294			0.9492455700
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	1665			0.0172455740
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	120			0.0843070642
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	Each	60			0.0424914275
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).	No	27			0.0148459775
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	Each	75			0.1266780752

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	220			0.0015665232
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.					
a	Steel scrap / metal scrap	Mt	25			0.0009381952
b	Debris & Other waste materials.	Cum	50			0.0003518232
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	Sqm	200			0.0000647428
1833	Supplying, stacking and laying 150 mm thick sand filter of approved quality behind retaining wall including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	Cum	1050			0.1485470857
1834	Supplying, stacking and laying 150 mm thick gravel filter of approved quality behind retaining wall including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	Cum	1050			0.1797212231
2000	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.					
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	663			0.0980938673
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. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	30			0.2180424515
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	Mt	4			0.0319009461
2100	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.					
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.	Nos	74			0.0036084340
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	Nos	58			0.0018284656
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.	Nos	110			0.0044718524
b	50mm nominal bore.	Nos	80			0.0068151860
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive bituminous 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	345			0.0104072356
b	20 mm nominal bore.	Rm	550			0.0181578317
c	25 mm nominal bore.	Rm	505			0.0186664777
d	50 mm nominal bore.	Rm	270			0.0143670349
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	345			0.0081515496
b	20 mm nominal bore.	Rm	550			0.0145618106
c	25 mm nominal bore.	Rm	505			0.0153646765
Ac	32mm nominal bore.	Rm	270			0.0097004702
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.	Nos	45			0.0033720420
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	Nos	45			0.0022604985
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	Nos	45			0.0027673935
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	Nos	45			0.0022637529
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	Nos	45			0.0019663045
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.	Nos	45			0.0018585025
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	Nos	45			0.0013399953
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	Nos	11			0.0002511953

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent conforming to IS:12701 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	500 litres capacity	Nos	5			0.0013241379
b	1000 litres capacity	Nos	5			0.0026482758
2200	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.					
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	20			0.0124770509
b	Colored	Each	10			0.0069349602
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	4			0.0014479701
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	22			0.0087465616
b	Wall mounted	Each	22			0.0120395759
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	13			0.0051738087
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	45			0.0388033667
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	35			0.0007952569
b	110mm dia pipes	Rm	35			0.0010648786
c	160mm dia pipes	Rm	35			0.0016516797
d	200mm dia pipes	Rm	35			0.0020345811
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. (Cement shall be issued by BHEL free of cost as per TCC)					
a	200mm dia	Rm	20			0.0010344454
b	300mm dia	Rm	20			0.0017840684
c	450mm dia	Rm	20			0.0029803594
d	600mm dia	Rm	20			0.0040808379
e	900mm dia	Rm	15			0.0053861952
2400	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:					
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, debris etc. within a lead upto 1 km etc. all complete.	Cum	6105			0.0260819087
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	2920			0.1434687473
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	Cum	60			0.0054515313
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, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	Cum	30			0.0039553036
2405	Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size(IRC 19 - grading -1), stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	Cum	1913			0.3123207769
B2405	Providing & laying Granular base/sub-base course in layers of required thickness with stone aggregate size as per IRC 19 - grading-1 or 2, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	Cum	10			0.0017122177
2406	Providing & Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone(IRC 19 -grading -1) screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of blinding material moorum etc all complete.	Cum	20			0.0032652509

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A2410	Providing & laying 40mm bitumen mastic wearing course over concrete pavement with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen fine grained hard stone chipping of approved size at the rate of 0.005 precoated cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete as per specification, drawings and as per direction of engineer-in-charge. (Considering bitumen using 10.2% as per MORTH specification).	Sqm	20000			0.7557171163
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. (Cement shall be issued by BHEL free of cost as per TCC)	Rm	3000			0.0642555966
C2414	Providing & laying edge protection on edges with M-25 GRADE PCC BLOCKS etc all complete. (Cement shall be issued by BHEL free of cost as per TCC)	Rm	100			0.0005678822
C2415	Supply and laying 200 mm 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 (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete. (Cement for mortar shall be issued by BHEL free of cost as per TCC)	Rm	10			0.0004931745
2416	Dismantling of existing concrete road or bitumen road or pavement, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	Sqm	50			0.0003394967
	Providing and placing concrete work in road 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:					
2418	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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	1122			0.0916247675
A2419	Providing and laying cement concrete of grade M35 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. Concrete pavement of the road shall be done with fully mechanized paver fitted with electronic sensors (Excluding the cost of reinforcement and dowel bar) (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	1594			0.1301692205
2420	Supplying and filling sand preparation for shoulder/road sub base/subgrade in layers of 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	10			0.0005363748
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. DLC shall be laid by a mechanical paver and compacted by vibratory rollers. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency as per TCC)	Cum	1080			0.0881949523
REINFORCEMENT						
A2423	Transportation, 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. (TMT steel shall be issued by BHEL free of cost)	Mt	5			0.0031029330
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	10			0.0487478436
MISCELLANEOUS						
A2425	Providing & installation of bitumen impregnated fibre board of specified thickness 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.					
a	12 mm wide joints.	Sqm	1			0.0000359426
b	20 mm wide joints.	Sqm	1			0.0000531652
c	25 mm wide joints	Sqm	1			0.0000645700
d	50 mm wide joints	Sqm	1			0.0001241864
A2425c	Providing & installation of bitumen impregnated fibre board of 25 mm thickness 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.	Sqm	1			0.0000645700
A2426	Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming 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.					
a	10mm X 40mm	Rm	10			0.0000283970
b	12mm X 25mm	Rm	20			0.0000518404
c	20mmX25mm	Rm	20			0.0000629572
A2427	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.					
a	12 mm wide joints.	Rm	10			0.0000259202
b	20 mm wide joints.	Rm	20			0.0000790277
c	25 mm wide joints	Rm	20			0.0000999943
d	50 mm wide joints	Rm	10			0.0000956742
A2428	Providing & laying 75 mm thick interlocking precast designer concrete blocks of M35 grade of approved colour and pattern as per specification and recommendation of manufacturer.	Sqm	3800			0.1829525474

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
B2429	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	3800			0.0103203771
C2429	Providing and laying 100mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	Sqm	100			0.0005493349
A2430	Providing and laying impermeable 125 micron thick polythene sheet laid flat without creases conforming to relevant BS code or equivalent international code etc all complete as per specification, drawing and as directed by Engineer.	Sqm	3750			0.0046293433
C2430	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	5			0.0015440361
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in charge.					
2602	Earth work in stripping of top soil upto a maximum depth of 0.30 m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm 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.	Sq,M	42527			0.0605534145
2603	Earth work in excavation upto any depth below ground level in all types of soil including ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), shoring & strutting (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	150615			0.8210527079
2604	Earth work in excavation upto any depth below ground level in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc (but does not require chiselling or blasting) including setting out, levelling, dewatering (wherever required), 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 as per specification, drawing and as directed by the engineer-in-charge.	Cum	748			0.0072487179
2605	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	Cum	397			0.0073269260
A2608	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at 98% maximum dry density as per IS-2720 (Part-VIII) with sandy gravel or crushed rock as blanket material conforming to RDSO guidelines, specifications 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, tesing etc all complete as per specification, drawing and as directed by the engineer-in-charge.	Cum	45000			2.1244315219
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with surplus stacked soil/soft rock and compacted as specified including re-excavation of stacked earth, all lifts, dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer-in-charge.	Cum	82395			0.5653890895
A2610	Extra over ST No. 2602 to 2609 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1 km.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	Cum	134320			0.0830445844
b	Carriage for disposal of serviceable/ unserviceable material/ earth as per specification	Cum	16368			0.0101196676
A2612	Providing and laying 300mm thick stone pitching including caulking with 1 cement: 4 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	755			0.1339596990
3101	GUNITING/SHOTCRETING					
	Shotcreting (Guniting) specified concrete surfaces as per the following specifications including all materials. Labour, tools and plants, scaffolding etc all complete as per the directions of Engineer in charge, :					
	i. Fabricating and fixing in position 6mm M S bars at 750mm c/c including connecting to the lugs for fastening					
	ii. Fixing wire fabric conforming to IS:1566 as reinforcement with 3mm diameter spaced at 50mm c/c both ways electrically cross welded including securely tying to the 6mm MS bars by maintaining 100mm overlap for adjacent sheets					
	iii. Fine aggregate shall consist of natural sand or crushed stone from a known source and shall be strong, hard, coarse, sharp, chemically inert, clean and free from any coating. It shall be free from clay, coal or coal residue, organic or any other impurities that may impair the strength or durability of the concrete and shall conform to IS: 383. The fineness modulus shall be preferably between 2.5 and 3.3. Any other value can be used, with prior approval of the Engineer. Fine aggregate (Sand) shall be well graded and particles shall range in size within limits. The Engineer may approve the use of any other grading as per requirement or as per IS: 9012.					

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
	iv. The surface after the placement of reinforcement and / or welded mesh and not more than six hours prior to the application of concrete, shall be thoroughly cleaned of all loose materials and dirt. The Contractor shall properly prepare the surfaces, reinforcement and / or welded mesh to receive the shotcrete. Cleaned surfaces shall be wetted not more than hour prior to shotcreting.					
	v. The mix as placed on surface shall be one part cement to three parts approved sand by mass. Cement and sand shall be dry mixed; no water shall be added after mixing and before using in the gun. The quantity of water when added shall be only that which is sufficient to hydrate the cement. For average atmospheric conditions, the water cement ratio for shotcrete in place shall be between 0.35 and 0.5 by mass. Suitable admixture shall be used wherever required.					
	vi. A uniform pressure of not less than 25 Kgf / cm ² at the nozzle shall be maintained. Necessary adjustments shall be made to ensure this pressure, taking into account the length of hose and height of the place to be shotcreted, above location of the machine.					
	vii. The application shall proceed in an upward direction. Beams, stiffeners and intermediate walls, if any, shall be wrapped with wire fabric and completely covered with shotcreting. All rebound shall be removed from the area of application as the work progresses and such rebound material shall not be reused.					
	viii. As soon as the freshly shotcreted surface shows the first dry patches, a fine spray of water shall be applied to keep too moist. After the surface has hardened, it shall be kept continuously moist for minimum seven days. If there is extreme heat, especially when accompanied by hot winds, the shotcreted surface, immediately upon completion, shall be covered with burlap or similar covering, which must be kept continuously moist for 14 days after shotcreting. The temperature of the lining shall not be permitted to exceed 38oC during placing and curing.					
	Note: 6mm MS Reinforcement and welded wire mesh as specified shall be used for thickness of Shotcreting above 50mm					
a	a. Shotcreting for thickness 50mm and above of with 6mm MS Reinforcement and welded wire mesh as specified	Sqm	4812			0.4716678781
b	b. Shotcreting for thickness 25mm without 6mm MS Reinforcement and welded wire mesh as specified	Sqm	50			0.0035646001
	TOTAL PART-I				₹ 1,50,00,000	51.4373297940
Part-II (MPH-1)	Balance Civil and Architecture Works of Power House area (except TG Foundation), Transformer Yard, DG Foundation, ACW Pump House, CST Pump House, CST Tank, Rail Road, ACW Pipe, CW Pipe (within Transformer Yard), Oil Separator Pit, Bus-Ducts Foundation, Transformer Foundations, Cable & Pipe Rack, Fire Fighting Works, Leveling & Grading and Other Miscellaneous Foundations/Structures etc. within Power House area and Transformer Yard area for Unit-1					
A	Construction and maintenance of labour colony having adequate no. of rest rooms along with toilets & fencing etc. as per drawing attached and TCC including associated civil and structural works on built, own and operate basis. Proposal for construction of these hutment is to be got approved from BHEL before organizing material and execution. One-time payment towards construction/development of labour colony of 03 Sets as per drawing attached and as above shall be paid by BHEL as per following payment terms: i) On receipt of material for each set of labour colony at site - 50% ii) On completion of installation of labour colony for each set - 20% iii) Handing over for accommodation of labour with all amenities for each set - 30% Land for labour colony shall be provided by BHEL free of cost as per availability outside project area within 5Km, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.	LS	1	₹ 1,50,00,000.00	₹ 1,50,00,000.00	Fixed Price
Continued.... A	The labour colony shall be handed over for accommodation with all amenities within Three (03) Months from date of start. Date of start shall be decided jointly by BHEL/NTPC and Contractor based on availability of Land, Fronts, etc. If the contractor fails to maintain the required progress of work which results in delay in the completion of the labour colony as per above completion period, BHEL shall have the right to impose Penalty at the rate of Rs. 75,000/- per weeks of delay or part thereof beyond Three (03) Months of completion period for a maximum delay of Three (03) Months. In case, contractor fails to complete the labour colony within Six (06) Months Period, BHEL reserves the right to execute the work at risk and cost of contractor. Risk & Cost Amount= [(A-B) + (A x H/100)] Where, A= Value of Balance scope of Work new contract B= Value of Balance scope of Work of this contract being paid to the contractor. H = Overhead Factor to be taken as 5 In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).					

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
C	Handling at site stores / storage yard, transporting to site, inspection, preassembly, erection, alignment, welding, NDT, fixing of supports, water flushing, hydro testing, surface finish, supply & application of primer & finish paints/ Anti corrosive / Wrapping and coating as applicable including labelling & flow direction on the piping, pre-commissioning for piping and its associated items, etc. as directed by Engineer-in-Charge. (Pipe Size - 3700NB/ 3200NB/ 2300NB/ 800NB/ 250NB/ 200NB/ 150NB/ 100 NB/ 25NB) 1. Pipe upto and including 150 NB shall be Carbon Steel, ERW IS:1239 (Heavy Duty) 2. Pipe 200 NB & above shall be Carbon Steel and Welded as per IS-3589 fabricated from Carbon Steel plates as per IS:2062 Gr-B Design Pressure for CW Piping: 5 Kg/ Sq.cm Design Pressure for ACW Piping: 7.5 Kg/ Sq.cm Payment Term: i. Pre-Assembly: 25% ii. Erection/ Alignment: 10% iii. Welding: 25% iv. NDT: 15% v. Hydro Test: 10% vi. Painting & Wrapping & coating: 15%	MT	567			0.8490179853
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, matrial, equipments etc complete 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	34140			0.2276396805
b	Depth exceeding 2 m but not exceeding 4 m	CUM	14694			0.1227043415
c	Depth exceeding 4 m but not exceeding 6 m	CUM	10780			0.1123514730
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	1200			0.0262561010
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), 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 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
a	Depth from ground level but not exceeding 2 m	CUM	500			0.0049521935
b	Depth exceeding 2 m but not exceeding 4 m	CUM	4286			0.0509402435
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5095			0.0726670939
d	Depth exceeding 6 m but not exceeding 8 m	CUM	566			0.0096869790
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100			0.0027900477
d	Depth exceeding 6 m but not exceeding 8 m	CUM	300			0.0100402664
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
d	Depth exceeding 6 m but not exceeding 8 m	CUM	2450			0.0864365852
e	Depth exceeding 8 m but not exceeding 10 m	CUM	279			0.0113240840
A105	Extra over item no. 104 and 105 for breaking of the rock boulders into the size of 150mm - 700mm and stcked at designated location within a lead upto 1 Km including spreading / levelling of the rock pices etc. all complete.	CUM	1565			0.0282963644
106	Earth work in excavation upto any depth below ground level in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
d	Depth exceeding 6 m but not exceeding 8 m	CUM	850			0.1728852953
e	Depth exceeding 8 m but not exceeding 10 m	CUM	31			0.0072504065
A106	Providing scaffolding pipes (6m Length) with clamps and barricading the excavated pit of required height as per safety norms. The scaffolding pipes with clamps will be under control of BHEL and can be used any where by BHEL during entire duration of contract period.	Nos	1500			0.0098073304
A107	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 300 mm compacted thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	8618			0.0530006452
A108	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 300mm compacted thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	26136			0.0761302926

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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.					
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	25760			0.0166778484
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm compacted 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	32807			3.9324094160
B111	Supplying and filling clean and well graded sand conforming to IS 383 with grading Zone I to III upto any depth under floors, around foundations, plinths, tank foundation etc. in layers not exceeding 300mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by mechanical means, dressing, royalty (if any) etc. all complete.	CUM	742			0.0889408773
200	CONCRETE WORK: Placing concrete work including cost of labour, (unless otherwise specified in BOQ/contract specification) and transportation, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
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	1520			0.1301815121
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	285			0.0244082948
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	433			0.0370834795
C204	Design Mix Concrete of grade M20 as under floors, paving, plinth protection, pipe encasing etc complete with 12 mm nominal size graded aggregate at any depth below finished floor level.	CUM	1186			0.1016095047
E204	Extra over item no. 201, 202, 204, C204 & 212 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).	CUM	1111			0.1518636500
A205	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, pipe encasement 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.					
Aa	M 20 Grade	CUM	11			0.0009420745
a	M 25 Grade	CUM	5762			0.4934863914
b	M 30 Grade	CUM	6838			0.5856064649
206	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	M 25 Grade	CUM	3731			0.3195345547
E206	Extra over item no. A205, 206, 211 & 213 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
Aa	M 20 Grade	CUM	18			0.0027743573
a	M 25 Grade	CUM	2981			0.4577912976
b	M 30 Grade	CUM	2183			0.3395530495
207	Design Mix cement concrete confirming 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 at all elevations below/above finished floor level except TG deck and top decks supported over/without 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					
a	M 30 Grade	CUM	936			0.0858574501
b	M 35 Grade	CUM	785			0.0720065153
E207	Extra over item no. 207 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
a	M 30 Grade	CUM	281			0.0465007948
b	M 35 Grade	CUM	236			0.0397790453
210	Extra over ST Nos. 205 to 208 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	100			0.0022527513
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)					
a	M 20	CUM	50			0.0042821570
b	M 25 -(Design mix)	CUM	215			0.0184132751
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following.					
a	01:02:04	CUM	279			0.0238944360
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, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with following 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	M25	CUM	229			0.0474370886
b	M30	CUM	440			0.0911454977

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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 confirming 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. Watertightness is to be ensured including structural grouting if required.					
b	M30	CUM	500			0.0467055642
E214	Extra over item no. 214 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
b	M 30 Grade	CUM	150			0.0314670930
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	36			0.0024407558
b	Reinforced cement concrete of all grades	CUM	150			0.0149244050
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	500			0.0021038542
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	50			0.0000161857
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			0.0018060602
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	100			0.0007833077
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. (RMC shall not be provided for this item however, cement shall be provided by BHEL free of cost)	CUM	300			0.0650188594
222	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	200			0.0007250737
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	150			0.0238091500
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing 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	34145			1.2178825260
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	3432			0.1499634908
A302	Fairface form work with good quality water proof ply wood with film face of required thickness and smooth surface above finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	2244			0.1029918957
B302	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301, 302 & A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	1633			0.1885875371
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	80			0.0012428782
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	95			0.0024906524
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	195			0.0091517832
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	215			0.0158523704
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	145			0.0154406975
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	20			0.0028120510
A305	Extra over item no.301 and 302 for curved form work for foundations, footings, Columns, beams, walls, trenches, domes, arches etc as per specification.					
a	Extra for Curve Shuttering for Item No. 301/301A	SQM	200			0.0016054381
b	Extra for Curve Shuttering for Item No. 302/ 302A	SQM	200			0.0019290371
400	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:					

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming 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. (TMT steel shall be issued by BHEL free of cost)	MT	1542			1.0036373082
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	Nos.	20			0.0005256381
b	16mm Reinforcement bar	Nos.	20			0.0008260011
c	20mm Reinforcement bar	Nos.	20			0.0011574453
d	25mm Reinforcement bar	Nos.	20			0.0015717418
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).					
a	12mm dia	Nos.	20			0.0000893382
b	16mm dia	Nos.	50			0.0003107253
c	20mm dia	Nos.	40			0.0003133231
d	25mm dia	Nos.	40			0.0004376017
e	28mm dia	Nos.	30			0.0005049250
f	32mm dia	Nos.	20			0.0003884109
g	36mm dia	Nos.	10			0.0002518174
500	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.(Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same).					
502	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc all complete. (Cement shall be issued by BHEL free of cost as per TCC)	SQM	6389			0.0541782690
A506	Providing and applying PU based high solid content (minimum 90%) of approved make 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.The coating shall have high viscosity, min. 400% elongation and forming a perfectly smooth permanently flexible seamless membrane which should have good adhesion to roof substrates.The cured film should have a very low water absorption rate (0.5% maximum at ambient temperature after 7 days), reinforcing layer of polyscrim cloth (non woven polyscrim cloth of 100% polyester with min. weight of 40gsm/sqm) or geo-textile non woven polyester (120-150 gsm), polymerised mastic base preparation, primer, making of fillets, cleaning & preparation of surface, vacuum removal of loose sand, expansion joints & sealing at suitable intervals, application by using a pneumatic machine as per manufactures recommendations, etc. all complete as per specifications, drawings and direction of engineer in charge. The application of waterproofing treatment shall be carried by authorised applicator of approved Manufacturer of Waterproofing materials.	SQM	6389			0.4392296522
A507	Providing and laying wearing course consisting of 20 mm thick plain cement mortar 1:4 (1 cement : 4 sand)) 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. (Cement shall be issued by BHEL free of cost as per TCC)	SQM	6389			0.1422722374
A510	Providing and laying cement concrete chequered roof / floor tiles of 22 mm thickness and size min. 200x200 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 underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making).	SQM	1534			0.0894714380
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	35108			0.3431731931
A511	Providing and applying two coats of bitumen paint of minimum 150 micron DFT with suitable primer, conforming to IS 9862 with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces including surface preparation etc. all complete.	SQM	100			0.0011134155
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	1000			0.0073797620
A514	Providing and applying two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT followed by epoxy phenolic coating (solid by volume minimum 63%) of minimum 400 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique on beams,wall, column, slab, basin floor, basin wall, fill supporting beams and columns, internal surfaces of fan stack, underside of fan deck roof slab etc on concrete surfaces as per IS 9862 and IS 3384 complete all as per specifications & drawings.	SQM	214			0.0095170313
B514	Providing and applying Food grade epoxy coating complying to FDA Title 21, Part 175.300 of minimum 400 micron DFT over absolutely dry, clean and dust free surface of water retaining structures storing drinking water. This coat shall be applied by airless spray technique and shall conform to as per IS 9862, complete as per specifications & drawings.	SQM	100			0.0050557014

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
517	Providing and laying foam concrete blocks in the toilets/sunken slab etc. after water proofing complete as directed by engineer in charge.	CUM	20			0.0028715983
A517	Providing and laying Cinder / foam concrete blocks in the toilets/sunken slab etc. after water proofing complete as directed by engineer in charge.	CUM	20			0.0028715983
A518	Providing and laying water proofing treatment for wet areas like toilets,kitchen,pantry of sunken slab etc. material like with three coats of Acrylic Polymer Modified Flexible Cementitious Waterproofing Coating material like Danocrete I-protect flex or equivalent make applied @ 0.70 to 0.8 0 Kg/m2 per coat, while embedding 34 gsm polyester scrim armor Armadura IP 34 or equivalent as reinforcing layer between first and second coat, the waterproofing coat applied by stiff bristle brush to build total thickness of 1.3 to 1.5 mm in three coats including reinforcing layer, while maintaining a gap of 4 to 8 hours between the coats all complete with water ponding test as per IS Code and as directed by engineer in charge	SQM	265			0.0116651331
A519	Providing and laying an angular fillet around parapet wall junction at roof level of min.50mm x 50mm, shall be trowel applied in cement-sand mortar in 1:3 proportion. A latex based bonding agent should be added (10% by weight of cement) and also a glass cloth must be inserted while the angle fillet is being constructed.	RM	455			0.0184972075
600	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.					
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	SQM	50			0.0018837632
b	20 mm wide joints.	SQM	83			0.0046260768
c	25 mm wide joints	SQM	398			0.0269492018
d	50 mm wide joints	SQM	474			0.0617360588
A601	Supplying & installation of engineering grade polystyrene foam backer rod (circular cross section) at 12 mm depth with minimum density of 22 kg/cum and compressive strength of 0.40 kg/sqm having dia. 25% more than the expansion joint width as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	SQM	50			0.0027058935
b	20 mm wide joints.	SQM	50			0.0037804576
c	25 mm wide joints	SQM	350			0.0349143324
Ad	50 mm wide joints	SQM	100			0.0153290190
A602	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	12mm X 25mm	RM	150			0.0022332823
b	20mmX25mm	RM	250			0.0055670777
c	25mmX25mm	RM	1191			0.0319960029
d	50mmX25mm	RM	50			0.0024857736
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	50			0.0013432411
b	50mmX25mm	RM	50			0.0024857736
c	20mmX25mm	RM	50			0.0011134155
A603	Providing and applying polysulphide based sealant with VOC content limited to 250 grams per litre as prescribed by GRIHA, conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	12mm X 25mm	RM	1084			0.0232971735
c	25mmX25mm	RM	220			0.0072916449
d	50mmX25mm	RM	155			0.0093113421
A604	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.					
a	10mm X 40mm	RM	30			0.0000893382
b	12mm X 25mm	RM	50			0.0001359369
c	25mmX25mm	RM	50			0.0001650827
A605	Supply and installation of Polystyrene flexible board conforming to IS 4671 (type-1), 20 Kg/ Cum. as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /bitumen etc. all complete.					
a	100 mm thick	SQM	511			0.0735680153
b	50mm thick	SQM	40			0.0040031580
A610	Providing and fixing ribbed PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
b	230 mm wide and 8 mm thick	RM	20			0.0003547493
Ab	230 mm wide and 10 mm thick	RM	125			0.0027835388
d	230 mm wide and 6 mm thick	RM	1220			0.0161106678
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	50			0.0019582117
A615	Providing and fixing 300 mm wide Stainless steel strips (316 GRADE) over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete	Kg	80			0.0031331387
700	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.					
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. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	MT	1			0.0066158858
A701	Extra over item no. 701 and 703A for preparation of Steel surfaces by Manual Cleaning and provided with Chlorinated Rubber based paint with Primer Coat of Zinc Phosphate of Minimum 50 Micron Dry Film Thickness (DFT). etc. all complete as per specification.	SQM	150			0.0018934688

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
702	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	1			0.0050075240
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT				
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	172			0.2413461777
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, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	13			0.0201509680
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	485			0.0024801749
b	PVC pipes / conduits of all diameters	kg	785			0.0191070545
d	Expansion anchor fasteners (galvanised) of HILTI make(HRD Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	8mm Dia	Nos	50			0.0001683083
ii	10mm Dia	Nos	50			0.0001909741
iii	12mm Dia	Nos	50			0.0002168655
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	HST3 M8	Nos	50			0.0005405221
ii	HST3 M10	Nos	50			0.0007865045
iii	HST3 M12	Nos	50			0.0012655382
iv	HST3 M16	Nos	20			0.0009049828
v	HST3 M20	Nos	20			0.0018449175
vi	HST3 M24	Nos	20			0.0030606313
f	Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:					
i	HAS-E5.8 M8	Nos	20			0.0004505503
ii	HAS-E5.8 M10	Nos	20			0.0005269399
iii	HAS-E5.8 M12	Nos	20			0.0006525203
iv	HAS-E5.8 M16	Nos	20			0.0010901219
v	HAS-E5.8 M20	Nos	20			0.0018125576
vi	HAS-E5.8 M24	Nos	20			0.0024378789
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	20			0.0023627910
800	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.					
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. (Cement shall be issued by BHEL free of cost as per TCC)	SQM	40			0.0016079955
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.(Cement shall be issued by BHEL free of cost as per TCC)	CUM	3			0.0040949471
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). (Cement shall be issued by BHEL free of cost as per TCC)	CUM	3			0.0039786191
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	24			0.0656729602
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	2			0.0060049916
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	20			0.0021025640
900	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.					
A903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolfomaldihyde 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 flat oil paint confirming to IS: 137 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	70			0.0187961823

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
904	Providing and fixing single or double steel door shutters with 45 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, air tight, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	40			0.0198552231
A904	Providing and fixing single or double steel door shutters with 35mm (min) thk flush design shutter as per IS 4351 comprising of two outer sheets of 18 gauge(1.2mm min.) steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge (1.0 mm) 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	70			0.0359791908
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	5			0.0026841983
B905	Providing and fixing electrically operated, self operable/closing 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. Weight of aluminium section only shall be measured. (Glazing shall be paid separately)	SQM	5			0.0051114010
A906	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 2 mm wall thickness as per IS:1285, IS:733 and anodized(15 micron coating thickness) and electro color dyed 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 toughened glass of 8/10 mm 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	30			0.0012528085
B907	Providing and fixing automatically closing fire proof steel flush doors along with frame of minimum 44mm thk flush shutter 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 center to center of approved make conforming to IS : 3614 (part 1) & tested to IS/ISO 3008,satisfying LPA regulations and shall carry a unique label with certification/test report number,fire rating embossment, fixed at all elevations, with or without removable panels,with panic bar,panic trim with following fire rating using galvanised MS sheets for frames conforming to IS 277, made out of minimum 1.6mm (16 SWG) for both frame and shutter, G.I. sheet (min.zinc coating 120 gsm), and leaves, mineral wool / PUF/ any other fire retardant insulation material filled with required density, mastic caulking and grouting the frame, reinforcing and insulating the shutters with fire retardant material, with panic devices, including all fittings, fire rated vision glass, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (min.64 kg/cum density) complete and shall be fire proof as per IS:3614, LPA requirements and as per specification.Shop drawings shall be submitted by the fabricator/manufacturer for approval before execution Minimum ratings shall be 2 Hrs. All hardware fittings shall be fire rated.	SQM	140			0.2419216378
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	31			0.0062496423
b	fixed type	SQM	16			0.0027648187
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic 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 seperately).Weight of aluminium section only shall be measure. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%.	Kg	9225			0.3852386081

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A910	Providing, fabricating, designing, 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 A2 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 silicone 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 confirming 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 verticals 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,Alpolic 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- etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS-	SQM	1670			0.4521054608
A912	Providing and fixing pressed steel frames(complying general requirements of IS 4531) fabricated from 1.2 mm thick 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	1731			0.0348971963
A913	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 of 75mm wide and 3mm thick(min.) and arrangements for inside and outside locking with push and pull operation including wire springs, top/hood cover 0.9mm thick (min.), factory galvanized, primed & field painted, partly grilled (as required) with 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).					
b	Mechanically Operated	SQM	125			0.0466166436
c	Electrically & Mechanically operated	SQM	196			0.0813420058
g15	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.					
b	4 mm thick clear float glass	SQM	47			0.0046185145
Ae	3mm thick Polycarbonate sheet with profile matching with metal sheeting shall be provided. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 1000C. Suitable aluminium bedding shall be used. The open ends of the sheet shall be sealed as per manufacturer's recommendations .	SQM	49			0.0067245829
g	6 mm thick tinted heat reflecting type toughened glass	SQM	25			0.0033661668
h(a)	6 mm thick clear reflective toughened safety glass of Saint Gobain(India) or Asahi (India) or equivalent make and should have solar factor 25% or less, Maximum U-value 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28)	SQM	784			0.1567205787
Ah	6 mm thick clear toughened glass conforming to IS 5437	SQM	797			0.1300146613
AhB	8 mm thick clear toughened glass	SQM	75			0.0149147282
AhC	8 mm thick clear toughened fire resistant glass	SQM	30			0.0259201755
I(a)	composite double glazing, 25 mm thick 2 hr fire rated, with one outer 6 mm thick tinted heat-reflecting type toughened glass and one inner 11mm thick clear toughened glass hermetically sealed and seperated by 8 mm thick gap for thermal insulation (only single elevation area to be measured) with suitable frame of min 1.6mm galvenised steel sheet. The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	50			0.0849605752
I(b)	composite double glazing of fire resistant glass MIN.30 mm thick Hermetically sealed double glazed unit of one Fire resistant glass of min.14mm thick(outer side) clear, toughened, interlayered glass with 120 minute fire rated for both integrity & radiation control (EW 120) with symmetrical (Bi-Directional) fire protection and 6 mm thick toughened tinted glass (Inner side) with 10 mm air gap etc all complete as per specification.	SQM	40			0.0714244836
I(C)	One outer 6mm thick tinted heat-reflecting type toughened glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) ≥62 %, 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 glass shall be as per detail design values as approved by engineer incharge.The glass to be used should be from the approved manufacturers of glass and should be free from distortion and thermal stress.	SQM	20			0.0368642496

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
l (d)	Fire rated glass min.14mm thick fire resistant clear, toughened, interlayered clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass complying to BS476 Part22 or (EN-1634-1 :1999) with a light transmission of 86% according to EN410 standards and sound reduction of >=37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4 The glass shall provide bidirectional (Symmetrical) fire protection. as per specification and instruction of engineer in charge.	SQM	50			0.0950406434
m	6 mm thick clear toughened safety glass	SQM	20			0.0030373262
o	10 mm thick clear toughened safety glass	SQM	15			0.0041170829
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	50			0.0006764590
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	40			0.0043009290
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	125			0.0266785566
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	25			0.0078036864
A919	Design, Supply, fabrication, detailing and installing in position and testing Galvanized MS SLIDING doors of approved size and design, made out of channels, joists, angles, flats, plates, pipes, CI bracket, tubular sections (conforming to IS: 1161), bracings, diagonal braces of 50X50X6 angle iron, locking arrangement, tempered steel pivot, guide track of MS Tee, roller trolley, Galvanised/SS Wheels of required dia as per opening with ball bearings, SS pin and axle with lubrication point, Galvanised adjustable upper guide brackets with guide post constructed from a steel square hollow section of required dimension of 50 x 100 x 3mm profile, bronze aluminium ball bearing arrangements, paintings with one coat of zinc chromate/red lead primer and two coat of enamel paint, fixing to post etc. all complete as per specification, drawing and as directed by Engineer.	SQM	10			0.0034334959
A920	Providing and erecting Roof skylight structure with 4mm thick embossed clear translucent polycarbonate IR sheet, both side UV coated, minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated Aluminium section with 60mm width top & bottom with EPDM rubber gasket in approved shape like dome, pyramidal etc, sealing of joints with sealant, screws with pvc cap, self tapping screws, EPDM rubber gasket etc as per drawing, standards, specification, instruction of engineer in charge etc all complete.	SQM	832			0.2774800820
A921	Providing & fixing 120 minutes Fire Rated, Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from minimum 1.6mm galvanized steel sheet pressed to form a profile of nominal size 60mm x 70 mm & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of approved shade and color. The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30minute full insulation, Non Wired Toughened Interlayered glass having a sound reduction of greater than 37dB, light transmission of 86% and compliant to class 1(B)1 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass shall be held in position with minimum 1.6mm G.I Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120). Design, Shop drawings along with hardwares for the item with all construction and anchoring details, etc. along with fire rating test reports shall be got approved before execution.	SQM	30			0.0492483334
A922	Providing and fixing electrically operated, self operable/closing, approved anodized aluminium framed glass door with 10 mm thk. tinted glass, all complete. Automatic Sliding operating system comprising of Advanced DC brushless motor, Automatic Reversing Safety Device, Suitable for door weight 100 kg, Opening speed : 90-110cm /sec (adjustable), Closing Speed : 40-110cm/sec (adjustable), opening time : within 1-9 seconds after door stopped in opening, controller : 8 Bit micro computer, Motor (Dortexor equivalent) : DC12V, 35W brushless motor, Power Voltage : AC 110V - 240V. 50Hz - 60Hz, Power Consumption : 45W including Infra Red Sensors 2No both sides, rails & top & bottom as required, any aother accessories as required etc. all complete of best make and quality as approved by Engineer in charge. The door shall be double panel sliding door of approx. area 5 sq.m. to 7.5 sq.m. each.	SQM	30			0.1036807019

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A923	Providing and fixing Electrically operated, self operable/closing, G.I. framed with fire resistant glass, sliding doors with Fire resistant glazed door system shall be of uniform profile 50X50 mm with 14mm EI 20 glass for Interior application. FIRE RESISTANT GLAZED DOOR SYSTEM shall have 120 minutes of integrity and radiation control (EW 120) with symmetrical (Bi-Directional) fire protection. The frames shall be cold rolled profiles as per EN standard EN 10327/ Indian Standard IS 513. The door frames are cold rolled from 1.6 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The door shutter shall have the top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The glass must be minimum 14mm clear,120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass with a light transmission of 86% and a sound reduction of 38 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4. The shutters shall be fixed to the frame using Weld-on hinges of dimensions 179mm X 20mm. The profiles shall have grooves to incorporate Fire Resistant gaskets. The glass shall be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. Beading shall be clipped on using Stainless Steel selftapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm Calcium Silicate setting blocks. The door shall be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf (in case of double leaf only)shall be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a TUV audited facility. The maximum glazing size shall be as per the test certification. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c. The doors shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. The door shall also be subjected to durability tests as per EN 12400 for C5 classification (200,000 cycles) all complete as per specification. The door shall have water tightness level of 8A when tested as per EN 1027. Fire Rated Door shall be of Makes- shaktimat, Nauvair, ASI or equivalent. all complete as per specification (item includes the cost of glazing) Design Shop drawings alone.	SQM	20			0.1036807019
A925	Providing and fixing 3M privacy film on glass door, partition etc.having Project / Purchaser's Logo and other detail design as per details and direction all complete as per specification and approved by Engineer incharge	SQM	20			0.0024650778
A926	Providing & fixing 120 minutes Fire Rated,Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from 1.6 mm galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a suitable profile & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of min. 30 micron of approved shade and color.The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with min.30 minute full insulation, Non Wired Toughened Interlayered glasshaving a sound reduction of greater than 37dB, light transmission of 87% and compliant to class 1(B)1 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass shall be held in position with minimum 1.6mm G.I Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120).all complete as per specification. Design,Shop drawings for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution.	SQM	50			0.0849605752
A927	Providing & fixing minimum 30mm thick Hermetically sealed double glass (DGU) consisting of Fire resistant glass of minimum 14mm thick, clear, toughened,interlayered borosilicate glass,120 minutes fire rated for both integrity & radiation control, remain transparent under both fire and non fire condition and 6mm thick toughened tinted glass with 10mm gap. The partitions shall be 120 minutes Fire Rated,Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from 1.6 mm galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a suitable profile to accomodate the glass & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150 mm from the edges & every 500mm c/c .The frame shall be finished with etch primer for scratch resistance and shall be powder coated of min. 30 micron of approved shade and color.The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30minute full insulation, Non Wired Toughened Interlayered glass having a sound reduction of greater than 37dB, light transmission of 87% and compliant to class 2(B)2 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass shall be held in position with minimum 1.6 mm G.I Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120) all complete as per specification.Fire Rated Door shall be of Makes-shaktimat,Nauvair,ASI or equivalent Design,Shop drawings for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution.	SQM	30			0.0501123393

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SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A928	Providing and fixing of fully glazed steel door with 120 minutes fire rating, of integrity and radiation control (EW 120) fabricated with 1.6 mm thick galvanized steel sheet. The door frames are manufactured from 1.6 mm galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a profile of 35 mm x 60 mm on the vertical sides and 50 x 60 mm on the horizontal side. The door shutter would have a top rail and side rail 60 mm x 60 mm and a bottom rail of 110 mm x 60 mm. The frame shall be finished with approved fire resistant primer or Power coating of min. 30 micron as per approved shade. The sections have a special insulating infill. The test is conducted in IFTS as per EN 1634-1: 1999. The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30 minute full insulation, Non Wired Toughened Interlayered glass, with a light transmission of 86% and a sound reduction of 37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass should be compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass should be held in its place with the help of 1.6 mm GI beading and a special ceramic tape with cross section of 5 x 20 mm as per the test evidence. The shutters should be fixed to the frame using Dorma SS Ball Bearing Hinges of size 100 mm x 89 mm and 3 mm thickness or equivalent. Beading should be attached using 4 mm x 35 mm SS screws at a distance of 75 mm from the edges and 150 mm c/c henceforth. The door should be fitted with Dorma Mortise Sash lock 952F and door closer TS 68 of Dorma make or equivalent. The inactive leaf should be fixed to the frame using 1200mm long tower bolt all complete as per specification and Design, Shop drawings, along with hardwares for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution.	SQM	40			0.0914170951
A929	Providing and fixing frameless fully glazed (single/ double leaf) doors and Mullion-less glass partition with 12mm thk toughened float glass fixed with Dorma make stainless steel patch fittings including cutting, making holes, cutouts in the glass of required shape and size to accommodate fittings and fixing the fittings in floors, soffits, jams including necessary fixtures, screws, ss handels 1000mm long, C Shape (both side), sealant wherever required and SS cover over patch fittings. The glass panels shall be easily removed and refitted (during breakage) without using any special tools. The junction of glass to glass shall be properly secured using extruded PVC or sealant. Shop drawings for the item with all construction and anchoring details shall be got approved before execution.	SQM	10			0.0114585781
A930	Providing and fixing motorized curtain (operated with remote control also) mechanism at all heights.	SQM	5			0.0091669897
A931	Provide & Install SS Logo/Signature ICON of NTPC as per Guidelines of "Client" complete in all aspects. Logo to be fabricated in Sainless steel finish as per approved Pantone Shades of Client Guidelines along with proper provision of fixing arrangement of Logo on Partition Surface/Glass Surface/Acrylic Surface etc. Shop drawings for the item with all construction and anchoring details shall be got approved before execution, all complete as per specification and approved by Engineer incharge.	SQM	3			0.0031509308
A932	Providing, fixing & Installation of manually operated, frameless Vertical Roller venetian blinds with premium fabric quality with 5% openness factor. HARDWARE; TOP TUBE : Made of extruded aluminium with 38 mm Dia. and wall thickness of 1.2 mm with spline adoptable to accommodate. CLUTCH MECHANISM : Moulded plastic having self lubrication with Glass fibre reinforcement, having a minimum lifting capacity of 8 lbs weight capacity - 8 lbs Head adoptability - 38 mm OPERATING CHAIN : PLASTIC / STEEL ball chain adoptable to the clutch pitch for smooth operation of blinds. LOCKING MEMBER : Plastic / steel stop locks for limit setting adoptable to the steel chain. Bonding (Fabric > Tube) : 30/36 mm wide double sided adhesive tape of 3M for strong holding capacity. SPRING BOOSTERS: provided as per the requirement Bottom Bar : aluminium extruded circular section with powder coated finish, having a Min. weight to be 365 gms / Rmt for a perfect fall of fabric to avoid warpage / floating. Ends are covered with end caps to give a perfect finish, installation at site at all height complete as per approved sample and instruction of engineer incharge.	SQM	9			0.0028128263
1000	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. (Cement shall be issued by BHEL free of cost as per TCC)					
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. (Cement shall be issued by BHEL free of cost as per TCC)					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 (including cost of cement for brick making)	CUM	224			0.0801728308
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. (Cement shall be issued by BHEL free of cost as per TCC)					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 (including cost of cement for brick making)	CUM	2180			0.9789510795
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	250			0.1206480488
A1002	Providing Autoclave Areated concrete blocks blocks having dimensions of 625 mm x 250 mm in cement mortar 1: 6 (1 part Cement 6 parts coarse sand having modulus of fineness 1.1& suitable plasticizer) conforming to I.S. :2185(part-III) in walls, chambers etc. in thickness varying from 100mm to 300 mm at depths, places and position above plinth, including horizontal and vertical joint thickness approximately 10 mm, raking out joints, curing, scaffolding etc. complete excluding plastering and painting all complete as per specification and drawing. (Cement shall be issued by BHEL free of cost as per TCC) Payment Terms: a) On receipt of material site - 50% b) Execution as per item description - 50%	CUM	307			0.1442805044
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. (Cement shall be issued by BHEL free of cost as per TCC)					

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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	93			0.0051292779
A1003	Providing factory made composite modular light weight aerated concrete panels of minimum 2 hours of fire rating, consisting of two fiber reinforced cement sheets(min. 4 mm thick) on either side of light weight concrete core, having min. compressive strength of 35 Kg/Cm2 and density in the range of 700-900 Kg/Cu.M. to provide external wall and internal partition at all levels. The panels shall be fixed in position through tongue and groove jointing system by screwing the panels to top & bottom U channels(channels min. 1.25 mm thick and galvanized to min. grade 180 as per IS:277), fixing U profiled top & bottom channels to concrete/primary steel members which are placed at max vertical spacing of 4.5 M with the help of galvanized steel expansion fasteners, filling the joints from both faces with silicon acrylic paste and making the same water tight by covering with fiber glass tape(min. 50 mm wide & min. 0.5 mm thick) or by any other suitable material, so as to ensure that entire construction done is weather proof and panel surfaces are fush for painting. creating opening for doors/windows/ventilators/ducts/pipes/fans/AC etc. and finishing the opening with same U profiled galvanized steel channel which is used at top & bottom. The wall must be capable of sustaining wind pressure of 4.5 M height within limiting deflection of span/250.	SQM	400			0.0507291242
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.					
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	20			0.0008622548
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	SQM	20			0.0009399347
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			0.0056480350
A1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)(Cement shall be issued by BHEL free of cost as per TCC)	CUM	25			0.0090643862
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	5			0.0000566413
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	13			0.0016839278
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	10			0.0001359427
A1009	Supply and placing in position GI of 0.9 mm welded wire mesh/ chicken wire mesh for encasing of steel sections in concrete/ brick/ plaster at the junction of RCC and brickworks including cutting, bending, fixing etc. complete.	SQM	450			0.0115355149
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.(Cement shall be issued by BHEL free of cost as per TCC)	SQM	25			0.0014775508
A1013	Providing and fixing 190mm x 190 mm x 80 mm glass bricks of approved make and design with white CM 1:2 (1 white cement : 2 sand). Two numbers of 5 mm thick GI wires to be passed through PVC spacers in each joint horizontal as well as vertical by drilling holes in surrounding surface (brick or RCC) and filling the same with Hilti or equivalent chemical (rebarrring). The PVC concealed spacer (with provision for passing the 2 no. GI wires in horizontal and vertical direction) shall be provided to maintain grooves/spaces for GI wire and white cement mortar at the junction of two glass bricks. The sample of the glass brick shall be got approved by Architect. The glass bricks shall be fixed with placing GI wires vertically as well as horizontally after passing through the spacer and having minimum lap length of + 200 mm as per the site conditions at all the places, heights and shapes, etc. complete, as per the details and drawing to the satisfaction of Engineer-in-charge. Joints along the periphery of glass bricks to be filled with approved make and color weather silicone sealant of DOW corning 789 or equivalent	SQM	10			0.0057632704
1100	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.					
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, before starting of masonry work.					
b	50mm thick	SQM	260			0.0054195516
1200	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. (Cement shall be issued by BHEL free of cost as per TCC)					
A1201	Providing 18mm thick plaster in two layers outside the building/boundary wall/rough surface of internal 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	19732			0.3665895764
1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	15297			0.2307282935
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	3114			0.0409209275
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 battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	240			0.0005904270

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1207	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	400			0.0029519048
A1208	Providing moldings and cornices 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	240			0.0014292730
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	400			0.0125584978
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	56			0.0006235127
1300	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.					
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	989			0.0022598724
A1304	Two or more coats of Low VOC (volatile organic compound) acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge	SQM	15308			0.0954314529
A1305	Providing and applying two or more coats of low VOC (volatile organic compound) acrylic emulsion paint as per IS 15489, relevant latest code 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 50 grams per litre. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	879			0.0077556172
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 confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	30			0.0006309662
A1306	Providing and applying 2 or more coats of oil resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer 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	1713			0.0261701030
B1306	Providing and applying 2 or more coats of acid/alkali resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer 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	268			0.0056366313
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	30			0.0005268708
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 confirming 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	30			0.0003786938
1309	Two or more coats of fire resistant transparent paint (@3.5 litre per sqm per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made separately.	SQM	45			0.0009071284
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete. 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.	SQM	30			0.0001561431
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	429			0.0027327416
A1313	Providing and applying ready made Epoxy Paint over areas other than steel structure/flooring with suitable pigments of approved shade as per specification and direction of Engineer. Epoxy Painting shall be provided with surface preparation of concrete substrate with Captive Shot Blasting Machine OR Light Grinding to form the required anchor profile on the floor substrate followed by application of epoxy resin based moisture barrier underlay of 2 mm thickness including filling of saw cut joints with epoxy cementitious resin based moisture barrier underlay as per manufacturer specification. Application of self smoothing epoxy floor topping of epoxy based resin of 2 mm thickness over epoxy resin based moisture barrier underlay including application of solvent free epoxy resin based two component primer shall include application of PU Sealant at Expansion and Isolation Joint respectively including surface preparation of the joint, fixing of backup strip and application of sealant etc all complete as per specification. The epoxy coating 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 4 mm thickness.	SQM	200			0.0105127624
1314	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 nominal thickness of 2.5 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	40			0.0025557063

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1315	Providing and applying three coats of Solvent based (100% pure acrylic co-polymer resin based) paint (shall not contain any water sensitive ingredients) of approved brand and manufacture and required shade over one coat of primer or one coat of cement paint after necessary cleaning/ washing, removing loose & flaking materials, removing mould, algae, organic growth & grease, preparing the surface using coir brush/ wire brush, sand paper, including all required tools, material, scaffolding and other painting accessories, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish. The final finished coating shall be fungus resistant, UV resistant, water resistant & repellent and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	4372			0.0899986140
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	100			0.0006822766
1317	Providing and applying 2 mm thick white cement 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	12009			0.0777358401
A1317	Providing and applying 2 mm thick Acrylic wall putty 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	2014			0.0200773636
A1319	Providing and applying two or more coats of Premium Acrylic Smooth Paint with Silicone additives weather coat 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 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 repellent and extremely durable with color fastness as per specification. (The sealant should have VOC content limit less than 250 grams per litre as prescribed by GRIHA. All necessary documentation (certificates, manufacturer declarations) to be provided by the contractor for green building documentation).	SQM	3352			0.0379723567
1400	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. (Cement shall be issued by BHEL free of cost as per TCC)					
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):-(Cement shall be issued by BHEL free of cost as per TCC)	SQM	5913			0.2158836724
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring without 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) (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):-(Cement shall be issued by BHEL free of cost as per TCC)	SQM	2000			0.0710777292
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm well graded) and top layer of 10mm 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 as per specification. (Quoted item rate shall be inclusive of providing glass joint strips):-(Cement shall be issued by BHEL free of cost as per TCC)	SQM	139			0.0043370162
A1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with non metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm well graded) and top layer of non metallic concrete of mix 1:2 (1 cement hardner mix with approved quality hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete as per specification. (Quoted item rate shall be inclusive of providing glass joint strips).	SQM	100			0.0030230989
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum/quartz chips topping pigment content is 3.5 kg per 50 Kg of white Cement) of size 300X300X25mm 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	5358			0.3832633352
b	Laid in skirting	SQM	161			0.0161230974
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved specified colours, pattern, sample, different texture, and should be laid on the subbase and bedding of sand minimum 20mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing)					
Ab	80mm	SQM	200			0.0110307051

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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.(Cement shall be issued by BHEL free of cost as per TCC) Payment Terms: a) On receipt of material site - 50% b) Execution as per item description - 50%	SQM	1200			0.2469473871
A1412	Providing and laying 20mm thick Mirror polished (6 layers of polish)/Flame finish (making top surface rough by burning / shot blasting)Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 1.5 sand : 3 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, moulding, cornice, granite polishing etc. all complete.(Cement shall be issued by BHEL free of cost as per TCC) Payment Terms: a) On receipt of material site - 50% b) Execution as per item description - 50%	SQM	100			0.0167790512
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	100			0.0207537661
A1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 with Matt/ Glazed from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 average 40mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following	SQM				
b	10mm thick tiles In flooring	SQM	143			0.0130985775
d	10mm thick tiles In skirting and dado upto specific height	SQM	30			0.0028858487
B1416	Providing and laying heavy duty Antiskid full body vitrified tiles 18-20 mm thick of size 600x600mm in flooring, of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Endura,Varmora or equivalent ,complete including underbed of cement mortar 1:3 minimum 30mm thick for flooring with neat cement slurry @3.3Kg/sqm etc.all complete. Full body Vitrified Tiles shall be laid on properly laid levelled floor, with joints 3 to 5mm wide & 8 to 10mm deep & shall be filled with approved Epoxy Grout mix of 0.70kg of organic coated filler of desired shade (0.10kg of hardener and 0.20kg of resin per kg). Full body Vitrified Tiles shall have water absorption less than 0.5%, Modulus of Rupture more than 38N/mm2, Breaking strength more than 7500N, Moh's scale more than 6, Abrasion resistance less than 144 mm3 and coefficient of friction more than 0.4. Vitrified Tiles shall generally conform to IS: 15622. All complete (including cost of epoxy grouting) as per engineer incharge.	SQM	4250			0.8568058007
D1416	Providing and laying matt finish vitrified ceramic tiles of polished variety of size 600x600 / 800x800 from reputed / approved manufacturer, complete including underbed of average 40 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5mm well graded) with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	9.0 mm (min.) thick tiles In flooring	SQM	400			0.0387109181
b	9.0 mm (min.) thick tiles In dado	SQM	20			0.0020391229
E1416	Providing and laying digitally glazed vitrified ceramic (with recycle content)tiles and matt finished of size 600x600/800x800/1000x1000 from reputed / approved manufacturer, complete including underbed of 40.5 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5mm well graded) with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout of 0.7kg of organic coated filler of desired shade (0.1 kg hardner and 0.3 kg resin per kg) or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	9.00 mm (min.) thick tiles In flooring	SQM	200			0.0223332840
b	9.00 mm (min.) thick tiles In dado	SQM	20			0.0023291294
A1417	Providing and laying Digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer Simpolo, varmora or equivalent complete including underbed of cement mortar 1:3 minimum 40mm thick underbed for flooring and 12mm thick underbed for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following					
b	9.00 mm (min.) thick tiles In flooring	SQM	400			0.0410153945
d	9.00 mm (min.) thick tiles In skirting and dado upto specific height	SQM	40			0.0043449587
C1417	Providing and laying vitrified ceramic tiles of matt finish polished variety of size 1000X1000 from reputed / approved manufacturer Simpolo,varmora or equivalent, complete including of 40mm average thick underbed of cement mortar 1:3 with neat cement slurry, and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4 mm stainless epoxy grout SP- 100 of Laticrete or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	10 mm thick tiles In flooring	SQM	300			0.0361216653
c	10 mm thick tiles In skirting and dado upto specific height	SQM	30			0.0037616914
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	30			0.0083701085
A1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick Designer glazed/matt finish of reputed manufacturer Simpolo,varmora or equivalent of approved finish shade and colour on walls, skirting etc.including underbed of cement mortar 1:3 with neat cement slurry etc. all complete. All tiles to be used should be with appropriate % of recycled content.					
a	300X300 mm	SQM	200			0.0123383491

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1421	Providing and laying Heavy Duty anti skid (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm(approved size) , vitrified tiles min.7mm thick on floor, skirting and dado of reputed / approved manufacturer Simpola,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 : 3 sand by volume and brought to proper level including cement mortar,12mm thick underbed for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete.	SQM	500			0.0473529926
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, pointing joint of bedding 20mm deepx6mm wide with epoxy/Furane morteretc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
Aa	12 mm thick	SQM	150			0.0204397864
a	20mm thick	SQM	300			0.0489001391
b	38mm thick	SQM	100			0.0223138151
B1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) tiles (75mm thick) conforming to IS:4457 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 12 mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR tiles 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	250			0.0883744518
A1425	Providing and laying polished Marble slabs (rajnagar plain white or equivalent approved shade/color /design) 20 mm thk in staircase landing/skirting and corridors over minimum 30 mm thick underbed of 1 cement : 1.5 sand : 3 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be 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 moulded marbel nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	250			0.0467218363
1426	Providing and laying marble skirting /dado (Aranga white or approved shade/color /design) equivalent of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed 20mm cement mortar 1:3, with thick cement slurry 3.3kg/sqm spread over the surface scaffolding etc. all complete.	SQM	25			0.0043096756
A1427	Providing and fixing Designer digitally glazed ceramic tiles of approved color and design as per IS: 15622 of size 300x300mm / 300x450mm, 300X600 of reputed / approved manufacturer Simpola,varmora or equivalent of approved finish,size in dado, 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 as instructed by engineer incharge for following thicknesses.					
a	5mm thick	SQM	40			0.0025142801
b	7mm thick	SQM	200			0.0123383491
A1428	Providing and laying 2mm thick heavy duty antistatic PVC(Virgin) tile in flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete as per specficaitons.	SQM	1200			0.0257121229
A1429	Providing and fixing Removable type flooring system (raised access floor) consisting of 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, de-greasing, 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 cementitious 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 and taken approval for Uniformly distributed load (UDL) of 13 KN (1300 kg/ sqm), for the same all complete as per specification. Cavity area below the false flooring shall be made dust proof by using Polyurethane paint etc complete as per specification.	SQM	150			0.0648004387
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			0.0006861358
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	200			0.0013205465
A1431	Providing and fixing, laying min.11mm wooden panel flooring and skirting of pergo, greenlam or equivalent 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 system 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.	SQM	100			0.0127914338
A1432	Providing and laying Decorative/designer pre-polished, plain and pigmented, high wearing resistance concrete tiles of 20mm thickness (minimum) in various non-standard interlocking patterns of approved color,shade all complete as per specification.	SQM	100			0.0071531044

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1433	Providing and laying Tactile, tac liner & tac button fully vitrified unglazed porcelain tile (for guiding band/s for visually impaired persons), size 300x300 15mm thick having Tile body 10mm thick plus profile 4.5mm thick. Low water absorption below 0.5%. MOR > 38NCM2, MOH Hardness >7 & Breaking strength > 4000 N. Tile confirming RNIB (The royal national institute for the blind, UK) , DETR (Department of the environment, transport and the regions, UK), & ADA (American With Disabilities Act, USA) , high stain and chemical resistance. Confirming IS 4457: 2007. Tile will be laid on 20mm thick cement & sand mortar with cement slurry having 4mm spacer & pointing with 3X4mm stainless epoxy grout / polymer based SP- 100 of Laticrete or approved equivalent in approved colour.	SQM	10			0.0009897821
A1434	Providing and fixing carpet flooring over cement concrete floor. The carpet shall be of tile/roll form, machine/hand made tuped un-cut loop pile and lay with under lay of 10mm thick and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specification.(Cement concrete flooring to be paid separately)	SQM	10			0.0006609357
A1435	Providing and fixing Glass mosaaic tiles at finished plain wall surface of size 24 mm x 24 mm x 3.8 mm thick (minimum) in decorative murals and pattern of approved colour, shade, design , fixing in customize design, as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the vertical wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge.	SQM	40			0.0070508407
A1436	Providing and fixing Rubber flooring over cement concrete floor min. 4mm thick conform to IS 809, consist of 100% virgin elastomer reinforcing agents, resins, curing agents, anti-oxidants and pigments.The rubber flooring shall be of tile/roll form, machine/hand made tuped un-cut loop pile and lay with suitable under lay and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specifications. Rubber flooring shall have excellent abrasion resistance,comply to class-I fire rating,acid & alkali resistant and shall be of anti static grade.(Cement concrete flooring to be paid separately)	SQM	300			0.0528813052
1500	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.					
A1502	METAL DECK SHEET Type-I, Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44mm of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the roof slab 40mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) over primer coat of minimum 5 micron(nominal) and minum 10 micron (nominal) SMP or super polyester paint over primer coat of minum 5 micron (nominal) on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. (Metal deck sheet shall be issued by BHEL free of cost)					
a	Span Upto 1800mm	SQM	4661			0.1108078591
B1502	METAL DECK SHEET Type-II, Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the floor slab 150 mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) over primer coat of minimum 5 micron(nominal) and minum 10 micron (nominal) SMP or super polyester paint over primer coat of minum 5 micron (nominal) on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.(Metal Deck Sheet shall be issued by BHEL free of cost as per TCC)					
a	Span Upto 1800mm	SQM	15369			0.3653735221
A1503	Providing and fixing shear anchor studs for fixing metal deck sheet to floor structural beams conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19mm diameter and 100mm length manufactured from cold drawn round steel barsconforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete as per specification.	QUINTAL	2			0.0034768667

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
B1503	Providing and fixing shear anchor studs for fixing metal deck sheet to roof structural purlins conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 16mm diameter and 65mm length manufactured from cold drawn round steel bars conforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete as per specification.	QUINTAL	59			0.1025675669
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.					
Ab	Mineral wool/rock wool insulation(density 48 kg/cum) bound in polythene bags laying on top of false ceiling panels at all height and levels as per instruction from engineer in-charge.	SQM	150			0.0078652180
1514	Providing and installing under deck insulation with resin bonded rock wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.6 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	500			0.0208766853
1516	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	100			0.0075932866
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	200			0.0167401709
1518	Supply & fixing FRP (fibre reinforced plastic) sheets 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm.	SQM	50			0.0051172186
1600	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.					
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.					
aa	12.5mm thick GRG board confirming to IS: 2095 with galvanised light gauge steel load bearing supporting GI frame (minimum 0.8mm thk and grid size of 600x1200mm.) and finished flat (seamless). All GRG board to be used should be with appropriate % of recycled content. The contractor should provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturing of board to be used)	SQM	50			0.0045249138
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon Hunter douglas, or approved equivalent with corrosion resistant aluminium alloy panels of size 600 mm x 600 mm and 0.6 mm thk with clip on torsion spring system .perforation patterns in combination with built in nonwoven tissue, acoustic fleece for providing good acoustic properties and installed with silhouette T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. The whole system shall be level adjusting arrangement and shall be suspended as per manufacturer. 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	341			0.0780548719
A1604	Providing, fixing and laying permanently colour coated Designer metal aluminium false ceiling of approved colour with stove enamel finish of approved make in LINEAR, RECTANGULAR, SQUARE, CURVILINEAR , OPEN GRID type etc.as per detail engineering drawing , with corrosion resistance aluminium alloys panels of minimum thickness MIN. 0.6mm. 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)	SQM	100			0.0143839118
B1607	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).The work to be complete as per specifications, approved 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%.	SQM	206			0.0361117742
A1608	Providing and fixing Pre-Painted Coil coated Steel false ceiling system, at all level, for all kind of works, in approved pattern,consisting of min.0.5 mm thick perforated with acoustic fleece, galvanised as per IS 277 including, along with galvanised supporting steel members exposed faces of galvanised member to be prepainted with regular modified polyester coating / super polyester coating minimum 20 DFT, to form panels of specified size for tile type panels and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalk way steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	512			0.0306949437

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1609	Providing and fixing stainless Steel false ceiling system in lineal/tile shape, approved colour Luxalon hunter douglas or approved equivalent, lineal pattern (closed type) of 100 mm nominal width , bright finish at all level, for all kind of works, consisting of 0.5 mm thick stainless steel sheet, along with galvanised supporting steel members exposed faces of galvanised member to be prepaainted with regular modified polyester coating / super polyester coating minimum 20 DFT and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalkway steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete (Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	135			0.0457054602
A1611	Providing , Design and fixing Aluminium ceiling trap door in the false ceiling matching with false ceilign material with min. 2mm thick powder coated inner and outer aluminum frame, corner fitting plate with stainless steel of 2mm thick fixture are with self-drilling screws and sealing strip of 6mm width and 6mm thick. Hinge operated through Push-lock mechanism.	SQM	12			0.0036789646
1700	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.					
A1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be lessthan 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.	RM	1414			0.1752876854
C1704	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239 (part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over a coat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be lessthan 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.	RM	230			0.0271572591
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	50			0.0021815284
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	50			0.0032011129
1800	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.					
A1801	Providing and Filling in trenches, plinths, area paving, grade slab, other underground structures, etc. with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per drawings/specifications. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	1084			0.1240530283
B1802	Providing and Filling in trenches, plinths, area paving, grade slab, other underground structures, etc. with graded stone aggregate of size range 40 mm downwards nominal size rammed, consolidatedin layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per drawings/specifications. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	100			0.0114449671
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	402			0.0856940390
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	50			0.0006084905
1807	Anti termite chemical treatment of soil with Chlorpyriphos/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	6317			0.0654296043
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	90			0.0632302982
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	each	50			0.0354095229
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.	NO	50			0.0274925509
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items)	NO	50			0.0023530911
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	NO	50			0.0013658780
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	50			0.0844520502
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	50			0.0608726681
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	110			0.0007832616

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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 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	500			0.0207473725
1823	Providing and laying cinder filling in the toilets, roads, etc complete as directed by engineer in charge.	CUM	40			0.0054894554
A1823	Providing and laying cinder filling or foam concrete blocks filling in sunken slabs of toilets or where ever light weighted filling material required, etc complete as directed by engineer in charge.	CUM	10			0.0013723639
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	400			0.0001294857
1849	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 or equivalent to 8% to 10% by volume including compaction. Separation layer of one tack coat @ 1Kg/sqm shall be spray after first layer of 30mm and sand shall be sprayed on the final surface of 20mm @ 0.5 cum/100 sqm. etc. all complete as per specification and as guided by engineer-in-charge.	SQM	115			0.0046155682
1850	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	115			0.0045857600
1851	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	225			0.0031460613
1852	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	450			0.0131959613
1853	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	59			0.3613296119
A1862	Supplying, fabrication and installation of PVC pipes in concrete / Duct bank for all kind of works, including setting material in concrete, layout, cutting, forming, grinding, jointing etc. all complete as per specification and as guided by engineer-in-charge. (Concrete, Reinf. paid separately)					
a	200 mm nominal diameter.	RM	1080			0.0780927194
2000	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.					
A2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 4 mm (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 2.5 mm. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. 2007)	RM	315			0.0518753173
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	5			0.0363404086
A2008	Supply, fabrication and fixing of mild steel posts for fencing, etc. including chlorinated rubber paint over a suitable primer etc all complete as per specification. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	MT	26			0.1775335500
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	MT	7			0.0558266557
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	MT	5			0.0380798136
2100	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.					
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 cut sheets/ declaration from the manufacturers mentioning the same to Engineer in charge.)	NOS	22			0.0011250785
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	22			0.0006935559
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.	NOS	11			0.0004471852
b	50mm nominal bore.	NOS	11			0.0009370881

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive bituminous 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	110			0.0033182490
b	20 mm nominal bore.	RM	220			0.0072631327
c	25 mm nominal bore.	RM	220			0.0081319309
d	50 mm nominal bore.	RM	220			0.0117064729
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	110			0.0025990448
b	20 mm nominal bore.	RM	110			0.0029123621
c	25 mm nominal bore.	RM	110			0.0033467612
d	32mm nominal bore.	RM	55			0.0019760217
e	50 mm nominal bore.	RM	110			0.0051340322
f	65mm nominal bore.	RM	110			0.0061167525
A2106	Providing and fixing 600mm x 900mm x 6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws , edge mounting with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	11			0.0016890433
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	NOS	4			0.0002009332
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	9			0.0005534787
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	11			0.0004806522
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.	NOS	11			0.0004543006
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	NOS	11			0.0003275544
A2113	Providing and fixing rotating type chromium plated brass shower rose with 15 or 20 mm inlet all complete.	NOS	11			0.0002634717
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent conforming to IS:12701 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	500 litres capacity	NOS	1			0.0002648276
b	1000 litres capacity	NOS	1			0.0005296552
c	2000 litres capacity	NOS	1			0.0010592441
d	5000 litres capacity	NOS	1			0.0026481405
2115	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	NOS	1			0.0052644965
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	2			0.0000906285
A2117	Providing and fixing metal storing cabinets all complete.	EACH	2			0.0019420236
A2118	Providing and fixing electric operated hand dryer with photo voltaic controLetc all complete.	EACH	2			0.0006473420
A2120	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	5			0.0006473420
2200	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.					
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.					
b	Colored	EACH	5			0.0034674801
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 mounted over 20 mm thk granite beveled edge counter counter. The Basin shall be fitted with approved shape bib cock, photo-voltic 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 as per IS: 2556 with two taps, necessary union including cutting of notch in granite counter slab etc complete as per specification	EACH	17			0.0085837351
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	5			0.0018099627
A2203	Providing and fixing stainless steel kitchen sink/Eye wash sink of size size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, hot and cold water mixer, conforming to IS: 13983 including all fittings etc. all complete.	EACH	4			0.0025756383
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.					
A2204	Providing and fixing colour glazed vitreous china European type water closet of approved make 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, water faucet etc all complete.					
b	Wall mounted	EACH	17			0.0097568442
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	5			0.0019899264
A2205	Providing and fixing colour glazed vitreous china Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 of approved manufacturer simpolo, varmora or equivalent 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	5			0.0026670449

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 610x375x390mm with photo voltaic control flushing systems of approved manufacturer simpolo, varmora or equivalent 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	26			0.0202643425
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	60			0.0013632975
b	110mm dia pipes	RM	36			0.0010953037
c	160mm dia pipes	RM	36			0.0016988705
d	200mm dia pipes	RM	48			0.0027902827
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. (Cement shall be issued by BHEL free of cost as per TCC)					
a	200mm dia	RM	83			0.0042929484
b	300mm dia	RM	285			0.0254229747
c	450mm dia	RM	248			0.0369564563
d	600mm dia	RM	25			0.0051010473
e	900mm dia	RM	12			0.0043089561
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.(Cement shall be issued by BHEL free of cost as per TCC)					
a	150mm dia	RM	12			0.0004109350
b	250mm dia	RM	12			0.0005352205
c	300mm dia	RM	12			0.0006649458
d	450mm dia	RM	12			0.0009881047
e	500mm dia	RM	12			0.0011597723
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:(Cement shall be issued by BHEL free of cost as per TCC)					
Aa	250mm dia	RM	24			0.0023055685
Ab	300mm dia	RM	18			0.0020635881
a	450mm dia	RM	12			0.0020453369
b	600mm dia	RM	5			0.0011312285
c	900mm dia	RM	5			0.0020899380
A2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx600mm including frame from reputed manufacture confirming to IS:4111 etc all complete as per specification.	EACH	12			0.0083848726
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	12			0.0083351543
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:					
a	100x100mm P or S Type.	EACH	12			0.0014044726
b	150x100mm P or S Type.	EACH	5			0.0006075315
c	150x150mm P or S Type.	EACH	5			0.0006347189
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	5			0.0005204627
A2215	Providing and fixing C.I. floor traps with stainless steel grating etc all complete.	EACH	12			0.0013741771
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	12			0.0011947335
A2217	Providing and installing approved brand single tap water efficient water cooler of 50 L cooling capacity all complete.	EACH	2			0.0042837134
A2218	Providing and installing approved brand single tap water efficient water cooler of 150 L cooling capacity all complete.	EACH	2			0.0105289953
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	2			0.0023148906
2220	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint,fixing clamps, excavation, filling, disposal etc. all complete for the following.					
a	75mm dia pipes	RM	12			0.0011636569
b	100mm dia pipes	RM	12			0.0014992437
c	150mm dia pipes	RM	36			0.0065112103
d	200mm dia pipes	RM	36			0.0093683187
e	250mm dia pipes	RM	36			0.0135071486
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)					
a	75mm dia	RM	24			0.0026706628
b	100mm dia	RM	24			0.0035904074
c	150mm dia	RM	60			0.0133339258
d	200mm dia	RM	120			0.0392832356
e	250mm dia	RM	60			0.0250365394
f	300mm dia	RM	48			0.0245875605
2222	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			0.0001844940
b	100 mm dia	RM	10			0.0002667071
c	150 mm dia	RM	10			0.0004783828
d	200 mm dia	RM	10			0.0007871669
2223	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	NOS.	1			0.0007800636
2224	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	NOS.	1			0.0015306791
A2225	Providing and fixing energy efficient geyser of 25 liters capacity including fittings etc all complete.	EACH	1			0.0005178736

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BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
2400	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:					
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, debris etc. within a lead upto 1 km etc. all complete.	CUM	2500			0.0106805523
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	500			0.0245665663
A2405	Providing & Laying granular sub-base using close graded Material conforming to MORTH specification (Table 400-1, Grading-I), mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	789			0.1350939743
A2406	Providing & Laying water bound macadam sub base/ base course with stone aggregate 53 mm to 22.4 mm size stone conforming to MORTH specification (Table 400-7) mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	139			0.0238462267
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in charge.					
2602	Earth work in stripping of top soil upto a maximum depth of 0.30 m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm 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.	Sq.m	3100			0.0044140331
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with surplus stacked soil/soft rock and compacted as specified including re-excavation of stacked earth, all lifts, dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	2500			0.0171548361
2700	RAIN WATER HARVESTING					
2701	Making 250mm dia bore hole up to a maximum depth of 20 m below ground level in all types of rocks including all equipments, tools & plants, lowering casing pipes, bentonite slurry, removal of casing pipes etc. complete in all types of soil.	RM	60			0.0054920359
2702	Supply & fixing 150mm dia perforated PVC pipe ISI mark 6 Kg/ cm2 with air vent at top as per the drawing & specification complete.	RM	120			0.0033713508
2703	Providing & fixing 150 dia PVC pipe ISI mark 6 Kg/cm2 as per specification.	RM	60			0.0016856754
2704	Supply & packing uniformly 6mm to 3mm size gravel in the bore hole surrounding the perforated PVC pipe.	CUM	15			0.0022284698
2705	Supply & packing uniformly downgraded 40mm size gravel at all depth in the well dug for rain water harvesting.	CUM	15			0.0022284698
2706	Supply & packing uniformly downgraded 40mm size pebbles at all depth in the well dug for rain water harvesting.	CUM	9			0.0013370819
2707	Supply & laying 300mm thick coarse sand layer at all depth in the well dug for rain water harvesting.	CUM	30			0.0043307084
2708	Supply & fixing Netlon jali/ PVT net in the well dug for rain water.	SQM	60			0.0009477107
	TOTAL PART-II				₹ 1,50,00,000	24.7114805460
Part-III (SG-2)	Balance Civil and architecture works of Integrated Boiler - Bunker Foundation, Mill Foundation, ESP Foundation, ID Duct Foundation, Fans Foundation, MRS Foundation, Bottom Ash Hopper, FGD RCPH & OB Foundation, RC Pump Foundation, Absorber Foundation, FGD Duct Foundation, ESP & FGD Control Room, Pipe & Cable Rack, Aux. Absorber Tank, Roads upto WBM and Drains for Unit-2					
A	Construction and maintenance of labour colony having adequate no. of rest rooms along with toilets & fencing etc. as per drawing attached and TCC including associated civil and structural works on built, own and operate basis. Proposal for construction of these hutment is to be got approved from BHEL before organizing material and execution. One-time payment towards construction/development of labour colony of 03 Sets as per drawing attached and as above shall be paid by BHEL as per following payment terms: i) On receipt of material for each set of labour colony at site - 50% ii) On completion of installation of labour colony for each set - 20% iii) Handing over for accommodation of labour with all amenities for each set - 30% Land for labour colony shall be provided by BHEL free of cost as per availability outside project area within 5Km, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.	LS	1	₹ 1,50,00,000.00	₹ 1,50,00,000.00	Fixed Price

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
Continued...A	The labour colony shall be handed over for accommodation with all amenities within Three (03) Months from date of start. Date of start shall be decided jointly by BHEL/NTPC and Contractor based on availability of Land, Fronts, etc. If the contractor fails to maintain the required progress of work which results in delay in the completion of the labour colony as per above completion period, BHEL shall have the right to impose Penalty at the rate of Rs. 75,000/- per weeks of delay or part thereof beyond Three (03) Months of completion period for a maximum delay of Three (03) Months. In case, contractor fails to complete the labour colony within Six (06) Months Period, BHEL reserves the right to execute the work at risk and cost of contractor. Risk & Cost Amount= [(A-B) + (A x H/100)] Where, A= Value of Balance scope of Work new contract B= Value of Balance scope of Work of this contract being paid to the contractor. H = Overhead Factor to be taken as 5 In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).					
B	Handling at site stores / storage yard, transporting to site, inspection, preassembly, erection, alignment, welding, NDT, fixing of supports, water flushing, hydro testing, surface finish, supply & application of primer & finish paints/ Anti corrosive / Wrapping and coating as applicable including labelling & flow direction on the piping, pre-commissioning for piping and its associated items, etc. as directed by Engineer-in-Charge a. ERW G.I. Pipe as Per IS:1239 Heavy Class (Pipe Size-250NB/200 NB/150 NB/ 100 NB/ 80 NB) b. ERW, MS black pipe as Per IS:1239 Heavy Class (Pipe Size-250NB/200 NB/150 NB/ 100 NB/ 80 NB) Payment Term: i. Pre-Assembly: 25% ii. Erection/ Alignment: 10% iii. Welding: 25% iv. NDT: 15% v. Hydro Test: 10% vi. Painting & Wrapping & coating: 15%	MT	30			0.0449065385
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, matrial, equipments etc complete 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	7500			0.0500086586
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1500			0.0125263568
c	Depth exceeding 4 m but not exceeding 6 m	CUM	3742			0.0389999269
d	Depth exceeding 6 m but not exceeding 8 m	CUM	526			0.0068442225
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	1775			0.0388371493
103	Earth work in excavation in soft rock (rock without any recovery of exacavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), 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 1 Km, 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	20385			0.2019004151
b	Depth exceeding 2 m but not exceeding 4 m	CUM	19976			0.2374200430
c	Depth exceeding 4 m but not exceeding 6 m	CUM	2936			0.0418745020
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1232			0.0210854384
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
b	Depth exceeding 2 m but not exceeding 4 m	CUM	4500			0.1506039956
c	Depth exceeding 4 m but not exceeding 6 m	CUM	30			0.0012053828
d	Depth exceeding 6 m but not exceeding 8 m	CUM	5			0.0002409807
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
b	Depth exceeding 2 m but not exceeding 4 m	CUM	3500			0.0856445528
c	Depth exceeding 4 m but not exceeding 6 m	CUM	8109			0.2383200519
d	Depth exceeding 6 m but not exceeding 8 m	CUM	791			0.0279066689
A105	Extra over item no. 104 and 105 for breaking of the rock boulders into the size of 150mm - 700mm and stcked at designated location within a lead upto 1 Km including spreading / levelling of the rock pices etc. all complete.	CUM	8468			0.1531476288
106	Earth work in excavation upto any depth below ground level in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.					
c	Depth exceeding 4 m but not exceeding 6 m	CUM	800			0.1355790085
d	Depth exceeding 6 m but not exceeding 8 m	CUM	245			0.0497614718

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A106	Providing scaffolding pipes (6m Length) with clamps and barricading the excavated pit of required height as per safety norms. The scaffolding pipes with clamps will be under control of BHEL and can be used any where by BHEL during entire duration of contract period.	Nos	1400			0.0091535084
A107	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 300 mm compacted thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	17288			0.1063210900
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.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	12778			0.0082731014
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	12500			0.0080928548
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm compacted 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	32764			3.9273031068
200	CONCRETE WORK: Placing concrete work including cost of labour, (unless otherwise specified in BOQ/contract specification) and transportation, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)	CUM	359			0.0307855400
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 (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)	CUM	750			0.0642323549
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 (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)	CUM	1			0.0000856431
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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)	CUM	400			0.0342572559
A204	Providing and laying Design Mix Concrete under floors, paving, plinth protection, pipe encasing etc complete with 12 mm nominal size graded aggregate at any depth below finished floor level for the following grades. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
a	M 20	CUM	22			0.0018841491
E204	Extra over item no. 201, 202, 203, 204, A204 & 212 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).	CUM	469			0.0640699166
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, pipe encasement etc at all level below finished floor level, any shape, position or thickness etc complete including use with high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
a	M 25 Grade	CUM	421			0.0360386332
b	M 30 Grade	CUM	7029			0.6020244838
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 with high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
a	M 25 Grade	CUM	2097			0.1796107928
b	M 30 Grade	CUM	450			0.0385394129
E206	Extra over item no. A205, 206, 211 & 213 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
a	M 25 Grade	CUM	755			0.1160012180
b	M 30 Grade	CUM	2401			0.3734116627

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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 at all elevations below/above finished floor level except TG deck and top decks supported over/without 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 (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
a	M 30 Grade	CUM	5936			0.5444976752
E207	Extra over item no. 207 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
a	M 30 Grade	CUM	1781			0.2949024765
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	5936			0.1337233143
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). RMC Shall be free issue material from BHEL as per TCC					
Ac	M30 grade	CUM	509			0.0435923582
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) including preparation of surface, batching, mixing, leveling on roof / floor at all level or thickness, drains etc complete as per following. (Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder) RMC Shall be free issue material from BHEL as per TCC					
a	1:2:4	CUM	30			0.0025692942
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, chajias, beams, columns, boundary wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with following 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. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
b	M30	CUM	15			0.0031072329
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 1 with high performance PCE-based water reducing admixture of Type-G as per ASTM-C494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% cum water proofing cement additives 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. Watertightness is to be ensured including structural grouting if required. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
a	M25	CUM	9			0.0008407002
b	M30	CUM	131			0.0122368578
E214	Extra over item no. 214 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
a	M 25 Grade	CUM	3			0.0005550795
b	M 30 Grade	CUM	39			0.0082443784
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	9			0.0006076570
b	Reinforced cement concrete of all grades	CUM	4			0.0003979841
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	170			0.0007153104
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	105			0.0000339900
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	121			0.0021853329
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	22			0.0001723277
220	Design Mix Concrete of grade M10 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as Plum cement concrete with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm. (Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder) RMC SHALL NOT BE PROVIDED FOR THIS ITEM HOWEVER CEMENT SHALL BE PROVIDED BY BHEL FREE OF COST)	CUM	170			0.0368440203

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
221	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 sloped surface of canal lining or channel cast in alternate panels with provision of expansion gap/construction joints 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, compaction with special equipments, etc all complete as per specification & drawing for the following.					
b	M25 Grade	CUM	2			0.0001868223
222	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	89			0.0003226578
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	45			0.0070633812
300	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	6329			0.2257383399
A301	Fairface form work with good quality water proof ply wood with film face 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	1789			0.0682976678
A302	Fairface form work with good quality water proof ply wood with film face of required thickness and smooth surface above finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	8640			0.3965384882
B302	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301 & A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	878			0.1013961161
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	58			0.0009010867
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	15			0.0003932609
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	15			0.0007039833
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	14			0.0010322474
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	14			0.0014908260
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	23			0.0032338587
A305	Extra over item no.301 and 302 for curved form work for foundations, footings, Columns, beams, walls, trenches, domes, arches etc as per specification.					
a	Extra for Curve Shuttering for Item No. 301/301A	SQM	89			0.0007144199
b	Extra for Curve Shuttering for Item No. 302/ 302A	SQM	112			0.0010802608
400	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	1			0.0041756707
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR 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. (TMT steel shall be issued by BHEL free of cost)	MT	2345			1.5258887952
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	Nos.	14			0.0003679467
b	16mm Reinforcement bar	Nos.	14			0.0005782008
c	20mm Reinforcement bar	Nos.	17			0.0009838285
d	25mm Reinforcement bar	Nos.	4			0.0003143484
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR conforming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).					
a	12mm dia	Nos.	20			0.0000893382
b	16mm dia	Nos.	38			0.0002361512
c	20mm dia	Nos.	43			0.0003368223
d	25mm dia	Nos.	47			0.0005141820
e	28mm dia	Nos.	21			0.0003534475
f	32mm dia	Nos.	21			0.0004078315

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
g	36mm dia	Nos.	18			0.0004532713
500	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.(Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same).					
502	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc all complete.	SQM	1337			0.0113376656
A506	Providing and applying PU based high solid content (minimum 90%) of approved make 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.The coating shall have high viscosity, min. 400% elongation and forming a perfectly smooth permanently flexible seamless membrane which should have good adhesion to roof substrates.The cured film should have a very low water absorption rate (0.5% maximum at ambient temperature after 7 days), reinforcing layer of polyscrim cloth (non woven polyscrim cloth of 100% polyester with min. weight of 40gsm/sqm) or geo-textile non woven polyester (120-150 gsm), polymerised mastic base preparation, primer, making of fillets, cleaning & preparation of surface, vacuum removal of loose sand, expansion joints & sealing at suitable intervals, application by using a pneumatic machine as per manufactures recommendations, etc. all complete as per specifications, drawings and direction of engineer in charge. The application of waterproofing treatment shall be carried by authorised applicator of approved Manufacturer of Waterproofing materials.	SQM	1337			0.0919157998
A507	Providing and laying wearing course consisting of 20 mm thick plain cement mortar 1:4 (1 cement : 4 sand)) 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	1337			0.0297277315
A510	Providing and laying cement concrete chequered roof / floor tiles of 22 mm thickness and size min. 200x200 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 underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making).	SQM	267			0.0155729296
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	57372			0.5607990325
A511	Providing and applying two coats of bitumen paint of minimum 150 micron DFT with suitable primer, conforming to IS 9862 with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces including surface preparation etc. all complete.	SQM	100			0.0011134155
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	500			0.0036898810
A517	Providing and laying Cinder / foam concrete blocks in the toilets/sunken slab etc. after water proofing complete as directed by engineer in charge.	CUM	12			0.0017229590
A518	Providing and laying water proofing treatment for wet areas like toilets, kitchen, pantry of sunken slab etc. material like with three coats of Acrylic Polymer Modified Flexible Cementitious Waterproofing Coating material like Danocrete I-protect flex or equivalent make applied @ 0.70 to 0.8 0 Kg/m2 per coat, while embedding 34 gsm polyester scrim armor Armadura IP 34 or equivalent as reinforcing layer between first and second coat, the waterproofing coat applied by stiff bristle brush to build total thickness of 1.3 to 1.5 mm in three coats including reinforcing layer, while maintaining a gap of 4 to 8 hours between the coats all complete with water ponding test as per IS Code and as directed by engineer in charge	SQM	50			0.0022009685
A519	Providing and laying an angular fillet around parapet wall junction at roof level of min.50mm x 50mm, shall be trowel applied in cement-sand mortar in 1:3 proportion. A latex based bonding agent should be added (10% by weight of cement) and also a glass cloth must be inserted while the angle fillet is being constructed.	RM	250			0.0101633008
600	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.					
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	SQM	55			0.0020721395
b	20 mm wide joints.	SQM	15			0.0008360380
c	25 mm wide joints	SQM	160			0.0108338500
d	50 mm wide joints	SQM	66			0.0085961601
A601	Supplying & installation of engineering grade polystyrene foam backer rod (circular cross section) at 12 mm depth with minimum density of 22 kg/cum and compressive strength of 0.40 kg/sqm having dia. 25% more than the expansion joint width as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	SQM	12			0.0006494144
b	20 mm wide joints.	SQM	10			0.0007560915
c	25 mm wide joints	SQM	10			0.0009975524
Ad	50 mm wide joints	SQM	10			0.0015329019
A602	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	12mm X 25mm	RM	10			0.0001488855
b	20mmX25mm	RM	25			0.0005567078
c	25mmX25mm	RM	25			0.0006716205
d	50mmX25mm	RM	10			0.0004971547
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	5			0.0001343241
b	50mmX25mm	RM	5			0.0002485774
c	20mmX25mm	RM	10			0.0002226831

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A603	Providing and applying polysulphide based sealant with VOC content limited to 250 grams per litre as prescribed by GRIHA, conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	12mm X 25mm	RM	40			0.0008596743
b	20mmX25mm	RM	50			0.0014112106
c	25mmX25mm	RM	150			0.0049715761
d	50mmX25mm	RM	50			0.0030036587
A604	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.					
a	10mm X 40mm	RM	10			0.0000297794
b	12mm X 25mm	RM	25			0.0000679685
c	25mmX25mm	RM	278			0.0009178599
A605	Supply and installation of Polystyrene flexible board conforming to IS 4671 (type-1), 20 Kg/ Cum. as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /butimen etc. all complete.					
a	100 mm thick	SQM	2399			0.3453809561
b	50mm thick	SQM	50			0.0050039475
A610	Providing and fixing ribbed PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
bb	230 mm wide and 10 mm thick	RM	50			0.0011134155
d	230 mm wide and 6 mm thick	RM	50			0.0006602733
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	22			0.0003140650
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	20			0.0005987791
A615	Providing and fixing 300 mm wide Stainless steel strips (316 GRADE) over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete	Kg	15			0.0005874635
700	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.					
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	8			0.0529270860
702	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	11			0.0851356470
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.					
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	2			0.0021047632
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, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	15			0.0230813582
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	24			0.0001227303
b	PVC pipes / conduits of all diameters	kg	24			0.0005841647
d	Expansion anchor fasteners (galvanised) of HILTI make(HRD Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	8mm Dia	Nos	29			0.0000976188
ii	10mm Dia	Nos	29			0.0001107650
iii	12mm Dia	Nos	29			0.0001257820
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	HST3 M8	Nos	20			0.0002162088
ii	HST3 M10	Nos	20			0.0003146018
iii	HST3 M12	Nos	20			0.0005062153
iv	HST3 M16	Nos	10			0.0004524914
v	HST3 M20	Nos	10			0.0009224587
vi	HST3 M24	Nos	10			0.0015303156
f	Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:					
i	HAS-E5.8 M8	Nos	12			0.0002703302
ii	HAS-E5.8 M10	Nos	12			0.0003161639
iii	HAS-E5.8 M12	Nos	12			0.0003915122
iv	HAS-E5.8 M16	Nos	12			0.0006540732
v	HAS-E5.8 M20	Nos	12			0.0010875345
vi	HAS-E5.8 M24	Nos	10			0.0012189395
707	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	4			0.0234721179
800	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.					
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	2			0.0000803998

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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	2			0.0027299647
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	5			0.0066310318
900	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.					
A903	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 flat oil paint confirming to IS: 137 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	5			0.0013425844
904	Providing and fixing single or double steel door shutters with 45 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, air tight, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	49			0.0243226483
A904	Providing and fixing single or double steel door shutters with 35mm (min) thk flush design shutter as per IS 4351 comprising of two outer sheets of 18 gauge (1.2mm min.) steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge (1.0mm) 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	23			0.0118217341
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	5			0.0026841983
B905	Providing and fixing electrically operated, self operable/closing 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. Weight of aluminium section only shall be measured. (Glazing shall be paid separately)	SQM	5			0.0051114010
A906	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 2 mm wall thickness as per IS:1285, IS:733 and anodized(15 micron coating thickness) and electro color dyed 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 toughened glass of 8/10 mm 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	75			0.0031320212
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	122			0.0681407148
B907	Providing and fixing automatically closing fire proof steel flush doors along with frame of minimum 44mm thk flush shutter 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 center to center of approved make conforming to IS : 3614 (part 1) & tested to IS/ISO 3008,satisfying LPA regulations and shall carry a unique label with certification/test report number,fire rating embossment, fixed at all elevations, with or without removable panels,with panic bar,panic trim with following fire rating using galvanised MS sheets for frames conforming to IS 277, made out of minimum 1.6mm (16 SWG) for both frame and shutter, G.I. sheet (min.zinc coating 120 gsm), and leaves, mineral wool / PUF/ any other fire retardant insulation material filled with required density, mastic caulking and grouting the frame, reinforcing and insulating the shutters with fire retardant material, with panic devices, including all fittings, fire rated vision glass, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (min.64 kg/cum density) complete and shall be fire proof as per IS:3614, LPA requirements and as per specification. Minimum ratings shall be 2 Hrs. All hardware fittings shall be fire rated.	SQM	20			0.0345602340
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	48			0.0096768655
b	fixed type	SQM	30			0.0051840351

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc. including preparation of working 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.	Kg	15853			0.6620257620
A910	Providing, fabricating, designing, 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 A2 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 silicone 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 EGCA (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 confirming 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 verticals 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 Copping/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 copping 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 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.	SQM	5225			1.4145215765
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	10			0.0012648485
b	Floor mounted Hydraulic door closers as per IS 6315	Each	10			0.0018288514
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	15			0.0001645672
A912	Providing and fixing pressed steel frames (complying general requirements of IS 4531) fabricated from 1.2 mm thick 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	932			0.0187892472
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).					
b	Mechanically Operated	SQM	1			0.0003558565
c	Electrically operated	SQM	21			0.0181441228
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.					
Ae	3mm thick Polycarbonate sheet with profile matching with metal sheeting shall be provided. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 1000C. Suitable aluminium beading shall be used. The open ends of the sheet shall be sealed as per manufacturer's recommendations.	SQM	97			0.0133119294
h (a)	6 mm thick clear reflective toughened safety glass of Saint Gobain(India) or Asahi (India) or equivalent make and should have solar factor 25% or less, Maximum U-value 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28)	SQM	214			0.0427783212
h	6 mm thick clear toughened safety glass	SQM	25			0.0038762326
Ah	6 mm thick clear toughened glass conforming to IS 5437	SQM	642			0.1047295014
AhA	6 mm thick reflective toughened glass conforming to IS 5437. Reflective toughened glass, with technical characteristics: Solar factor 45% or less, U-value less than 5.7 W/m2K, VLT min 40% shall be used.Glass parameters may varies as per approved sample. The glass to be used should be from the manufacturers of glass like Saint Gobain (India) or ASAHI (India) or equivalent. The glass should be free from distortion and thermal stress.	SQM	74			0.0162873009
AhB	8 mm thick clear toughened glass	SQM	168			0.0334089911
AhC	8 mm thick clear toughened fire resistant glass	SQM	65			0.0561603802
I(b)	composite double glazing of fire resistant glass MIN.30 mm thick Hermetically sealed double glazed unit of one Fire resistant glass of min.14mm thick(outer side) clear, toughened, interlayered glass with 120 minute fire rated for both integrity & radiation control (EW 120) with symmetrical (Bi-Directional) fire protection and 6 mm thick toughened tinted glass (Inner side) with 10 mm air gap etc all complete as per specification.	SQM	156			0.2785554859

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
I(C)	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 Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) ≥62 %, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) $0.2 \leq 0.32$ and U- Value 1.2 TO 2.5 W/MSq K.The properties of performance glass shall be as per detail design values as approved by engineer incharge.The glass to be used should be from the approved manufacturers of glass and should be free from distortion and thermal stress.	SQM	75			0.1382409359
I(d)	Fire rated glass min.14mm thick fire resistant clear, toughened, interlayered clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass complying to BS476 Part22 or (EN-1634-1 :1999) with a light transmission of 86% according to EN410 standards and sound reduction of >=37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4 The glass shall provide bidirectional (Symmetrical) fire protection. as per specification and instruction of engineer in charge.	SQM	75			0.1425609652
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	3			0.0007308795
o	10 mm thick clear toughened safety glass	SQM	20			0.0054894439
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	28			0.0003788170
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	15			0.0016128484
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	5			0.0015607373
A920	Providing and erecting Roof skylight structure with 4mm thick embossed clear translucent polycarbonate IR sheet, both side UV coated, minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated Aluminium section with 60mm width top & bottom with EPDM rubber gasket in approved shape like dome, pyramidal etc, sealing of joints with sealant, screws with pvc cap, self tapping screws, EPDM rubber gasket etc as per drawing, standards, specification, instruction of engineer in charge etc all complete.	SQM	75			0.0250132285
A921	Providing & fixing 120 minutes Fire Rated, Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from minimum 1.6mm galvanized steel sheet pressed to form a profile of nominal size 60mm x 70 mm & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of approved shade and color. The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30minute full insulation, Non Wired Toughened Interlayered glass having a sound reduction of greater than 37dB, light transmission of 86% and compliant to class 1(B)1 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass shall be held in position with minimum 1.6mm G.I Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120). Design, Shop drawings along with hardwares for the item with all construction and anchoring details, etc. along with fire rating test reports shall be got approved before execution.	SQM	40			0.0656644446
A922	Providing and fixing electrically operated, self operable/closing, approved anodized aluminium framed glass door with 10 mm thk. tinted glass, all complete. Automatic Sliding operating system comprising of Advanced DC brushless motor, Automatic Reversing Safety Device, Suitable for door weight 100 kg, Opening speed : 90-110cm /sec (adjustable), Closing Speed : 40-110cm/sec (adjustable), opening time : within 1-9 seconds after door stopped in opening, controller : 8 Bit micro computer, Motor (Dortexor equivalent) : DC12V, 35W brushless motor, Power Voltage : AC 110V - 240V, 50Hz - 60Hz, Power Consumption : 45W including Infra Red Sensors 2No both sides, rails & top & bottom as required, any aother accessories as required etc. all complete of best make and quality as approved by Engineer in charge. The door shall be double panel sliding door of approx. area 5 sq.m. to 7.5 sq.m. each.	SQM	20			0.0691204680
A923	Providing and fixing Electrically operated, self operable/closing, G.I. framed with fire resistamt glass, sliding doors with Fire resistant glazed door system shall be of uniform profile 50X50 mm with 14mm EI 20 glass for Interior application. FIRE RESISTANT GLAZED DOOR SYSTEM shall have 120 minutes of integrity and radiation control (EW 120) with symmetrical (Bi-Directional) fire protection. The frames shall be cold rolled profiles as per EN standard EN 10327 / Indian Standard IS 513. The door frames are cold rolled from 1.6 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The door shutter shall have the top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The glass must be minimum 14mm clear,120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass with a light transmission of 86% and a sound reduction of 38 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4. The shutters shall be fixed to the frame using Weld-on hinges of dimensions 179mm X 20mm. The profiles shall have groves to incorporate Fire Resistant gaskets. The glass shall be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. Beading shall be clipped on using Stainless Steel selftapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm Calcium Silicate setting blocks. The door shall be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf (in case of double leaf only)shall be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a TUV audited facility. The maximum glazing size shall be as per the test certification. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c. The doors shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. The door shall also be subjected to durability tests as per EN 12400 for C5 classification (200,000 cycles) all complete as per specification. The door shall have water tightness level of 8A when tested as per EN 1027. Fire Rated Door shall be of Makes- shaktimat, Nauvair, ASI or equivalent. all complete as per specification (item includes the cost of glazing). Design Shop drawings along	SQM	15			0.0777605265

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A924	Providing and fixing of fully glazed door with steel frame of 120 minutes of integrity and radiation control (EW 120) with symmetrical (Bi-Directional) fire protection. The frames shall be cold rolled profiles As per EN standard EN 10327/Indian Standard (IS 513). The frames are cold rolled from 1.5 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The glass shall be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. Beading shall be clipped on using Stainless Steel selftapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 5 mm Calcium Silicate setting blocks. The maximum glazing size shall be as per the test certification. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c. The Partitions shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. all complete as per specification and approved by Engineer incharge.	SQM	15			0.0145452706
A925	Providing and fixing 3M privacy film on glass door, partiton etc.as per design and direction all complete as per specification and approved by Engineer incharge	SQM	12			0.0014790467
1000	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. Cement for preparation of mortor shall be free issue material from BHEL.					
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	334			0.1195434173
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.					
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	691			0.3101819967
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	198			0.0955532547
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	98			0.0054050455
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.					
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	10			0.0004095710
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	10			0.0003767169
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	SQM	10			0.0004464690
d	Using burnt clay bricks of class designation 5.0 of nominal dimension	SQM	10			0.0004332266
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	1			0.0000564804
A1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	CUM	5			0.0018128772
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	3			0.0000339848
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	5			0.0006476645
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	3			0.0000407828
A1009	Supply and placing in position GI of 0.9 mm welded wire mesh/ chicken wire mesh for encasing of steel sections in concrete/ brick/ plaster at the junction of RCC and brickworks including cutting, bending, fixing etc. complete.	SQM	10			0.0002563448
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	5			0.0002955102
A1012	Providing Autoclaved Aerated Concrete (AAC) block masonry with blocks having dimensions of 625 mm x 250 mm. thickness ranging from 100 mm to 300 mm conforming to IS 2185(part-III) .The jointing cement sand mortar in the composition of 1: 6 (Cement: sand) shall be used with suitable plasticizer(optional). Sand having modulus of fineness 1.1 shall be used. The horizontal and vertical joint thickness shall be approximately 10 mm. In case of partition walls (100 mm /125 mm thick) the joint reinforcement i.e. 1 number of 6-8 mm diameter bars shall be placed at every alternate course to be anchored properly with the main structure. All other structural requirements like stiffening of masonry, joint reinforcement etc. in the AAC masonry work strictly be carried out as per instructions laid down in IS 6041, IS 1905 etc all complete as per specification.	CUM	770			0.2763405887

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1013	Providing and fixing 190mm x 190 mm x 80 mm glass bricks of approved make and design with white CM 1:2 (1 white cement : 2 sand). Two numbers of 5 mm thick GI wires to be passed through PVC spacers in each joint horizontal as well as vertical by drilling holes in surrounding surface (brick or RCC) and filling the same with Hilti or equivalent chemical (rebaring). The PVC concealed spacer (with provision for passing the 2 no. GI wires in horizontal and vertical direction) shall be provided to maintain grooves/spaces for GI wire and white cement mortar at the junction of two glass bricks. The sample of the glass brick shall be got approved by Architect. The glass bricks shall be fixed with placing GI wires vertically as well as horizontally after passing through the spacer and having minimum lap length of + 200 mm as per the site conditions at all the places, heights and shapes, etc. complete, as per the details and drawing to the satisfaction of Engineer-in-charge. Joints along the periphery of glass bricks to be filled with approved make and color weather silicone sealant of DOW corning 789 or equivalent	SQM	5			0.0028816352
1100	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. Cement is free issue material from BHEL.					
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, before starting of masonry work.					
b	50mm thick	SQM	94			0.0019593763
1200	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. Cement is free issue material from BHEL.					
A1201	Providing 18mm thick plaster in two layers outside the building/boundary wall/rough surface of internal 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	4546			0.0844523398
1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	6013			0.0906955108
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	SQM	50			0.0006853715
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	7615			0.1000683568
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	450			0.0011070507
A1207	Providing drip course on plastered surface at all elevations for all type of work such as chajias, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	450			0.0033208929
B1207	Providing moldings and cornices on plastered surface at all elevations for all type of work such as chajias, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	320			0.0019056974
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	200			0.0062792489
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	70			0.0007793909
1300	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.					
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	100			0.0002285007
A1304	Two or more coats of Low VOC (volatile organic compound) acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge	SQM	11683			0.0728328759
A1305	Providing and applying two or more coats of low VOC (volatile organic compound) acrylic emulsion paint as per IS 15489, relevant latest code 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 50 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	49			0.0004323382
B1305	Providing and applying 2 or more coats of oil resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer 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	111			0.0016957860
A1306	Providing and applying 2 or more coats of acid/alkali resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer 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	556			0.0116939068
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	1			0.0000126231

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete. 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.	SQM	100			0.0005204771
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	1418			0.0090326985
1314	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 nominal thickness of 2.5 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	110			0.0070281922
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	1173			0.0080031047
1317	Providing and applying 2 mm thick white cement 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	5279			0.0341716629
A1317	Providing and applying 2 mm thick Acrylic wall putty 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	5279			0.0526258204
A1319	Providing and applying two or more coats of Premium Acrylic Smooth Paint with Silicone additives weather coat 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 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.(The sealant should have VOC content limit less than 250 grams per litre as prescribed by GRIHA. All necessary documentation (certificates, manufacturer declarations) to be provided by the contractor for green building documentation).	SQM	1182			0.0133900136
A1322	Providing, fixing & Designing GRC Tile of size 250mmx75mmx15mm conforming to IS:1237 in approved design, size, texture, thickness, pattern and color on walls upto any height as per the architectural drawing & approval, including necessary scaffolding required for installation. The Tile shall conform to IS :1237-1980. The composition of tiles should be '43' Grade White Portland cement, reinforced with Alkali Resistant Glass Fiber and the pigmentation should be done with exterior grade synthetic inorganic iron oxide pigments. The pigmentation should be homogeneous and in accordance with British Standards BS EN 12878:1999. The other additives should be fine washed graded quartz, super plasticizers and integrated water proofing agents and others. The tiles should be produced with high vibration technology and should have compressive strength equivalent to M-40 Grade@28 days. The top surface of the tiles should be sealed with acrylic lacquer resulting in surface water absorption of tiles, less than 1% and water absorption by 24 hrs immersion method, less than 8%. The tiles should be applied on a rough plaster of cement mortar 1:3 (1 cement: 3 coarse sand) and the fixing of tiles should be done by tile adhesive Unistone, Luxture or equivalent as per manufacturer's laying instruction. Installation to be done by specialized vendor in strict supervision if required as per the manufacture's specification. The colour, texture and pattern finish shall be as finalized by Architect engineer.	SQM	174			0.0157075561
1400	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.					
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	5144			0.1878074769
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring without 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) (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	201			0.0071433118
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm well graded) and top layer of 10mm 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 as per specification. (Quoted item rate shall be inclusive of providing glass joint strips).	SQM	51			0.0015912793
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum/quartz chips topping pigment content is 3.5 kg per 50 Kg of white Cement) of size 300X300X25mm 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	1975			0.1412738124
b	Laid in skirting	SQM	51			0.0051073166

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved specified colours, pattern, sample, different texture, and should be laid on the subbase and bedding of sand minimum 20mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing)					
Ab	80mm	SQM	110			0.0060668878
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	50			0.0052641284
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	300			0.0617368468
A1412	Providing and laying 20mm thick Mirror polished (6 layers of polish)/Flame finish (making top surface rough by burning / shot blasting)Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 1.5 sand : 3 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, moulding, cornice, granite polishing etc. all complete.	SQM	300			0.0503371536
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	150			0.0311306492
1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, 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					
b	10mm thick tiles In flooring	SQM	332			0.0232007270
d	10mm thick tiles In skirting and dado upto specific height	SQM	24			0.0019938214
A1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 with Matt/ Glazed from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 average 40mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following					
b	10mm thick tiles In flooring	SQM	24			0.0021983627
D1416	Providing and laying matt finish vitrified ceramic tiles of polished variety of size 600x600 / 800x800 from reputed / approved manufacturer, complete including underbed of 40.5 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5mm well graded) with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	9.0 mm (min.) thick tiles In flooring	SQM	141			0.0136455986
b	9.0 mm (min.) thick tiles In dado	SQM	20			0.0020391229
E1416	Providing and laying digitally glazed vitrified ceramic (with recycle content)tiles and matt finished of size 600x600/800x800/1000x1000 from reputed / approved manufacturer, complete including underbed of 40.5 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5mm well graded) with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout of 0.7kg of organic coated filler of desired shade (0.1 kg hardner and 0.3 kg resin per kg) or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	9.00 mm (min.) thick tiles In flooring	SQM	394			0.0439965695
b	9.00 mm (min.) thick tiles In dado	SQM	15			0.0017468470
A1417	Providing and laying Digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer Simpola, varmora or equivalent complete including underbed of cement mortar 1:3 minimum 40mm thick underbed for flooring and 12mm thick underbed for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following					
b	9.00 mm (min.) thick tiles In flooring	SQM	568			0.0582418602
d	9.00 mm (min.) thick tiles In skirting and dado upto specific height	SQM	57			0.0061915661
C1417	Providing and laying vitrified ceramic tiles of matt finish polished variety of size 1000X1000 from reputed / approved manufacturer Simpola, varmora or equivalent, complete including of 40mm average thick underbed of cement mortar 1:3 with neat cement slurry, and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4 mm stainless epoxy grout SP- 100 of Laticrete or approved equivalent in approved colour to match colour of tile etc. all complete for following.					
a	10 mm thick tiles In flooring	SQM	101			0.0121609607
c	10 mm thick tiles In skirting and dado upto specific height	SQM	4			0.0005015589
A1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of approved manufacturer simpola, varmora 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, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following					
b	600X600 mm	SQM	39			0.0041859252
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	8			0.0022320289
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	300X300 mm	SQM	25			0.0015422936
b	600X600 mm	SQM	6			0.0004060586

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A1421	Providing and laying Heavy Duty anti skid (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm (approved size), vitrified tiles of reputed / approved manufacturer Simpolor, 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 all complete.	SQM	96			0.0090917746
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, pointing joint of bedding 20mm deep x 6mm wide with epoxy/Furane mortar etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
Aa	12 mm thick	SQM	130			0.0177144815
a	20mm thick	SQM	260			0.0423801205
b	38mm thick	SQM	65			0.0145039798
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado bedded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
Ac	75mm thick	SQM	20			0.0070699561
A1425	Providing and laying polished Marble slabs (rajnagar plain white or equivalent approved shade/color /design) 20mm thk in staircase landing/skirting and corridors over minimum 30 mm thick underbed of 1 cement : 1.5 sand : 3 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be 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 moulded marble nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	75			0.0140165509
1426	Providing and laying marble skirting /dado (Aranga white or approved shade/color /design) equivalent of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed 20mm cement mortar 1:3, with thick cement slurry 3.3kg/sqm spread over the surface scaffolding etc. all complete.	SQM	5			0.0008619351
A1427	Providing and fixing Designer digitally glazed ceramic tiles of approved color and design as per IS: 15622 of size 300x300mm / 300x450mm, 300X600 of reputed / approved manufacturer Simpolor, varmora or equivalent of approved finish, size in dado, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1 part 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 as instructed by engineer incharge for following thicknesses.					
a	5mm thick	SQM	56			0.0035199921
b	7mm thick	SQM	175			0.0107960555
A1428	Providing and laying 2mm thick heavy duty antistatic PVC(Virgin) tile in flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete as per specifications.	SQM	20			0.0004285354
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	50			0.0001715340
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	50			0.0003301366
A1431	Providing and fixing, laying min.11mm wooden panel flooring and skirting of pergo, greenlam or equivalent 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 system 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.	SQM	110			0.0140705772
B1431	Providing and laying minimum 50 mm thick wooden flooring, consisting of 37 mm thick hardwood planks, finished with 11mm thick wooden flooring of greenlam, pergo or equivalent with min. plank size 193x1195mm (material class shall be 34 as per EN13329) of approved color and shade, over 2 mm expanded polystyrene foam and polythene sheet under laying all complete as per manufacturer specification.	SQM	24			0.0085567729
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, ladders, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
B1502	METAL DECK SHEET Type-II, Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the floor slab 150 mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) over primer coat of minimum 5 micron(nominal) and minum 10 micron (nominal) SMP or super polyester paint over primer coat of minum 5 micron (nominal) on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. (Metal Deck Sheet shall be issued by BHEL free of cost)					
a	Span Upto 1800mm	SQM	2187			0.0519924454
A1503	Providing and fixing shear anchor studs for fixing metal deck sheet to floor structural beams conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19mm diameter and 100mm length manufactured from cold drawn round steel barsconforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete as per specification.	QUINTAL	7			0.0121690334
1514	Providing and installing under deck insulation with resin bonded rock wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.6 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	100			0.0041753371
1516	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	67			0.0050875020
1600	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.					
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 preperation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.					
aa	12.5mm thick GRG board conforming to IS: 2095 with galvanised light gauge steel load bearing supporting GI frame (minimum 0.8mm thk and grid size of 600x1200mm.) and finished flat (seamless). All GRG board to be used should be with appropriate % of recycled content. The contractor should provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in maufacturing of board to be used)	SQM	10			0.0009049828
A1601	Providing and fixing 12.5 mm thick tapered/square edge glass fibre reinforced gypsum board conforming to IS : 2095 having fine texture finish including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. , including providing and fixing of frame work at all levels, for all kind of work, consisting of light weight galvanised steel member (minimum 0.8 mm thick and galvanised as per IS : 277) having maximum grid size of 1200 mm x 600 mm for supporting 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, providing angle section of minimum 25 mm width along the perimeter of ceiling, supporting grid system (minimum 0.8 mm thick and galvanised as per IS : 277), expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.	SQM	79			0.0073160855
A1602	Providing, fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density48kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also beprovided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate.(All mineral fiber board to be used should be with appropriate % of recycled content. The contractor to provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in maufacturing of board to be used)	SQM	79			0.0085961853

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A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and of Luxalon Hunter douglas, or approved equivalent with corrosion resistant aluminium alloy panels of size 600 mm x 600 mm and 0.6 mm thk. with clip on system ,perforation patterns in combination with built in nonwoven tissue, acoustic fleece for providing good acoustic properties and installed with T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. The whole system shall be level adjusting arrangement and shall be suspended as per manufacturer. 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	394			0.0901865676
B1607	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).The work to be complete as per specifications, approved 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%.	SQM	110			0.0192829862
A1611	Providing , Design and fixing Aluminium ceiling trap door in the false ceiling matching with false ceilign material with min. 2mm thick powder coated inner and outer aluminum frame, corner fitting plate with stainless steel of 2mm thick fixture are with self-drilling screws and sealing strip of 6mm width and 6mm thick. Hinge operated through Push-lock mechanism.	SQM	5			0.0015329019
1700	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.					
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	90			0.0075185098
A1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.	RM	1148			0.1423127743
C1704	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239 (part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over a coat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.	RM	140			0.0165305055
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	50			0.0021815284
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	75			0.0048016693
1800	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.					
A1801	Providing and Filling in trenches, plinths, area paving, grade slab, other underground structures, etc. with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per drawings/specifications. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	827			0.0946498778
B1802	Providing and Filling in trenches, plinths, area paving, grade slab, other underground structures, etc. with graded stone aggregate of size range 40 mm downwards nominal size rammed, consolidatedin layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per drawings/specifications. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	841			0.0962521732
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	10			0.0021316925
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	5			0.0008138997
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	20			0.0002433962
A1804	Providing and fixing weep holes in panels/ drains etc. consisting of 75 mm dia HDPE pipe sleeves including sand (250sq x 150 mm thick), aggregates (250sq x 150 mm thick), 200mm dia geo-textiles (pasted on concrete surface) etc. all complete as per specifications, drawings and guided by engineer-in-charge. (item is inclusive the cost of materials like HDPE pipe, sand, aggregates, etc.).	EACH	2500			0.0327155815
1807	Anti termite chemical treatment of soil with Chlorpyriphos/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	500			0.0051788511
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	135			0.0948454472
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	each	40			0.0283276183

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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.	NO	40			0.0219940407
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items)	NO	40			0.0018824729
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	NO	40			0.0010927024
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	40			0.0675616401
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	40			0.0486981345
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	50			0.0003560280
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	75			0.0031121059
A1823	Providing and laying cinder filling or foam concrete blocks filling in sunken slabs of toilets or where ever light weighted filling material required ,etc complete as directed by engineer in charge.	CUM	5			0.0006861819
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	234			0.0000757491
1844	Providing engineering services for Rain water harvesting including preparation of Rain water harvesting scheme, collection of required data, submitting to ground water board and getting approval from Customer and Ground water board at start & completion of work etc. complete as per statutory norms. The Engineering firm/person should be approved/accepted by ground water board and shall have similar experience of rain water harvesting for complete power plant. The scope shall include rain water harvesting for entire plant including Coal handling plant, ash handling plant inside plant boundary. The scope shall include preparation of rain water calculations, calculations for ground recharge/collection, economical design of rain water harvesting with different options under discussion with BHEL/NTPC and submit design, drawings, report to Ground water board, obtain approval from Ground water board & Customer and on completion of work get the completion approval for rain water harvesting from Ground water board. This includes visits to site with/without ground water board officials and rate of this item shall include all expenses of consultancy, site visits etc. required from start of work till final obtaining of completion approval from ground water board. Payment for execution of rain water harvesting ponds shall be paid separately.	LS	1			0.0734930115
1849	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 or equivalent to 8% to 10% by volume including compaction. Separation layer of one tack coat @ 1Kg/sqm shall be spray after first layer of 30mm and sand shall be sprayed on the final surface of 20mm @ 0.5 cum/100 sqm. etc. all complete as per specification and as guided by engineer-in-charge.	SQM	123			0.0049366512
1850	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	123			0.0049047694
2000	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.					
2003	Supplying and erecting in position 2.4 m high PVC coated galvanised 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. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. A2008)	RM	30			0.0047043465
A2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 4 mm (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 2.5 mm. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. 2007)	RM	450			0.0741075961
A2006	Supplying and fixing 600mm high concertina (with maximum loop spacing of 125 mm) on top of boundary wall including GI tension wires, clips, anchors, accessories etc. all complete. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. All nuts, bolts, fasteners, clamping strips, clamps, clips, etc., shall be galvanised. (Structural post shall be separately under ST No. A2008)	RM	250			0.0055185494

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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	3			0.0218042452
A2008	Supply, fabrication and fixing of mild steel posts for fencing, etc. including chlorinated rubber paint over a suitable primer etc all complete as per specification.	MT	14			0.0955949884
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	13			0.1036780748
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	7			0.0533117391
2100	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.					
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.)	NOS	10			0.0005113993
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	10			0.0003152527
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.	NOS	5			0.0002032660
b	50mm nominal bore.	NOS	5			0.0004259491
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive bituminous 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:					
b	20 mm nominal bore.	RM	100			0.0033014240
c	25 mm nominal bore.	RM	100			0.0036963322
d	50 mm nominal bore.	RM	100			0.0053211240
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			0.0011813840
b	20 mm nominal bore.	RM	50			0.0013238010
c	25 mm nominal bore.	RM	50			0.0015212551
d	32mm nominal bore.	RM	50			0.0017963834
e	50 mm nominal bore.	RM	50			0.0023336510
f	65mm nominal bore.	RM	50			0.0027803420
A2106	Providing and fixing 600mm x 900mm x 6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws , edge mounting with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	5			0.0007677470
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	NOS	2			0.0001004666
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	4			0.0002459905
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	4			0.0001747826
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.	NOS	4			0.0001652002
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	NOS	2			0.0000595553
A2113	Providing and fixing rotating type chromium plated brass shower rose with 15 or 20 mm inlet all complete.	NOS	8			0.0001916158
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent conforming to IS:12701 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	500 litres capacity	NOS	1			0.0002648276
b	1000 litres capacity	NOS	2			0.0010593103
c	2000 litres capacity	NOS	2			0.0021184882
A2115	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	NOS	1			0.0052644965
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	2			0.0000906285
A2117	Providing and fixing metal storing cabinets all complete.	EACH	2			0.0019420236
A2118	Providing and fixing electric operated hand dryer with photo voltaic control etc all complete.	EACH	2			0.0006473420
A2120	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	5			0.0006473420
2200	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.					
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.					
b	Colored	EACH	3			0.0020804881
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 mounted over 20 mm thk granite beveled edge counter counter. The Basin shall be fitted with approved shape bib cock, photo-voltic 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 as per IS: 2556 with two taps, necessary union including cutting of notch in granite counter slab etc complete as per specification	EACH	10			0.0050492559

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A2203	Providing and fixing stainless steel kitchen sink of size size 610 x 510 mm, bowl depth 200 mm with drain board of at least 450 mm length with trap, hot and cold water mixer, conforming to IS: 13983 including all fittings etc. all complete.	EACH	2			0.0012878192
A2204	Providing and fixing colour glazed vitreous china European type water closet of approved make 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, water faucet etc all complete.					
b	Wall mounted	EACH	5			0.0028696601
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	5			0.0019899264
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	10			0.0053340899
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 610x375x390mm 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	10			0.0077939779
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	25			0.0005680406
b	110mm dia pipes	RM	15			0.0004563765
c	160mm dia pipes	RM	15			0.0007078627
d	200mm dia pipes	RM	20			0.0011626178
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	20			0.0010344454
b	300mm dia	RM	35			0.0031221197
c	450mm dia	RM	30			0.0044705391
d	600mm dia	RM	20			0.0040808379
e	900mm dia	RM	15			0.0053861952
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	13			0.0004451796
b	250mm dia	RM	13			0.0005798222
c	300mm dia	RM	13			0.0007203580
d	450mm dia	RM	13			0.0010704468
e	500mm dia	RM	15			0.0014497154
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:					
Aa	250mm dia	RM	10			0.0009606535
Ab	300mm dia	RM	7			0.0008025065
a	450mm dia	RM	5			0.0008522237
b	600mm dia	RM	3			0.0006787371
c	900mm dia	RM	3			0.0012539628
A2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx600mm including frame from reputed manufacture conforming to IS:4111 etc all complete as per specification.	EACH	5			0.0034936969
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	5			0.0034729810
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:					
a	100x100mm P or S Type.	EACH	5			0.0005851969
b	150x100mm P or S Type.	EACH	3			0.0003645189
c	150x150mm P or S Type.	EACH	3			0.0003808313
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	4			0.0004163702
A2214	Providing and fixing C.I. floor traps with stainless steel grating etc all complete.	EACH	5			0.0005725738
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	10			0.0009956112
A2217	Providing and installing approved brand single tap water efficient water cooler of 50 L cooling capacity all complete.	EACH	1			0.0021418567
AA2217	Providing and installing approved brand single tap water efficient water cooler of 80 L cooling capacity all complete.	EACH	1			0.0027872955
A2218	Providing and installing approved brand single tap water efficient water cooler of 150 L cooling capacity all complete.	EACH	1			0.0052644977
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	2			0.0023148906
2220	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.					
a	75mm dia pipes	RM	5			0.0004848570
b	100mm dia pipes	RM	5			0.0006246849
c	150mm dia pipes	RM	10			0.0018086695
d	200mm dia pipes	RM	10			0.0026023107
e	250mm dia pipes	RM	10			0.0037519857
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation, backfilling, concrete to be paid seperately)					
a	75mm dia	RM	10			0.0011127762
b	100mm dia	RM	10			0.0014960031
c	150mm dia	RM	20			0.0044446419
d	200mm dia	RM	20			0.0065472059
e	250mm dia	RM	20			0.0083455131
f	300mm dia	RM	16			0.0081958535

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A2223	Supply, laying and jointing sand cast iron pipe conforming to IS: 1729 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	110mm dia pipes	RM	5			0.0005523139
b	160mm dia pipes	RM	5			0.0007625371
A2225	Providing and fixing energy efficient geyser of 25 liters capacity including fittings etc all complete.	EACH	1			0.0005178736
2300	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.					
A2301	Taking delivery from BHEL stores, transportation, 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, toe gaurd/kick plate, 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 seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL (BHEL to supply steel free of cost).	MT	38			0.0592072001
A2302	Extra over ST NO. A2301 for blast cleaning of steel structures by shot blasting to near white metal finish conforming to Sa 2 ½ finish of Swedish standard ISO-8501 and shall have profile of 40 to 60 micron and applying two component self/moisture curing Inorganic Zinc ethyl Silicate Primer Coat (Solid by Volume Minimum 62+/- 2% and Zinc content %age on dry film minimum 80%), Zinc dust pigment conforming to ISO 3549 and Zinc dust pigment content determined in accordance with ASTM D 520, Minimum Dry Film Thickness (DFT) of primer coat of 70 Micron, instead of primer coat of red oxide zinc-chromate, including touch-up painting, using Airless spray technique in shop etc all complete.	MT	38			0.0145882613
A2305	Providing and applying Intermediate Coat of two component Polyamide Cured pigmented with Micaceous Iron Oxide (MIO content minimum 30%) Epoxy based Paint (Solid by Volume Minimum 80 +/- 2%) of Minimum 100 Micron DFT. This Coat shall be applied in Shop after an interval of Minimum overnight (from the application of Primer Coat) by Airless spray technique. Intermediate Coat shall be followed with the application of Finish Coat of two pack isocyanate Cured colour acrylic based Paint (Solid by Volume Minimum 55 +/- 2 %) of Minimum 70 Micron DFT with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied in shop/site after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer. The painting includes protection and cleaning, scaffolding, touchup etc. all complete as per specification.	MT	38			0.0133962417
2401	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:					
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	2104			0.0089887528
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/feignorage 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	1000			0.0491331326
A2405	Providing & Laying granular sub-base using close graded Material conforming to MORTH specification (Table 400-1, Grading-I), mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	1578			0.2701879486
A2406	Providing & Laying water bound macadam sub base / base course with stone aggregate 53 mm to 22.4 mm size stone conforming to MORTH specification (Table 400-7) mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	458			0.0783906329
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in charge.					
2602	Earth work in stripping of top soil upto a maximum depth of 0.30 m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm 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.	Sq.m	3728			0.0053080969

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
2603	Earth work in excavation upto any depth below ground level in all types of soil including ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), shoring & strutting (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	8075			0.0440175943
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with surplus stacked soil/soft rock and compacted as specified including re-excavation of stacked earth, all lifts, dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	7500			0.0514645084
2610	Extra over ST No. 2601 to 2609 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1 km.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	3200			0.0019784296
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	300			0.0001854778
2612	Providing and laying 300mm thick stone pitching including caulking with 1 cement: 4 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	7282			1.2920457324
	TOTAL PART-III				₹ 1,50,00,000	20.7827499671
Part-IV (TG Deck-2)	Balance civil works of TG Deck Unit-2 including TG Column, Retaining Wall and Auxiliary Pedestal, Condensor Wall, etc.)					
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm compacted 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	500			0.0599332058
B111	Supplying and filling clean and well graded sand conforming to IS 383 with grading Zone I to III upto any depth under floors, around foundations, plinths, tank foundation etc. in layers not exceeding 300mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by mechanical means, dressing, royalty (if any) etc. all complete.	CUM	500			0.0599332058
200	CONCRETE WORK: Placing concrete work including cost of labour, (unless otherwise specified in BOQ/contract specification) and transportation, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Ready Mix Concrete (RMC) shall be issued by BHEL free of cost at Batching Plant of BHEL's RMC / Other Agency)					
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	10			0.0008564314
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			0.0042821570
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	50			0.0042821570
E204	Extra over item no. 201, 202 & 204 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).	CUM	35			0.0047156575
207	Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/PD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over/without 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.					
b	M 35 Grade	CUM	1310			0.1201637390
E207	Extra over item no. 207 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
b	M 35 Grade	CUM	393			0.0663828654
A208	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/without vibration isolation system (excluding supply and installation of vibration system) and top deck of TG foundation at all levels including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% 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%.					
Ad	M 50 Grade	CUM	1380			0.2098839208
E208	Extra over item no. A208 for providing Ready Mix Concrete (RMC) at Batching Plant (Cement shall be issued by BHEL free of cost).					
Ad	M 50 Grade	CUM	414			0.0918808012
210	Extra over ST Nos. 205 to 208 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	2248			0.0506418481

PROJECT: 2X660 MW NTPC TALCHER TPS, ODISHA, INDIA						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:- BALANCE CIVIL AND ARCHITECTURAL WORKS OF CHP, MPH FOR UNIT-1, SG FOR UNIT-2 AND TG DECK FOR UNIT-2 AT 2X660 MW NTPC TALCHER TPS						
ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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. (RMC shall not be provided for this item however, cement shall be provided by BHEL free of cost)	CUM	5			0.0010836477
300	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	1105			0.0394136544
B302	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301, 302 & A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	95			0.0109711060
A303	Plywood Formwork with filmface of good quality water proof of minimum 18mm thickness 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. Payment Terms: (a) On approval of staging drawing - 2.5% (b) On receipt of staging materials (complete set for each deck) - 15% (c) On completion of erection of staging materials (complete set for each deck) - 15% (d) Balance payment shall be made on execution of balance work as per item description	SQM	3599			1.2162970218
B303	One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 18mm thick with required battens as per specification for execution of Item No. 303 & A303. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge. Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.	Nos.	625			0.1149336581
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	5			0.0000776799
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	5			0.0001310870
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	5			0.0002346611
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	5			0.0003686598
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	5			0.0005324378
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	5			0.0007030128
400	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:					
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR 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. (TMT steel shall be issued by BHEL free of cost)	MT	764			0.7903743770
700	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.					
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. Payment Terms: a) On receipt of material site - 60% b) Execution as per item description - 40%	MT	25			0.1653971438
A701	Extra over item no. 701 and 703A for preparation of Steel surfaces by Manual Cleaning and provided with Chlorinated Rubber based paint with Primer Coat of Zinc Phosphate of Minimum 50 Micron Dry Film Thickness (DFT), etc. all complete as per specification.	SQM	26			0.0003282013
702	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	2			0.0154792085
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.					
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	15			0.0210476318
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, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	12			0.0181105151
	TOTAL PART-IV					3.0684396929
	GRAND TOTAL = PART-I + PART-II + PART-III + PART-IV				₹ 4,50,00,000	100.0000000000