

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, form existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
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.

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, 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), 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	118595	-	-	0.6356973307%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	67415	-	-	0.4526932369%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	10894	-	-	0.0917626664%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1163	-	-	0.0122623967%
103	Earth work in excavation in soft rock 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), 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	100	-	-	0.0007952000%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	100	-	-	0.0009542400%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100	-	-	0.0011450880%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	-	-	0.0013741056%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1017	-	-	0.0160708525%
f	Depth exceeding 10 m but not exceeding 15 m	CUM	727	-	-	0.0126370312%
g	Depth exceeding 15 m but not exceeding 20 m	cum	436	-	-	0.0087062033%
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including 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 for following depths below ground level.			-	-	
a	Depth from ground level but not exceeding 2 m	CUM	100	-	-	0.0020145067%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	100	-	-	0.0024150519%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100	-	-	0.0028980623%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	-	-	0.0034753186%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	100	-	-	0.0039995616%
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), 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 for following depths below ground level.			-	-	
a	Depth from ground level but not exceeding 2 m	CUM	50	-	-	0.0011368415%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50	-	-	0.0013636208%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50	-	-	0.0016375230%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	50	-	-	0.0019644386%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	50	-	-	0.0022589571%
106	Earth work in excavation in hard rock requiring chiselling including setting out, levelling, deawtering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material 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	100	-	-	0.0027920356%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	100	-	-	0.0033504428%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100	-	-	0.0040205313%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	-	-	0.0048246376%
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.			-	-	

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TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
a	at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	500	-	-	0.0027684742%
b	at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	2296	-	-	0.0140652624%
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 earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete. for the following:			-	-	
a	at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	122351	-	-	0.3675532908%
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	44453	-	-	0.0288029106%
110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:	CUM	30603	-	-	0.7282625601%
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.			-	-	
	For 80% Relative Density	CUM	421	-	-	0.0510104322%
112	Extra over item no. 101 for shoring and strutting in trenches including packing cavities (wherever required as instructed by engineer) all complete as per specification and as directed by engineer in charge.			-	-	
a	upto depth of 2m	SQM	53	-	-	0.0010926637%
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 below finished floor level upto depth of 10m from FFL. (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224)	CUM	52	-	-	0.0130728528%
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 below finished floor level upto depth of 10m from FFL. (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224)	CUM	131	-	-	0.0329335330%
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 below finished floor level upto depth of 10m from FFL. (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224)	CUM	4011	-	-	1.0083694714%
204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level upto depth of 10m from FFL. (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224).	CUM	226	-	-	0.0560312074%
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc for 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 below finished floor level upto a depth of 10m from FFL(For depths greater than 10m from FFL, extra over for additional depth to be paid in Item No 224), for the following.			-	-	
b	M 25 Grade	CUM	50	-	-	0.0135684686%
c	M 30 Grade	CUM	30852	-	-	8.4195375660%
206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for 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 upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225), for the following.			-	-	
b	M 25 Grade	CUM	21746	-	-	6.0677179439%

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
207	Providing and laying 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, Mills, Crusher House, CHP-AHP civil works, FGD,etc at all elevations below/above finished floor level (except top decks supported over vibration isolation system and TG deck) 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 all complete.			-	-	
b	M 35 Grade	CUM	315	-	-	0.0958534109%
212	Screed concrete conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225) or thickness, drains etc complete as per following.			-	-	
a	01:02:04	CUM	300	-	-	0.0754203045%
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 M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.			-	-	
d	M35	CUM	617	-	-	0.2835163167%
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 upto depth of 10m from FFL, (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224). for following grades. Watertightness is to be ensured including structural grouting if required.			-	-	
b	M30	CUM	2808	-	-	0.8281658364%
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	20	-	-	0.0011721837%
b	Reinforced cement concrete of all grades	CUM	217	-	-	0.0200039929%
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	22	-	-	0.0001153335%
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	22	-	-	0.0000103671%
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	22	-	-	0.0002436257%
225	Extra over item no. 206 and 212 for height above FFL (Finished Floor Level) as per following:			-	-	
(a)	Height exceeding 10m from FFL but not exceeding 20m	CUM	5436	-	-	0.1402478379%
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 & slabs(for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge.			-	-	
a	Upto Depth 10m From FGL	SQM	48790	-	-	2.0605947542%
b	Depth exceeding 10m From FGL	SQM	1000	-	-	0.0464161199%

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
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/intermediate 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.			-	-	
a	For Height Upto 20m from FGL	SQM	68710	-	-	3.4927971208%
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	915	-	-	0.0136359133%
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	392	-	-	0.0095362743%
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.			-	-	
a	Extra for Curve Shuttering for Item No. 301	SQM	11	-	-	0.0000926555%
308	Inner and outer faces of wind shield with slip form shuttering: Providing and fixing formwork using slipform (inner and outer faces) for concreting in chimney or silo or any other structure for cast in situ, reinforced concrete works of any type and section for all elevations, including labour, materials, equipment, waste of forms, scaffolding, staging, tying, nailing, caulking, bolting, maintainence, dismantling etc. all complete as per specifications, drawings and instructions of Engineer in charge. (Area of inner face and outer face shall be measured seperately.) Mode of Measurement:- Total formwork quantity in chimney/silo/other structure applicable to Slipform work as per specifications & drawings shall be jointly measured and certified. Certified quantity(SQM) to be paid in line to the unit rate of 308a i), 308a ii) & 308a iii). (The slipform arrangement material shall be the property of contractor)	SQM		-	-	
a	Design, Engineering, Approval of Drawings, Supply & Installation of Slipform system as per approved drawings duly reviewed & vetted by approved Third Party/Engineering for chimney or silo or any other structure work at site including all safety requirements/arrangements, installation of all supporting items like structural members, winch arrangement, wooden platforms, jacks(including testing by Third Party) & jack-rods, lighting arrangements, panels, passenger cage, nuts/bolts, manpower, all other arrangements necessary for concreting & material shifting, slipping, providing spares for smooth operation, dismantling, etc all complete. Quantity measured for 308a i), 308a ii) & 308a iii) shall be same and shall be restricted to the quantity measured in 308 a iii)	SQM		-	-	
i)	For Mobilisation & Installation(Payment of the total certified quantity shall be made for mobilisation of slipform only after start of successful slipping as certified by Engineer in charge.)	SQM	1138	-	-	0.0433029413%
ii)	For Dismantling of the Slipform System(Payment of the total certified quantity shall be made only after complete dismantling of slipform as certified by Engineer in charge.)	SQM	1138	-	-	0.0108592515%
iii)	Slipping/Providing formwork at inner and outer faces of wind shield with slip form shuttering with slipform arrangement.(Cost for design, mobilisation, installation & dismantling of slipform shall be paid seperately in Item No 308 a i) & 308 a ii) and cost for slipping/providing & maintainence of slipform work to be paid in this item). Measurement for payment to be done progressively as per actual slipping executed at site.	SQM	1138	-	-	0.0541621928%
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.			-	-	
402	Providing, straightening, cutting, bending, placing in position at any 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. (BHEL to supply TMT steel free of cost)	MT	6320	-	-	4.5827356189%
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcemnet 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.	40	-	-	0.0015173595%
b	16mm Reinforcement bar	Nos.	40	-	-	0.0024621749%
c	20mm Reinforcement bar	Nos.	40	-	-	0.0035648523%
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.			-	-	

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
502	Providing and laying underbed/topping 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	3044	-	-	0.0299435809%
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	3044	-	-	0.2110394892%
507	Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	3044	-	-	0.1020233385%
510	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including 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	609	-	-	0.0257204797%
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	50	-	-	0.0007038993%
A511	Providing and applying two coats of bitumen grade of grade 20/30 with quantity of bitumen at least 1.2 kg/m² per coat in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	49790	-	-	0.6994764959%
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	621	-	-	0.0021581729%
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	674	-	-	0.0250371765%
517	Providing and laying foam concrete blocks in the toilets/sunken slab etc. complete as directed by engineer in charge.	cum	5	-	-	0.0008517476%
N518	Providing and making khurras 45x45 cm with average minimum thickness of 30mm of M15 concrete over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 sand) all complete as per specifications and direction of engineer in-charge.	Nos.	193	-	-	0.0022195125%
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 confirming 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	79	-	-	0.0029735180%
b	20 mm wide joints.	SQM	79	-	-	0.0035598454%
c	25 mm wide joints	SQM	131	-	-	0.0085651878%
d	50 mm wide joints	SQM	100	-	-	0.0135831945%
603	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 (10 mm thick baker rod to be paid separately):			-	-	
a	25mmX25mm groov size	RM	26	-	-	0.0009847521%
b	50mmX25mm groove size	RM	105	-	-	0.0074775309%
604	Supplying and filling in position hot applied bitumin sealing compund (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			-	-	
b	12mm X 25mm	RM	53	-	-	0.0002185327%
c	20mmX25mm	RM	53	-	-	0.0001873138%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
N607	Providing and installing FPO (Flexible polyolefin Tap) based waterproofing membrane in construction joints and expansion joint with specifically formulated single-ply of minimum width 200 mm, thickness 1mm membrane fixed at both ends of the external face of the expansion joint on the walls,roof using epoxy bonding adhesive and laid loosely at middle in the expansion joint. Waterproofing tape to be anchored using epoxy adhesive for a width of 75mm on either side of the joint and leaving 50mm in the centre for allowing necessary movements The waterproofing system shall be overlapped and covered with protection medium before back filling. The waterproofing tape shall have a Tensile Strength- 12.5.0 N/sqmm, Elongation at break- 400%, Water tightness, 60 kPa/24 Std (As per DIN EN 1928-A) and Water tightness, 400 kPa/72 Std (As per DIN EN 1928-B) above joint followed by another layer of epoxy adhesives complete as per specification.	RM	158	-	-	0.0083798084%
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	905	-	-	0.0186577487%
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	142	-	-	0.0054702693%
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 Breakup: 1. On Supply & receipt of materials at site - 60% 2. On completion of fabricating, fixing, welding, etc. complete as per description/specification - 40%	MT	142	-	-	0.8304855821%
N701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including surface preparation by manual cleaning and provided with primer coat of chlorinated rubber based zinc phosphate primer of minimum 50 micron dry film thickness (DFT), welding, bolting, cutting, drilling, scaffolding, setting etc. all complete as per specification. Mild steel parts of embedments shall be hot dip galvanized with coating of 610gm/sqm. Payment Breakup: 1. On Supply & receipt of materials at site - 60% 2. On completion of fabricating, fixing, welding, etc. complete as per description/specification - 40%	MT	2	-	-	0.0122818290%
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 Breakup: 1. On Supply & receipt of materials at site - 60% 2. On completion of fabricating, fixing, welding, etc. complete as per description/specification - 40%	MT	228	-	-	1.7138214537%
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	11	-	-	0.0170499132%
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	11	-	-	0.0183529220%
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	21	-	-	0.0001373045%
b	PVC pipes / conduits of all diameters	kg	105	-	-	0.0023317032%
e	Expansion fasteners (mechanical galvanised) of HILTl make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			-	-	
i	HST 3 - M8	Nos	11	-	-	0.0001807755%
ii	HST 3 - M10	Nos	21	-	-	0.0004774734%
iii	HST 3 - M12	Nos	26	-	-	0.0010674530%
iv	HST 3 - M16	Nos	26	-	-	0.0018714885%
v	HST 3 - M20	Nos	26	-	-	0.0032697447%
vi	HST 3 - M24	Nos	26	-	-	0.0064766980%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
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:			-	-	
ii	HAS-U 5.8 - M10 rods with HVU2 capsule	Nos	11	-	-	0.0004315285%
iii	HAS-U 5.8 - M12 rods with HVU2 capsule	Nos	21	-	-	0.0010477202%
iv	HAS-U 5.8 - M16 rods with HVU2 capsule	Nos	26	-	-	0.0022038232%
v	HAS-U 5.8 - M20 rods with HVU2 capsule	Nos	26	-	-	0.0034290203%
vi	HAS-U 5.8 - M24 rods with HVU2 capsule	Nos	26	-	-	0.0047124142%
707	Providing, laying and fixing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	2	-	-	0.0121905931%
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).	CUM	28	-	-	0.0417158398%
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	93	-	-	0.2703853259%
N807	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	1341	-	-	0.0479863455%
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 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continous pressed steel chanel with min 18G, shop and final painting etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	175	-	-	0.1475302208%
N906A	Providing and fixing air locked lobby with automatic closing sliding glass doors. Lobby shall be formed of anodized aluminium framing with toughened tinted glass 10 mm thick Section shall be fabricated from extruded sections of HINDALCO/JINDAL or equivalent make . The sliding door system shall be connected to the surrounding construction by means of interlocking labyrinths lined with intumescent tapes as per the test evidence and connected to the sliding mechanism at the top. The sliding mechanism shall be as mentioned in the tested evidence or Assessment and shall have steel rollers. The glass should 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.. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately) Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	11	-	-	0.0383547157%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
N906B	Providing and fixing swing type anodized extruded aluminium doors conforming to IS:1948, IS:1949 fabricated with extruded sections of HINDALCO/JINDAL or equivalent make toughened tinted glass 10 mm thick Section shall be used . The swing door system shall be connected to the surrounding construction by means of interlocking labyrinths lined with intumescent tapes as per the test evidence and connected to the sliding mechanism at the top. The sliding mechanism shall be as mentioned in the tested evidence or Assessment and shall have steel rollers. The glass should 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.. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately) Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	11	-	-	0.0173404111%
N906C	Providing and fixing anodized extruded aluminium sliding window (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	KG	11	-	-	0.0004700716%
N907	Providing and fixing automatically closing fire proof steel doors (confirming to IS 277) (single or double shutter) with vision panel using glass minimum 14mm thick, clear (MADE IN INDIA)120 min fire rated for Integrity, Radiation control (EVW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass, panic devices 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 self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm complete and shall be fire proof as EN standard EN 10327/ Indian Standard IS 513, EN 1634-1/ ISO 834- 1 / ISO 3009 /(Indian Standard) IS 16947:2018. & TAC requirements and as per specification. vision lite (wherever applicable) as per joinery details of manufacturer with a screw on glass beading on the inside with 6 mm clear borosilicate fire rated glass. Minimum ratings shall be 2 Hrs. Recommended fire door shall have doors tested at CBRI for maximum rating of 2 hrs with vision panel. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	79	-	-	0.4118773451%
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	5369	-	-	0.9392743646%
b	fixed type	SQM	1095	-	-	0.1226781584%
N908	Providing and fixing anodised aluminium Grills in windows/ventilator of approved design.	KG	2242	-	-	0.0759905672%
N909	Providing and fixing of 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 and shall have minimum 2 mm thickness, 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 preperation 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 Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%			-	-	
N909-a	electro color dyed (anodised with 15 micron coating thickness)	kg	2486	-	-	0.1098081889%
N909-b	powder coated (50 microns coating thickness)	Kg	622	-	-	0.0288478392%
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). Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%			-	-	

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
b	Mechanically Operated	SQM	17	-	-	0.0046933884%
c	Electrically operated	SQM	160	-	-	0.0564627359%
A915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			-	-	
a	8 mm thick clear toughened glass	SQM	3296	-	-	0.6151220517%
b	10 mm thick toughened tinted glass	SQM	2197	-	-	0.4715220327%
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM		-	-	
N916-b	In Air condition areas One outer 6mm thick tinted heat-reflecting type toughened glass and one inner 6mm thick clear float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The two glasses shall be hermetically sealed by beading of anodized aluminium with outer edge sealed with silicon sealant. Outer glass of 6mm thickness shall have following technical characteristics: Solar factor 25% or less,Maximum U-value 3.3 W/ SQMK, VLT min 30%: Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25-0.28)	SQM	90	-	-	0.1697559582%
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	2600	-	-	0.5634375045%
N920	Providing & fixing permanently at all heights and elevations, troughed sheets over roof purlins/beams/side runners etc for roofing and side cladding (internal & external) including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge. Quoted rate shall include cost of all labour, material, tools and plants, consumables, lead, lift etc complete. Fixing fire resistant and UV resistant polycarbonate translucent sheets of minimum 3MM thickness on roof & side cladding as per the specification and approved drawings and directions of engineer in charge	SQM	8253	-	-	1.0508832448%
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.			-	-	
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 confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	59	-	-	0.0222455145%
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014), places and position above plinth including raking out joints, curing, scaffolding etc complete but excluding plastering and painting.			-	-	
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	2013	-	-	0.9791771484%
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm upto 10m above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1015), 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. (Reinforcement payment shall be made seperately as per applicable BOQ in 400 Series)			-	-	
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	101	-	-	0.0060444626%
1006	Providing and encasing of structural steel member with masonary work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6 upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014). Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid seperately)			-	-	
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	5	-	-	0.0019670892%
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	62	-	-	0.0090205135%
1014	Extra over item no. 1002, 1006, 1012 & 1013 for height above FFL (Finished Floor Level) as per following:			-	-	
a	Height exceeding 10m from FFL but not exceeding 20m	CUM	201	-	-	0.0105609632%
b	Height exceeding 20m from FFL but not exceeding 30m	CUM	90	-	-	0.0085139416%
c	Height exceeding 30m from FFL but not exceeding 40m	CUM	45	-	-	0.0056750775%
d	Height exceeding 40m from FFL and above	CUM	99	-	-	0.0145670042%
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.			-	-	

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
1102	Providing Damp Proof Course 50mm thick 1:1.5:3 concrete (6 mm and down graded stone chips) with 1% of approved admixture of water proofing compound all complete. Then hot bitumen (residual petroleum bitumen of penetration 80/100 of approved quality) shall be applied over the prepared surface in two coats at the rate of 1.7kg per sq. meter per coat and dry sand spread over it			-	-	
b	50mm thick	SQM	347	-	-	0.0079509989%
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 as applicable upto 10m above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete			-	-	
a	Cement Mortar 1:6	SQM	6482	-	-	0.1637981284%
1202	Providing 12mm thick plaster internal/external surfaces of building/boundary wall in cement mortar as applicable above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls finished to a smooth finish as per specification all complete.			-	-	
a	Cement Mortar 1:6	SQM	11902	-	-	0.2516848131%
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	4585	-	-	0.0861534432%
1206	Extra over Item 1201 to 1202 for plastering on exterior walls over & above 10m height from FGL.			-	-	
a	Height exceeding 10m from FGL but not exceeding 20m	SQM	1750	-	-	0.0051540742%
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.			-	-	
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	14594	-	-	0.1091743661%
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	2054	-	-	0.0206163912%
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	303	-	-	0.0069320944%
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	1826	-	-	0.0149290735%
A1319	Providing and applying two or more coats of weather coat paint of Premium Acrylic Smooth Paint with Silicone additives, over and including Texture base coat, 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. Textured base coat (Two or more coats applied @ 6.5Kg/10 sqm over and including priming coat of exterior primer applied @ 2.20Kg/10 sqm) of High Quality Exterior Acrylic Modified resin and special quality Silica Quartz with Trowel Texture (Asian / Dulux / Nerolac / Berger / Equivalent as per selection).	SQM	6423	-	-	0.0646956240%
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 20 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	12624	-	-	0.5056482572%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
A1404	Providing and laying interlocking M35 Grade concrete blocks confirming to IS:15658 in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 50mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing). Kerb blocks or concrete block specified for various uses shall be precast blocks made of alkali-activated concrete /Geopolymer concrete as per IS:17452- 2020.			-	-	
a	80mm	SQM	105	-	-	0.0069682053%
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	37	-	-	0.0038118355%
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	163	-	-	0.0410263720%
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. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	7	-	-	0.0017808357%
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 Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%			-	-	
b	10mm thick tiles In flooring	SQM	735	-	-	0.0668462811%
c	7mm thick tiles In skirting and dado upto specific height	SQM	319	-	-	0.0239576096%
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming 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	372	-	-	0.1491123743%
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	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 / RCC floor slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with trough depth (of minimum 44mm to 60mm) of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 OR minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing/aluminium zinc coating and painting) of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z275 OR minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the roof/floor slab minimum 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 colour coated with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP) paint or Super Polyester paint or SDP paint (Super Durable Polyester with no TGIC Triglycidyl Isocynurate) . The silicon content in the SMP paint to be 30 to 50%. The paint to be , of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on internal face. SMP and Super polyester paint/SDP systems shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam / structural purlins 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 / 16 mm dia & 65 mm length respectively 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. Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%			-	-	

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
a	Span Upto 1800mm	SQM	9692	-	-	1.0230433269%
b	Span Exceeding 1800mm and upto 2500 mm	SQM	420	-	-	0.0443332849%
1503	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	121	-	-	0.3327117490%
A1505	Designing, providing and fixing External/ Inner sheet of Permanent colour coated metal cladding / roofing with troughed M.S. sheets of minimum 0.6mm bare metal thickness (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade Y250 as per IS 15961 / grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150 OR minimum 0.5mm BMT (i.e. excluding the thickness of galvanizing/aluminiumzinc coating and painting) of grade Y350 as per IS15961/ grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150 OR minimum 0.4mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade Y550 as per IS 15961/ grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, etc. all complete over columns, beams, bracings etc. at all levels. The exposed face the sheet shall be permanently coated with with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP) paint or Super Polyester paint or SDP paint (Super Durable Polyester with no TGIC Triglycidyl Isocynurate) . The silicon content in the SMP paint to be 30 to 50%. The paint to be , of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on other face. SMP and Super polyester paint/SDP systems shall be of industrial finish of product type 4 of AS/NZ2728 Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%	SQM	71859	-	-	5.2994172393%
1511	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 application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations.			-	-	
b)	For underdeck insulation below RCC slabs	SQM	11	-	-	0.0007950233%
A1519	Designing, providing and fixing Factory made (Continuous Line) prefabricated sandwiched Permanent colour coated metal cladding comprising top sheet as troughed(minimum depth of trough shall be 30 mm) permanently colour coated sheet & bottom sheet as plain permanently colour coated for covering of exposed metal/concrete / brick surfaces with insulation shall be of Polyurethane type of minimum 50mm thick (excluding trough). The polyurethane shall be Chlorofluorocarbon (CFC) free and self-extinguishing and shall conform to IS 12436: 1988. It shall have Modular Density 40 +/- 2 Kg/m3 and Thermal Conductivity @ 10 Deg.C 0.017 - 0.020 W/M 0k, Water absorption (% by vol) 3.1, Critical Oxygen Index 23 and Compressive Strength 1.2 Kg/sq.cm, sandwiched between the two sheets, each sheet shall be high strength tensile steel sheet 0.5mm bare metal thickness (minimum) of YS350 as per IS 15961 /grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z 275 / aluminium-zinc alloy coating to class AZ150 on both sides, both sheet shall be permanently coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint of minimum 20 micron DFT on exposed surface on 5 microns (min.) epoxy primer/phosphate primer coat and 10 micron (min.) SMP on 5 micron (min.) epoxy primer/phosphate primer on other face, SMP paint system shall be of industrial finish of product type 4 of AS/NZS 2728, troughed sheet shall be of approved profile, sectional properties, (suitable for the specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, fixing insulated sandwiched metal sheet with the structural members below for supporting the sheeting system, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications. Sealant used for cladding shall be butyl based, two parts poly sulphide or equivalent approved, non stainless material and be flexible enough not to interface with fit of the sheets. Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. Overlap shall be min. 100 mm or as specified by manufacturer. Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%	SQM	4773	-	-	0.8131523163%
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.			-	-	
1602	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 be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. 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. Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%	SQM	699	-	-	0.0910762026%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
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. 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) Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%	SQM	300	-	-	0.0950352384%
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.			-	-	
A1706	Providing and fixing UPVC down take pipes of 150mm diameter- Class 3 as per IS:4985 all complete.	RM	832	-	-	0.0606031481%
N1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.			-	-	
N1710-a	273mm OD and 4mm thick	RM	4055	-	-	0.8936006410%
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.			-	-	
1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	50	-	-	0.0077517276%
A1801	Providing and Filling in trenches, plinths, area paving, grade slab , other underground structures, etc. with 63 mm downgraded hard stone aggregate as per IRC specification watering and compaction to minimum of 90% Standard Proctor density, including filling the interstices of stone aggregates with sand) in layers not exceeding 200 mm in thickness all complete as per drawings/specifications . Payment shall be made for the measurement of the volume of the compacted fill.	CUM	1520	-	-	0.2356525204%
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). Drilling 12mm dia hole @300 c/c using material one liter per hole.	SQM	3504	-	-	0.0575852050%
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	103	-	-	0.0983959305%
N1808-A	Fixing of GI Flat min. size 25x6mm & max. size 75x10mm above the cladding sheet/roof sheet of Conveyor/Structures as per drawing & specification including supplying of fixing of bolts and necessary accessories (GI Flats shall be supplied by BHEL free of cost)	RM	53	-	-	0.0007726694%
N1808-B	Providing Untreated Earth Pit- Driving 3mtr long 40 mm dia rods below FGL and its Test Links with construction of chamber and cover for the chamber all as per specifications and drawings. (Pointed earth electrode to be supplied by BHEL)	NOS.	431	-	-	0.2627605947%
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 & cement/steel to be supplied by BHEL free of cost)	NO	2	-	-	0.0014985103%
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 & cement/steel to be supplied by BHEL free of cost)	NO	2	-	-	0.0011468551%
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 & steel shall be supplied by BHEL free of cost.)	NO	2	-	-	0.0001050842%
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	2	-	-	0.0000831720%
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.	NO	42	-	-	0.0926892217%
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	NO	2	-	-	0.0025345086%
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.			-	-	

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
2001	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. GI barbed wire fencing of height of 600 mm confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with 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 separately under item 2007)	RM	239	-	-	0.0408402363%
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 Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%	MT	2	-	-	0.0128666898%
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	4	-	-	0.0291648739%
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/body bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	30	-	-	0.0019208498%
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	100	-	-	0.0056900980%
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	30	-	-	0.0019208498%
b	50mm nominal bore.	NOS	30	-	-	0.0027743645%
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			-	-	
a	15 mm nominal bore.	RM	150	-	-	0.0045414757%
b	20 mm nominal bore.	RM	300	-	-	0.0099488359%
c	25 mm nominal bore.	RM	300	-	-	0.0117512892%
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:			-	-	
c	25 mm nominal bore.	RM	300	-	-	0.0095777425%
d	50 mm nominal bore.	RM	300	-	-	0.0135007293%
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	24	-	-	0.0022209053%
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	NOS	20	-	-	0.0011733618%
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	30	-	-	0.0024739556%
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	30	-	-	0.0015585920%
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	30	-	-	0.0012528818%
A2112	Providing and fixing chromium plated wall mounted paper holder with paper roll having cover cum cutter fitted with CP screws etc. all complete as per specification.	NOS	30	-	-	0.0014702365%
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia shower arm all complete.	NOS	20	-	-	0.0009247882%
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			-	-	
a	500 litres capacity	NOS	5	-	-	0.0024386134%
b	1000 litres capacity	NOS	20	-	-	0.0195089073%
A2115	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	NOS	30	-	-	0.0036387146%
N2115	Providing and fixing in position tested heavy duty type chromium plated (CP) brass wall mounted mixture including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	8	-	-	0.0016328107%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
A2116	Providing and fixing drinking foundation of approved make as per indian standard and all complete as per specification.	NOS	8	-	-	0.0094363736%
A2117	Providing and fixing robehook of approved make as per indian standard and all complete as per specification.	NOS	30	-	-	0.0010337600%
A2118	Providing and fixing Janitor room of approved make as per indian standard and all complete as per specification.	NOS	8	-	-	0.0243861341%
N2123	Providing and fixing wall mounted stainless steel sink mixture of approved make as per indian standard etc. all complete as per specification.	NOS	20	-	-	0.0045061335%
N2124	Providing and fixing automatic hand dryer of approved make with photo voltaic control as per indian standard etc. all complete as per specification.	NOS	16	-	-	0.0055133868%
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	5	-	-	0.0045358798%
N2201	Supply and fixing coloured vitreous ceramic oval shaped Wash Basin (size 450x550mm) of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets with nuts, fittings, cutting and making good the walls where required etc all complete.			-	-	
N2201-a	Fitted with photo-voltaic control system for water controls, bottle trap as per IS:2556	EACH	2	-	-	0.0022265601%
2202	Providing and fixing approved vitreous china laboratory basin/sink of size 550x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 32mm, 32mm CP brass waste coupling and 32mm CP brass bottle trap with necessaary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	2	-	-	0.0012090575%
2203	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	3	-	-	0.0016333408%
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, 2 way bibcock with health faucet necessary C.P connections etc all complete.			-	-	
a	Floor mounted	EACH	10	-	-	0.0066107629%
b	Wall mounted	EACH	10	-	-	0.0106380092%
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, 2 way bibcock with health faucet necessary C.P connections etc all complete.	EACH	16	-	-	0.0083690385%
2206	Providing and fixing white flat back glazed vitreous china urinals of size 370x315x620 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	30	-	-	0.0451673614%
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	53	-	-	0.0014267067%
b	110mm dia pipes	RM	53	-	-	0.0022571311%
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	105	-	-	0.0081702385%
b	300mm dia	RM	158	-	-	0.0197769191%
e	900mm dia	RM	131	-	-	0.0347160180%
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	21	-	-	0.0027349579%
2217	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	11	-	-	0.0526510183%
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.			-	-	

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
A2301	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, tubular sections confirming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including two coats of red oxide zinc-chromate primer conforming to IS:2074 (one coat at shop and one coat after erection, DFT of each coat shall be 25 micron) , connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20° C for welding over 20 mm and upto 40 mm & 66° C for welding over 40 mm and upto 63 mm & 110° C for thickness over 63 mm) & use of low hydrogen 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. Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%	MT	14552	-	-	29.0553803883%
N2302	Extra over ST NO. A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and All steel surfaces shall be provided with two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT to be applied over blast cleaned surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron. The primer coat shall be applied in shop immediately after blast cleaning by airless spray technique. Zinc dust composition and properties shall be Type-II as per ASTM D520-00.	MT	14552	-	-	3.8471692107%
N2303	Providing and applying of Intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT. This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures.	MT	14552	-	-	2.2729149954%
N2304	Providing and applying of finish coat of twopack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) 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 shop 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.	MT	14552	-	-	2.2729149954%
2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. Payment Breakup: a) On Supply & receipt of material site - 60% b) On complete execution as per item description - 40%			-	-	
a	Minimum galvanisation of 610 g/sqm	MT	299	-	-	2.2260774108%
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	7275	-	-	0.0642786686%
2312	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	72000	-	-	0.7337045557%
N2312	Providing and fixing in positing of high strength structural bolts (of property class 10.9 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	1000	-	-	0.0107260567%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

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ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	125	-	-	0.0779737801%
2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:			-	-	
a	In erected position	MT	217	-	-	0.3665523991%
b	In fabrication yard	MT	217	-	-	0.3020539018%
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members(weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	288	-	-	0.2996059227%
N2316	Supply, fabrication and erection of minimum thickness of stainless steel liners shall be 4mm conforming to ASTM A240 S304 (Type 304) with Mill finish 2B cold rolled, annealed, descaled (pickled) and skin passed on M.S. plate for inside surfaces of bunkers/silos including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel etc. all complete. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of fabrication at yard - 20% 3. On completion of erection, alignment, welding, etc. complete as per description/specification - 20%	MT	44	-	-	1.1150645805%
2318	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ±200 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.			-	-	
d	50 Tons	EACH	48	-	-	0.0659005232%
f	100 Tons	EACH	46	-	-	0.0803306352%
h	200 Tons	EACH	8	-	-	0.0259199866%
2320	Supply, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..	MT	4	-	-	0.0694764494%
N2321	Supply, fabrication and fixing of galvanized MS hand railing & ladder pipes of 32 mm/40 mm/50mm dia as conforming to IS1161 & galvanisation as per IS-4736 including transportation, loading/unloading etc. all complete. Minimum weight of galvanising shall be 610 g/sqm. Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%;	MT	321	-	-	2.6073877209%
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	29	-	-	0.0173212236%
2324	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	29	-	-	0.0023129129%
2325	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	58	-	-	0.0019986027%
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	58	-	-	0.0032455942%
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	58	-	-	0.0034505791%
2400	ROAD WORKS: Road 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.			-	-	
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	9261	-	-	0.0595693881%

BOQ CUM RATE SCHEDULE FOR PROJECT: Coal to Ammonium Nitrate Plant (LSTK-1 & LSTK-2), Lakhanpur, Odisha

TENDER NO.: BHEL/CPC/JSD/C_CHP_LHP/27/046 for Civil, structural and architectural works of CHP & LHP including micro site grading/levelling , Retaining wall, Roads, Storm Water Drainage, RCC Drainage Network, Water Supply System, Sewerage System, Pulley House, Conveyor BCN-1AB, Transfer Point TP-1, Conveyor BCN-2AB, Conveyor BCN-3AB, Crusher House, Bulk Coal Silos, Conveyor BCN-4AB, Conveyor BCN-5AB, Conveyor BCN-6AB, Conveyor BCN-7AB, Transfer Point TP-2, Transfer Point TP-3, CHP MCC # 1, CHP MCC # 2, CHP MCC # 3, CHP Pump House, Cable rack, Limestone Reclaim Hopper, High Angle Conveyor, Limestone Crusher House, Bucket Elevators, Limestone Mill Building (Foundation), Limestone Day Silo building (Foundation), Earth mats and risers for all building etc at Lakhanpur, Jharsuguda, Odisha for BHARAT COAL GASIFICATION AND CHEMICAL LTD (BCGCL)

ST NO	Item Description	UNIT	QUANTITY	RATE (INR)	AMOUNT(In Rs.)	% WEIGHTAGE
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	3376	-	-	0.0783504104%
N2405	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	2520	-	-	0.4178511060%
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		-	-	
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) (IRC 19 -grading -3) 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	158	-	-	0.0267104743%
N2410	A 40mm bitumen mastic wearing course over concrete pavement shall be provided 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 grainedhard 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. (Considering bitumen using 10.2% as per MORTH specification). This 40mm bitumen mastic wearing course shall be laid after completion of construction activities i.e at the time of handover.	SQM	8400	-	-	0.5746747400%
A2413	Supplying and laying 450mmx250mmx500mm deep precast concrete kerb stone of grade M25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	3780	-	-	0.2124499201%
A2415	Supply and laying 200mm dia R.C.C NP3 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.	RM	378	-	-	0.0294128585%
N2419	Providing and laying PAVEMENT QUALITY CONCRETE (PQC) (as per civil specifications) 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. (Excluding the cost of reinforcement and dowel bar)	CUM	2100	-	-	0.5730918219%
A2421	Providing & laying dry lean cement concrete of grade M10 with 20 mm nominal size graded stone aggregate over a prepared sub-base including compaction, finishing, curing etc all complete	CUM	2830	-	-	0.6764584004%
A2423	Providing and fixing in position MS dowel bar reinforcement including surface painted with bitumen and greasing, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	38	-	-	0.1829910761%
N2424	Providing & installation of bitumen impregnated fibre board of specified thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	RM	2800	-	-	0.0347475757%
N2425	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.	RM	2800	-	-	0.0130294997%
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.	RM	2800	-	-	0.0090007432%
A2428	Providing & laying 75 mm thick precast interlocking concrete pavers of grade M35 of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	4830	-	-	0.3052737551%
A2429	Providing and laying 20mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	3780	-	-	0.0153101076%
A2430	Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.	SQM	8400	-	-	0.0081194760%
				Grand Total	0.00	1.0