

**TENDER SPECIFICATION  
BHEL: PSSR: SCT: 1812**

**FOR**

**Mainly Part of Super Structure Civil, Structural and Architectural Works, (Complete Civil Works where no Pile Beneath the Structure), of Coal Handling Plant & Ash Handling Plant area (Outside plant boundary) of Unit-1 & 2**

**At**

**2x660 MW Ennore SEZ Super Thermal Power Project, at Ash Dyke of North Chennai Thermal Power Station (NCTPS), Thiruvallur District, Tamil Nadu**

**VOLUME-II**

**PRICE BID**



**BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)

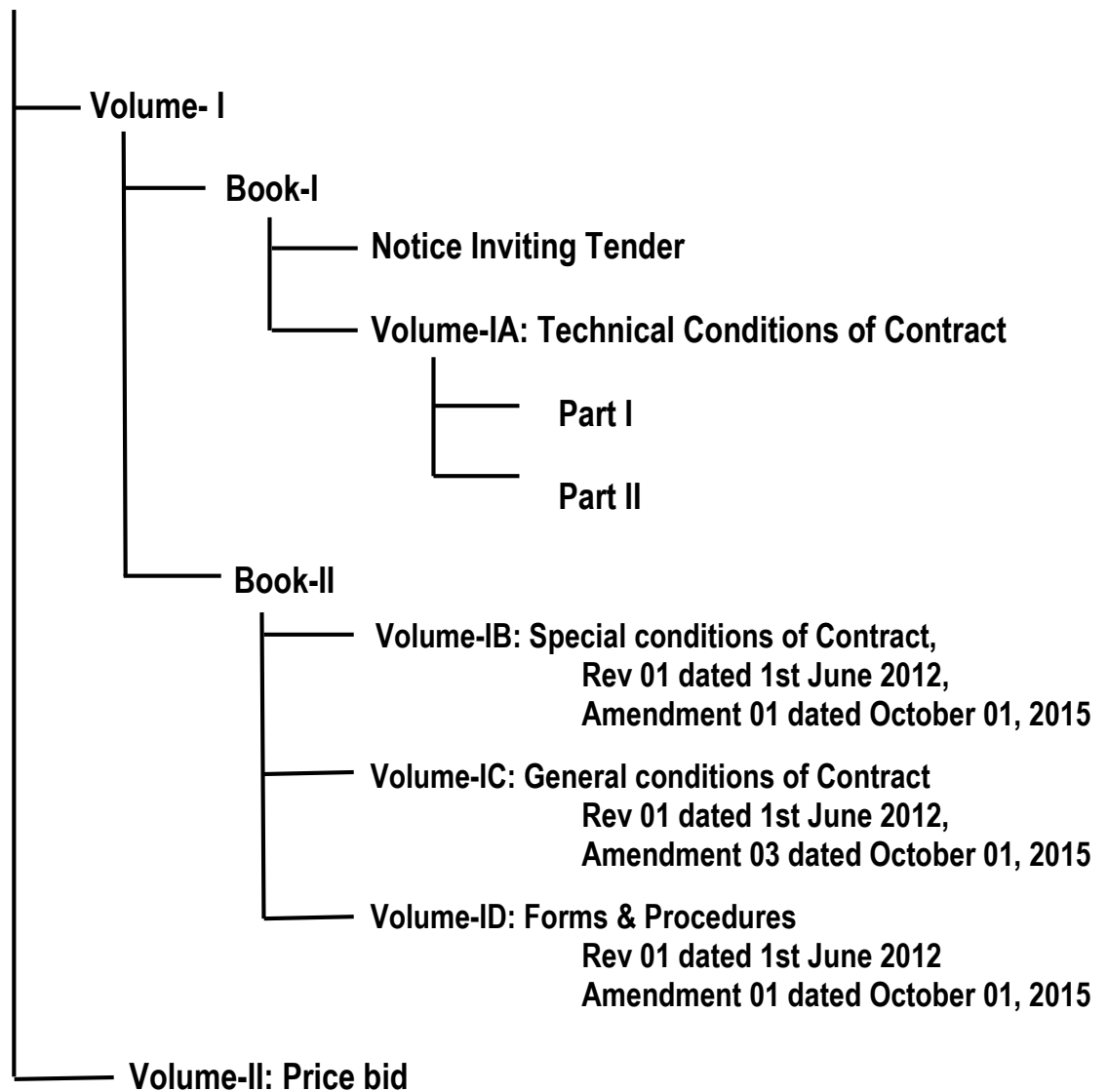
Power Sector – Southern Region

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

# PRICE BID

TENDER SPECIFICATION CONSISTS OF

**Techno-Commercial Bid**



# PRICE BID

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<b>CONTENTS</b>	
<b>Description</b>	<b>No. of pages</b>
Part A: Instructions to the Bidders	1
Part B: Format to quote total amount	1
Part C: Bill of quantities with weightage for amount of each items w.r.t. the total quoted price	14

# PRICE BID

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## **PART-A-INSTRUCTIONS TO BIDDERS:**

1. The 'Total amount' mentioned in Part-B of the Price Bid corresponds to the entire Bill of Quantities (BOQ) given in Part -C of the Price Bid.
2. Bidders shall quote 'Total Amount' in the format for Price Bid available in the e-procurement portal.  
Bidders may also quote 'Total Amount' in the format given in Part -B of this document (Optional).  
Any other entry elsewhere in the price bid shall be treated as Null and Void.
3. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
4. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
5. Based on the quantities of individual item and the amount arrived in SI No: 4 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
6. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.5 above.

**Part B: Format to quote Total Amount**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works  
at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

**Total Amount for the entire Bill of Quantities(BOQ) given in Part C**

In Figures

In words

**Note :**

Bidders to quote Total Amount in this format given above, which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.

**Date**

**SIGNATURE OF BIDDER WITH SEAL**

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
100.0	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.	--		
101.0	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.	--		
a	Depth from ground level but not exceeding 2 m	CUM	5,400	.0008434
b	Depth exceeding 2 m but not exceeding 4 m	CUM	100	.0000196
102.0	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	100	.0000096
107.0	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/ash available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.	--		
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	100	.0000136
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	100	.0000151

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
108.0	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.	--		
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	100	.0000057
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	100	.0000063
109.0	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	--		
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	100	.0000016
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	100	.0000016
200.0	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.	--		
201.0	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors, at any depth below finished floor level etc.	CUM	85	.0006272
202.0	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc	CUM	127.5	.0009994

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
204.0	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	75.5	.0006833
205.0	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
b	M 30 Grade	CUM	1,017.74	.0101116
206.0	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
a	M 25 Grade for all works up to a height of 20 m	CUM	680.17	.0065953
i	M 25 Grade for all works above 20 m up to 40 m	CUM	308.54	.0032688
b	M 30 Grade for all works up to a height of 20 m	CUM	1,549.95	.0154272
i	M 30 Grade for all works above 20 m up to 40 m	CUM	1,500	.0162765
c	M 35 Grade for all works up to a height of 20 m	CUM	500	.0051059
d	M 40 Grade for all works up to a height of 20 m	CUM	500	.0066481

**Part C : Bill of Quantities**

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Quoted rate shall include the cost of chicken wire mesh also.)	--		
a	M20 Grade	CUM	148.61	.0013596
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.	--		
a	M 20 grade	CUM	2,921.96	.0267331
213.0	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.	--		
b	M30	CUM	125	.0016703
215.0	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	1	.0000016

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	Reinforced cement concrete of all grades	CUM	1	.0000024
216.0	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	10	.0000008
217.0	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	10	.0000001
218.0	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	10	.0000032
222.0	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	10	.0000007
ISG22 4	SHOTCRETING	--		
--	Shotcreting (Guniting) specified concrete surfaces as per the following specifications including all materials. Labour, tools and plants, scaffolding etc all complete as per the directions of Engineer in charge, :	--		
--	i.Supply, fabricating and fixing in position 6mm M S bars at 750mm c/c including connecting to the lugs for fastening	--		
--	ii.Supply & fixing wire fabric conforming to IS:1566 as reinforcement with 3mm diameter spaced at 50mm c/c both ways electrically cross welded including securely tying to the 6mm MS bars by maintaining 100mm overlap for adjacent sheets	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
--	iii.Fine aggregate shall consist of natural sand or crushed stone from a known source and shall be strong, hard, coarse, sharp, chemically inert, clean and free from any coating. It shall be free from clay, coal or coal residue, organic or any other impurities that may impair the strength or durability of the concrete and shall conform to IS: 383. The fineness modulus shall be preferably between 2.5 and 3.3. Any other value can be used, with prior approval of the Engineer. Fine aggregate (Sand) shall be well graded and particles shall range in size within limits. The Engineer may approve the use of any other grading as per requirement or as per IS: 9012.	--		
--	iv.The surface after the placement of reinforcement and / or welded mesh and not more than six hours prior to the application of concrete, shall be thoroughly cleaned of all loose materials and dirt. The Contractor shall properly prepare the surfaces, reinforcement and / or welded mesh to receive the shotcrete. Cleaned surfaces shall be wetted not more than hour prior to shotcreting.	--		
--	v.The mix as placed on surface shall be one part cement to three parts approved sand by mass. Cement and sand shall be dry mixed; no water shall be added after mixing and before using in the gun. The quantity of water when added shall be only that which is sufficient to hydrate the cement. For average atmospheric conditions, the water cement ratio for shotcrete in place shall be between 0.35 and 0.5 by mass. Suitable admixture shall be used wherever required.	--		
--	vi.A uniform pressure of not less than 25 Kgf / cm <sup>2</sup> at the nozzle shall be maintained. Necessary adjustments shall be made to ensure this pressure, taking into account the length of hose and height of the place to be shotcreted, above location of the machine.	--		
--	vii.The application shall proceed in an upward direction. Beams, stiffeners and intermediate walls, if any, shall be wrapped with wire fabric and completely covered with shotcreting. All rebound shall be removed from the area of application as the work progresses and such rebound material shall not be reused.	--		

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--	viii.As soon as the freshly shotcreted surface shows the first dry patches, a fine spray of water shall be applied to keep too moist. After the surface has hardened, it shall be kept continuously moist for minimum seven days. If there is extreme heat, especially when accompanied by hot winds, the shotcreted surface, immediately upon completion, shall be covered with burlap or similar covering, which must be kept continuously moist for 14 days after shotcreting. The temperature of the lining shall not be permitted to exceed 38oC during placing and curing.	--		
--	Note: 6mm MS Reinforcement and welded wire mesh as specified shall be used for thickness of Shotcreting above 50mm	--		
--	a) Shotcreting for thickness 50mm and above of with 6mm MS Reinforcement and welded wire mesh as specified	SQM	1	.0000008
--	b) Shotcreting for thickness 25mm without 6mm MS Reinforcement and welded wire mesh as specified	SQM	1	.0000004
ISG22 5	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of Piers in Bridge type structures (standard pier, portal pier, cantilever piers, etc.), with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following grade of concrete. Item excludes shuttering (rectangular/circular), scaffolding and all related operations as required for completing the work. (Bending, binding and coating of reinforcement shall be paid separately.)	--		
a)	M35	CUM	1,977.5	.0257004
b)	M40	CUM	219.5	.0029185

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
ISG22 6	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of cantilever pier cap/Normal pier cap in Bridge type structures, with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following grade of concrete. Item excludes shuttering, scaffolding and all related operations as required for completing the concreting work. (Bending, binding and coating of reinforcement shall be paid separately.)	--		
a)	M35	CUM	1,975.5	.0256744
b)	M40	CUM	219.5	.0029185
ISG22 7	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of deck slab over Precast I -Beams / T - Beams / Steel beams & cross girder in Bridge type structures, with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following grade of concrete. Item excludes shuttering, scaffolding and all related operations as required for completing the concreting work. (Providing & laying deck sheet for shuttering purpose, fabrication and erection of supporting structures for deck sheet, bending, binding and coating of reinforcement shall be paid separately.)	--		
a)	M35	CUM	3,836.5	.0498608
b)	M40	CUM	426	.0056642

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
ISG228	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works reinforced cement concrete crash barrier/Pier Protection all round the pier leaving a gap of 25mm minimum between and following the pier shape exactly on at grade road, with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following grade of concrete. Item excludes shuttering (rectangular/circular), scaffolding, providing of compressible fibre board to be filled in the gap and all related operations as required for completing the work. (Bending, binding and coating of reinforcement shall be paid separately.)	--		
a)	M35	CUM	250	.0032491
b)	M40	CUM	25	.0003324
ISG229	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 I - beams of length 24 m approximately at all levels above pier cap of the bridge type structure, including all kinds of work like precast bed formation, formwork/moulds for precasting, casting of precast beams by providing arrangement for lifting as per drawing, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, lifting & erection on the bearing without damage, using heavy capacity cranes, etc.complete as per specification and drawing for following grades.	--		
a)	M35	CUM	6,075	.1612053
b)	M40	CUM	675	.0180886
ISG230	Transporting precast beams from the casting yard to work site, erection in position including the cost of all temporary supports, erection equipment, lifting cranes, transporting etc. positioning and fixing in position.	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
a	Transportation of precast beams upto 2 KM	MT	16,800	.0023915
b	For every KM or part thereof, beyond initial lead of 2KM	MT	33,600	.0004657
300.0	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.	--		
302.0	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.	SQM	14,338.22	.0140293
A 303	Fairface Formwork with good quality water proof ply wood of minimum 18mm thickness and smooth surface for Pier works (rectangular/ Circular) outside plant boundary (above base raft level)/ or slip form work for ash silo including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties for all heights complete including chamfering of edges, deshuttering as per drawing,specification, and instruction of engineer in charge..	SQM	1,000	.001355
304.0	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	1	.0000004
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	1	.0000006
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	1	.0000011
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	1	.0000018

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e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	1	.0000026
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	1	.0000034
400.0	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.	--		
402.0	Transportation , straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 excluding cost of reinforcement steel but including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	4,450	.0780868
404.0	Extra over ST No. 401,402 & 403 for providing fusion bonded epoxy coating by mechanised & qualified process including blast cleaning to white metal as per Swedish code, heating in induction heater, electrostatically spraying the epoxy powder, complete fusion to give minimum coating thickness of 200-300 microns, gradual cooling without affecting the properties of steel, testing as per ASTM 775 and IS:13620, flexibility & holiday test, proper packing, safe transportation, touchup at site, etc. complete to ensure proper resistance of FBE against corrosive environment. The bidder has to transport the steel from BHEL site store to vendor plant and bringing back to site and special handling during straightening, cutting, bending, placing and providing PVC coated binding wire.	MT	4,450	.0855567

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
405.0	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.	--		
b	16mm Reinforcement bar	Nos.	1	.000001
c	20mm Reinforcement bar	Nos.	1	.0000013
500.0	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.	--		
502.0	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc all complete.	SQM	2,321.96	.0005503
510.0	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	2,321.96	.0015132

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**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
511.0	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	4,263.75	.0008727
513.0	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	200	.0000269
A513	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete. Plinth area of Building at ground floor only shall be measured for payment	SQM	828.8	.0003571
600.0	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.	--		
603.0	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:	--		
a	25mmX25mm	RM	1,250	.0008012
ISG 603a	Strip Seal Joint - Providing and installing Single strip seal joint conforming to latest revisions of MORTH circulars incl. provision of edge beams at end edges of precast diaphragm segments laid cast in situ unit and all related operations as required to complete the work as specified in specifications. Gap for expansion joint installation is 100mm & maximum variation in gap upto (plus or minus) 50mm.	RM	1,430	.0099381
ISG 603b	Omega joint - Providing and installing omega joint conforming to IRC 63 - part II. The rate shall include casting of cast-in-situ plinth at end of deck for fixing joint. Gap for expansion joint: 100mm.	RM	500	.0034749
604.0	Supplying and filling in position hot applied bitumin sealing compound (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.	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	12mm X 25mm	RM	10	.0000007
c	20mmX25mm	RM	10	.0000006
608.0	Supplying and filling in position hot applied bitumin sealing compund (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	--		
b	12mm X 25mm	RM	10	.0000009
c	20mmX25mm	RM	10	.0000011
700.0	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.	--		
701.0	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	25	.0028711
702.0	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	25	.0035492
703.0	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	7.5	.0002294
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	7.5	.0002208

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
704.0	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	1	.0000001
b	PVC pipes / conduits of all diameters	kg	1	.0000006
c	UPVC pipes / conduits of all diameters	kg	1	.0000006
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:	--		
i	8mm Dia	Nos	1	.0000001
ii	10mm Dia	Nos	1	.0000001
iii	12mm Dia	Nos	1	.0000001
iv	14mm Dia	Nos	1	.0000002
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:	--		
iii	HAS-E5.8 M12	Nos	1	.0000007
iv	HAS-E5.8 M16	Nos	1	.0000011
v	HAS-E5.8 M20	Nos	1	.0000019
800.0	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.	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
802.0	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand ) using non shrink admixture etc. all Complete.	CUM	1	.0000354
804.0	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	2	.000151
900.0	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.	--		
904.0	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	301.56	.0021196
907.0	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	3.78	.0000411
908.0	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)	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
a	Openable type	SQM	258.08	.0006927
b	fixed type	SQM	172.05	.0003064
909.0	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including 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.	Kg	1,468.8	.0010337
913.0	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).	--		
a	Hand Operated	SQM	20	.0000698

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	Mechanically Operated	SQM	57	.0002555
914.0	Providing and fixing PVC doors (25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	12.6	.0000537
915.0	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.	--		
d	6 mm thick wired glass	SQM	430.13	.0009622
A923	Providing and fixing 12 mm square MS bars as grills for security on windows/ventilators including fixtures, painting etc. all complete.	SQM	262.08	.0004668
1000.0	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.	--		
1001.0	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	10	.0000982
A1002	Providing brick work in cement mortar 1:5 (1 cement 5 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	601.4	.007043

**Part C : Bill of Quantities**

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**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1100.0	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.	--		
1101.0	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.	--		
a	40mm thick	SQM	1	.0000006
b	50mm thick	SQM	1	.0000007
1200.0	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.	--		
A1201	Providing 20 mm thick in 2 coats, 1st coat of 12 mm thick in Cement Mortar 1:3 & 2nd coat of 8 mm thick in Cement Mortar 1:2 sand faced outside/inside the building/boundary wall finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	2,578.8	.0011112
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:3 on walls finished to a smooth finish as per specification all complete.	SQM	2,578.8	.0007454
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	3,086.88	.0007593
1300.0	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.	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1304	Two or more coats of acrylic washable distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	3,667.32	.0004043
1312.0	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	2,425.44	.00026
1400.0	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.	--		
A1401	Providing and laying 50 mm thick granolithic heavy duty cement concrete in flooring with non-metallic hardener pigmented topping 12mm thick in flooring. Under layer of 38mm thick cement concrete mix 1:1:2 (1 cement: 1 sand : 2 stone aggregates 12.5mm well graded) and top layer of 12mm thick non-metallic concrete of mix 1:2 (1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips)	SQM	3,622.9	.0034213
A1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following	--		
a	7.5 mm thick tiles In flooring	SQM	738	.0016244
1500.0	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.	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
AB15 01	Designing, providing and fixing permanently cold rolled troughed profile sheets manufactured from tested quality CR rolls as per IS:513 over floor beams for cast-in-situ floor slab as per specification and relevant IS codes. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the floor slab 150mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans including Pre treatment and Phosphating of sheet with application of primer and final paint coating as per specification and fixing of sheet to beam with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.	--		
a	Span Upto 1700mm	SQM	1,838.05	.0040028
b	Span Exceeding 1700mm and upto 2500 mm	SQM	1,838.05	.0040028
1504. 0	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	17,357.609	.0246809

**Part C : Bill of Quantities**

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**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1700.0	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.	--		
1709.0	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.	--		
a	110 mm dia	RM	150	.0000932
b	160 mm Dia	RM	1,950	.001901
c	200 mm dia	RM	150	.0002211
Ab	Upper receiving cap (Hot dipped galvanised @650 g/sq.m steel) for any Dia pipe	KG	200	.0000226
1800.0	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.	--		
1821.0	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust suppression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	1,000	.000851
2300.0	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.	--		

**Part C : Bill of Quantities**

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2301.0	Fabrication,erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc, connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL (BHEL to supply steel free of cost).	MT	6,191.08	.2563688
A2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) as per SIS 05-5900 and applying 100 micron total DFT zinc silicate primer(two coats of 50 micron DFT each), including touch-up painting etc all complete.	MT	6,191.08	.0459496

**Part C : Bill of Quantities**

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**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2305	Providing and applying two coats of high built epoxy based colour Finish paint of approved brand with minimum 90 micron Dry film thickness of each finish coat including protection and cleaning, scaffolding etc. all complete.	MT	6,191.08	.0410257
2307.0	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	--		
a	Minimum galvanisation of 610 g/sqm	MT	1	.0001394
b	Minimum galvanisation of 900 g/sqm	MT	1	.0001559
A2318	Providing and fixing in position PTFE type bearings (sliding type or POT type) of reputed manufacturer, individual bearing suitable for required loads & rotations as per the construction drawings and for maximum horizontal load of 15 Tons & displacement of (plus or minus) 220 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.	--		
e	100 Tons	EACH	1	.0000307
f	200 Tons	EACH	11	.000462
2400.0	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.	--		
2402.0	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	10	.0000114

**SIGNATURE OF BIDDER WITH SEAL**

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using compulsorily excavated soil and compacted so as to achieve at least 98 % proctor 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	10	.0000114
B2402	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300 mm loose thickness with approved good quality murrum (murrum is a borrowed material to be arranged by the bidder) and compacted as specified including supplying murrum, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following.	--		
A	Each layer compacted so as to achieve at least 98 % proctor dry density as per IS-2720 (Part-VII)	CUM	10	.0000137
2403.0	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	10	.0000137
2412.0	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder using medium setting grade bitumen at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling etc all complete.	SQM	10	.0000015
A2414	Supply and laying 150mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	10	.0000019
2600.0	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.	--		

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1812 for Civil Works - Foundations, Civil works-Super structure& architecture works, CHP & AHP - outside plant boundary civil & structural, Structural Steel Fabrication & Erection works**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

<b>Ref.No.</b>	<b>Description</b>	<b>Unit of Measurement</b>	<b>Qty.</b>	<b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b>
A2601	Clearing jungle including uprooting of rank vegetation, grass, brushwood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	SQM	100	.0000269
<b>TOTAL Weightage</b>				1.0