

TENDER SPECIFICATION

BHEL PSSR SCT 2110

for

Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2) at Ash Dyke of NCTPS, Tamil Nadu

VOLUME –II

PRICE BID



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

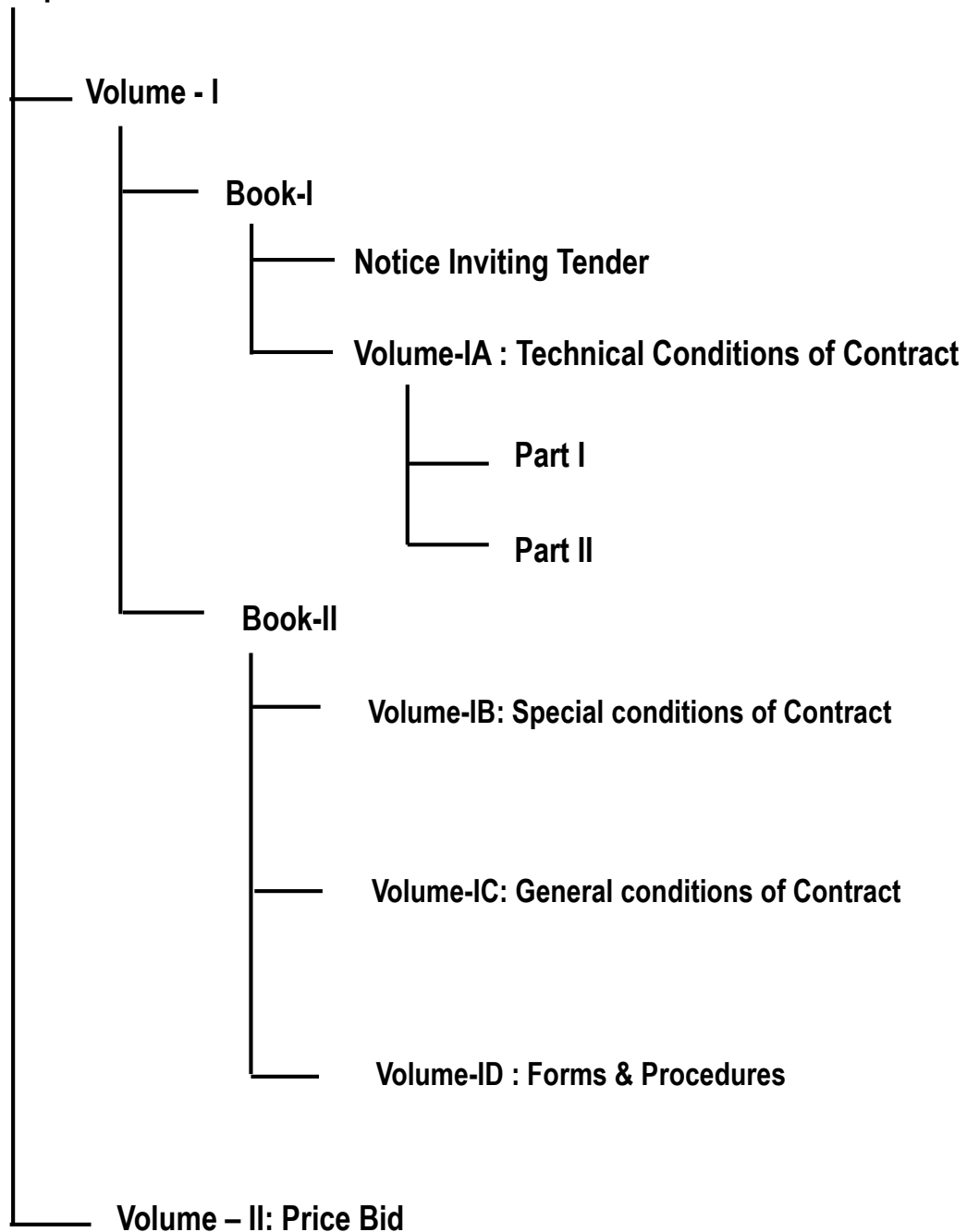
BHEL Integrated Office Complex,

TNEB Road, Pallikaranai,

Chennai - 600100

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID

CONTENTS	
Description	No. of pages
Part A of Price Bid: Instructions to the Bidders	01
Part B : Format for total amount (Enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender)	(Separate Excel File)
Part C: Bill of quantities with weightage for amount of each items with respect to the total quoted price	69

PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ in Part C of Price Bid is approximate only and is liable for variation. Payment will be as per actual quantity executed and as certified by BHEL Engineer.
2. Tenderers are requested to affix their company seal and authorized signature in all pages.
3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details - > Tender covers -> Finance '(Cover Type Description – Price Bid)' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/formats will not be entertained.
4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid.
5. 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 of Price Bid.
6. 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.
7. Based on the quantities of individual item and the amount arrived in Sl. No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed as certified by BHEL Engineer.

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
--	100 EARTH WORK	--		
--	Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc. as per specification, drawing and as directed by engineer- in-charge for the following.	--		
101.0	Earth work in excavation in all types of soil/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 500 m, 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	37,392.398	.0071759
b	Depth exceeding 2 m but not exceeding 4 m	CUM	12,742.3	.0030678
c	Depth exceeding 4 m but not exceeding 6 m	CUM	12,700.3	.0038332
d	Depth exceeding 6 m but not exceeding 8 m	CUM	12,042.3	.004538
e	Depth exceeding 8 m but not exceeding 10 m	CUM	50	.0000226
f	Depth exceeding 10 m but not exceeding 15 m	CUM	10	.0000052
102.0	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	1,000	.0007007

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
107.0	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 soil/ash available within a lead upto 500m 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 95% maximum dry density as per IS-2720 (Part-VII)	CUM	3,246	.0006173
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	500	.0000855
108.0	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 soil/ash directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc. all complete for the following.	--		
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	3,533.2	.0002897
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	500	.0000375
109.0	Extra over ST No. 101,107 & 108 for carriage of excavated earth/selected materials for every 1 km or part thereof beyond an initial lead of 500m.	CUM	100	.0000038
110.0	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 approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc. all complete for the following.	--		
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	2,504	.0063387

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	1,000	.0025314
111.0	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	200	.0011923
A112	Earthwork in excavation using Horizontal directional drilling (HDD) technique including equipments, machinery etc. all complete.	CUM	100	.0024987
A113	Providing and laying rubble soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 230mm, at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc. in one or more layers each of approximately 230mm thickness, hand packing, filling in interstices with quarry spalls, grits and providing a layer of 50mm. thickness (consolidated) of moorum/equivalent locally available approved material over each layer of soling including watering, thoroughly compacting each layer with 10 tonne power roller with minimum 6 passes (or with vibrating plate of approved capacity at places not approachable by power roller) all as per the direction of the Engineer and as per specification.	CUM	9,333.3	.0307134
--	200 CONCRETE WORKS	--		
--	Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Cement shall be supplied by BHEL as a free issue)	--		
201.0	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc.	CUM	46	.0004211

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A201	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc.	CUM	55	.0005035
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	100	.0009154
203.0	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	2,856.4	.0261474
204.0	Concrete under floors, paving, plinth protection, pipe encasing etc. complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.	--		
a	M15Grade	CUM	15	.0001373
b	M20 Grade	CUM	150	.0013226
A205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc. at any level below finished floor level, any shape, position or thickness etc. complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
a	M25 Grade	CUM	5,716.8	.0542962
b	M30 Grade	CUM	6,612.9	.063107
c	M35 Grade	CUM	100	.0009587

Part C : Bill of Quantities**Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)****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
206.0	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 superstructure at any level above finished floor level, any shape, position or thickness etc. complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
b	M30 Grade	CUM	7,716.5	.0742445
207.0	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade M-30 Grade in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system including addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturers recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing.	CUM	100	.0010134
A207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade M-35 Grade in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system including addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer s recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing.	CUM	100	.001018

Part C : Bill of Quantities**Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)****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
208.0	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations supported on vibration isolation system (excluding supply and installation of vibration system) at all levels including addition of suitable plasticizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, levelling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc., but excluding formwork, staging, reinforcement, embedment and temperature control of concrete. Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.	--		
b	M35 grade (with 20mm nominal size graded stone aggregate)	CUM	1,590	.0213731

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A208	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations and top deck of TG foundation at all levels including addition of suitable plasticizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, levelling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc., but excluding formwork, staging, reinforcement, embedment and temperature control of concrete. Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.	--		
a	M30 grade (with 20mm nominal size graded stone aggregate)	CUM	50	.0006691
b	M35 grade (with 20mm nominal size graded stone aggregate)	CUM	100	.0013442
A209	Extra over St. No. A205 to A208 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	1,119	.0032036
210.0	Extra over ST Nos. A205 to A207 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	2,040	.001356
A211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with chicken wire mesh with proper lap etc. complete as per specification for the following grades.	--		
a	M20 Grade	CUM	50	.0004577

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	M25 Grade	CUM	100	.0009154
c	M30 grade	CUM	100	.0009154
212.0	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc. complete as per following.	--		
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	50	.0004577
b	1:1.5:3 (1 part cement, 1.5 part sand, 3 parts of aggregate by volume)	CUM	50	.0004577
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	214	.001959
A213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facia etc.at all levels in all kinds of work including formwork/moulds, curing, making of grooves/notches, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position / pockets with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture, 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.(Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). Payment shall be made for the measurement of the volume of the precast works.	--		
a	M 25 grade	CUM	106.1	.0015849

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	M 30 grade	CUM	81	.0012135
A214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plasticizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades.	--		
b	M 30 grade	CUM	50	.0006151
c	M 35 grade	CUM	50	.0006077
215.0	Dismantling concrete work for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable 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	25	.000056
b	Reinforced cement concrete of all grades	CUM	100	.0003414
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	500	.0000689
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	100	.000001

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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	57	.0000218
219.0	Providing and applying curing compound of approved make where ever required as per manufacturer s specification.	SQM	50	.000012
220.0	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.	CUM	50	.0004471
--	300 FORM WORKS	--		
--	Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.	--		
301.0	Fairface form work with good quality water proof ply wood of required thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	23,968.801	.0282678
302.0	Fairface form work with good quality water proof ply wood of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.	SQM	42,136.301	.061235
303.0	Fairface Formwork with good quality water proof ply wood of required thickness and smooth surface for TG superstructure (above base raft level) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights.	SQM	100	.0007558
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.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	Upto 150 mm depth	Each	64	.000037
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	121	.0001231
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	102	.000192
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	320	.000963
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	39	.0001717
A307	Removal of formwork & staging erected by M/s Simplex.	SqM	1,000	.0002591
--	400 REINFORCEMENT	--		
401.0	Providing, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement and binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	11	.0002693
A402	Transportation from BHEL store, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc. complete all as per specifications, drawings and as directed by Engineer. (Reinforcement steel except mild steel shall be supplied by BHEL free of cost for incorporation in permanent works)	MT	2,546.6	.0664958
S402	Supply including delivery at site, steel reinforcements of TMT steel of grade Fe-500, Fe-500D or 500EQR as applicable conforming to IS:1786 complete all as per specifications, drawings and as directed by Engineer. Note - This item shall be operated if required, at the discretion of BHEL.	MT	25	.0024053

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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, touch-up at site, etc. complete to ensure proper resistance of FBE against corrosive environment including transport of 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 coating on binding wire.	MT	2,546.6	.0545422
406.0	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	10	.0002448
A407	Transportation from BHEL stores, straightening, cutting, bending, placing in position at any level, binding in position high yield strength steel reinforcements in brickwork including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	25	.0006528
--	500 WATER PROOOFING WORKS	--		
--	Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc. at any level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be provided by BHEL free of cost.)	--		
501.0	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, levelling etc. all complete.	SQM	500	.0001178

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
502.0	Providing and laying in-situ light weight foam concrete insulation as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) after the curing period of laid foam concrete and providing of expansion joint at intervals as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.125 Kcal/sqm-hr deg C. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc. all complete for following.	--		
a	Average 50 mm thickness of foam concrete	SQM	100	.0000248
A504	Providing and applying bitumen felt water proofing for heavy treatment having bonding materials consisting of blown type conforming to IS: 702 or residual bitumen conforming to IS: 73 or a mixture of the two with seven courses as per IS 1346 using layer of type 2 grade 1 as per IS 7193 and with a minimum overlap of 75 to 100 mm of felt including preparation of surfaces etc. all complete for following base felts (For description of layers refer specification):	--		
a	With hessian base felt	SQM	100	.0002313
b	With glass fiber base felt	SQM	100	.0001509
c	With fiber base felt	SQM	48	.0000959
506.0	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 by applying polymerized mortar, polyscrim cloth /fabric for edges, joints & vulnerable points etc. all complete as per specifications and directions of engineer in charge.	SQM	1,387.2	.0019771

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A507	Providing and laying wearing course consisting of 40mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc. all complete.	SQM	15,331.4	.0299838
508.0	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 250x250 mm / 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway and entire equipment area with fine joints including sealing of joints (silicon/elastomeric sealant) etc. all complete. (Water proofing paid elsewhere)	SQM	546	.0008402
509.0	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	23,754.301	.0100704
511.0	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	1,000	.0002181
512.0	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.	SQM	19,896	.0094413
513.0	Providing and applying concrete structures two coats of ERPB (Epoxy resin based anticorrosive and chemical resistant paint) over a coat of CPCI (concrete penetrating bipolar corrosion inhibitor) with 300 to 325 micron DFT for protection of concrete against carbonation and chloride penetration in saline/marine environment all complete of approved make and as per manufacturer s recommendation	SQM	150	.0001178
A515	Providing and applying waterproofing treatment for the concrete surfaces of underground structure in contact with soil/ash including surface preparation etc. all complete with following layers:-	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	For base slab, a 75 mm thick layer of PCC 1:4:8 followed by 25mm thk Cement Mortar 1:3 mixed with approved water proofing compound at the rate specified by the manufacturer. Over this two coats of acrylic polymer modified cement based flexible water proofing membrane of approved make laid as per manufacture's and instruction. Over water proofing membrane, 25mm thk Cement mortar 1:3 mixed with approved water proofing compound at the rate specified by the manufacturer provided, over which protective layer of 15mm thk kota / cuddapa or equivalent stone with joints sealed with cement mortar 1:3 shall be laid. Over this stone layer, 25mm thk Cement mortar 1:3 mixed with approved water proofing compound at the rate specified by the manufacturer shall be applied.	SQM	500	.0013306
b	For side walls, two coats of acrylic polymer modified cement based flexible water proofing membrane of approved make laid as per manufacture's specification and instruction followed by 25mm thk Cement Mortar 1:3 mixed with approved water proofing compound at the rate specified by the manufacturer. Protective layer of 15mm thk kota / cuddapa or equivalent stone with joints sealed with Cement Mortar 1:3 shall be laid. Finally 25mm thk Cement Mortar 1:3 mixed with approved water proofing compound at the rate specified by the manufacturer shall be applied.	SQM	500	.0011186
c	Providing and painting with 1.5 mm thick polyurea coating meeting ASTM D-16, Type V to concrete surface etc. complete as per specification.	SQM	500	.0002174
--	600 JOINTS AND FILLERS	--		
--	Joints & fillers including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
A601	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.	--		
a	12 mm wide joints	SQM	100	.0001206
b	20 mm wide joints	SQM	100	.0001509

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
c	25 mm wide joints	SQM	97.1	.0002209
d	50 mm wide joints	SQM	100	.0004546
AA601	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer s recommendation etc. all complete.	--		
a	12 mm wide joints	SQM	100	.0000117
b	20 mm wide joints	SQM	150	.0000251
c	25 mm wide joints	SQM	200	.000044
d	50 mm wide joints	SQM	50	.0000202
602.0	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:	--		
a	12mm X 25mm	RM	100	.000081
b	20mmX25mm	RM	100	.0001303
c	25mmX25mm	RM	300	.000482
d	50mmX25mm	RM	200	.0006205
603.0	Supplying and filling in position hot applied bitumen 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.	--		
a	10mm X 40mm	RM	100	.0000136
b	12mm X 25mm	RM	100	.0000119

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
c	20mmX25mm	RM	100	.0000155
604.0	Supplying and filling in position hot applied bitumen sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	--		
a	10mm X 40mm	RM	50	.0000068
b	12mm X 25mm	RM	50	.0000059
c	20mmX25mm	RM	50	.0000078
605.0	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicons or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove:	--		
a	25mmX25mm	RM	100	.0000755
b	50mmX25mm	RM	50	.0000695
606.0	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:	--		
a	150 mm wide and 8 mm thick	RM	100	.0000482
b	230 mm wide and 8 mm thick	RM	100	.0000768
c	150 mm wide and 6 mm thick	RM	100	.0000347
d	230 mm wide and 6 mm thick	RM	50	.0000266

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A608	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer s recommendations including the material and tools required for jointing, testing, protection, etc. all complete. The joints in rubber seals shall be vulcanised as needed.	SQM	300	.0004242
A609	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer s recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc. all complete.	SQM	150	.0000845
A610	Providing and applying approved fire retardant sealant in joints/openings including cleaning of joints/openings, raking out groove, application of primer, scaffolding etc. all complete.	SQM	200	.0005943
--	700 MS EMBEDMENTS	--		
--	Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
701.0	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	40.7	.0070188
702.0	Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT	34.5	.0016492
703.0	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	26.6	.0012715

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	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, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	14.3	.0029176
705.0	Supplying, fabricating, erecting and installing following items in concrete/brick wall 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	Quintal	28	.0005813
b	PVC pipes / conduits of all diameters	Quintal	108	.0063685
c	UPVC pipes / conduits of all diameters	Quintal	50	.0030958
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:	--		
i	Upto 250 kg	Each	100	.0001141
ii	Beyond 250 Kg and upto 500 kg	Each	100	.0001649
iii	Beyond 500 Kg and upto 750 kg	Each	100	.0002411
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:	--		
i	Upto 250 kg	Each	100	.0002411
ii	Beyond 250 Kg and upto 500 kg	Each	100	.0003047
iii	Beyond 500 Kg and upto 750 kg	Each	100	.0004564

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
706.0	Placing, locking and releasing of Vibration Isolation spring modules over the foundation at all elevations including providing all assistance under the supervision of the supplier, transportation from BHEL store, necessary staging, platforms, levelling, alignment etc. all complete.	Each	276	.0008311
--	800 GROUTING	--		
--	Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge. (OPC cement shall be supplied by BHEL free of cost)	--		
A801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at minimum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing. (Measurement is to be done in Kg of dry grout consumed.)	KG	250	.0004143
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	25	.0011762
803.0	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	55	.0025653

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	28	.002723
805.0	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 Conbextra GP-2 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	9	.0009784
--	900 DOORS, WINDOWS, VENTILATORS, LOUVERS	--		
--	Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, master key system, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
901.0	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	20	.0048647

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
903.0	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	50	.0008054
A903	Providing, fitting and fixing teak veneered solid core flush door shutter (MDF exterior grade) as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges.	SQM	100	.0027831
AA903	Providing, fitting and fixing factory made prelaminated solid core flush door shutter (MDF exterior grade) as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), screws etc. all complete as per drawing, specification and instruction of engineer in charge	SQM	20	.0005539

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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	200	.0051319
905.0	Providing and fixing single or double steel door shutters with 18 gauge M.S. sheets shutter presenting a flush surface on the outside and inside stiffened with semi tubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc. all complete.	SQM	108.6	.0029416
906.0	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc. all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	SQM	133.2	.0026174
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.(Panic devices to be provided at hand over.)	SQM	452.4	.0100765

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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)	--		
a	openable type	SQM	100	.0006499
b	fixed type	SQM	360	.0015695
909.0	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing, grills etc. with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc.including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like Godrej or equivalent make Mortice lock with handle on both sides, tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured.	Kg	47,693.5	.0516314
910.0	Providing and fixing of aluminium composite panel(ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade ,color etc. all complete as per specification.	--		
c	5mm	SQM	50	.0005048
911.0	Providing and fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	Over head hydraulic door closures	Each	50	.0002354
b	Floor mounted Hydraulic door closers	Each	41	.0002478
912.0	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc. all complete as per specifications.	Kg	2,796.2	.0010244
A913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking (with push and pull operation for hand operated only) 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 riveted with stiffening angles.(partly coiled and lath/full lath).	--		
a	Hand Operated	SQM	12	.0002107
b	Mechanically Operated	SQM	182	.0034517
c	Electrically operated	SQM	310.5	.00651
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	38	.0002074
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.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	4 mm thick clear sheet glass	SQM	100	.0001212
b	4 mm thick clear float glass	SQM	100	.0001277
c	5.5 mm thick clear float glass	SQM	21	.0000353
d	6 mm thick wired glass	SQM	1,710	.003198
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	92	.0005593
f	4 mm thick ground glass	SQM	63.4	.0000958
g	6 mm thick tinted heat reflecting type float glass	SQM	85	.0001838
Ag	6 mm thick clear float glass	SQM	1,925.4	.0035445
h	6 mm thick clear toughened safety glass	SQM	50	.000146
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	386.6	.0029256
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	150	.0011692
k	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and separated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	100	.0006527
l	6 mm thick laminated glass	SQM	100	.0003988
916.0	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	100	.0000502

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
917.0	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	1,000	.0039062
919.0	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	50	.0004863
920.0	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	150	.0008623
A921	Supplying, installing and commissioning of self sliding mechanism for aluminium door (double shutter) including photo operated sensors, fittings, motors, mechanical systems, electrical systems, warranty all inclusive in working condition as per specifications and drawings (aluminium and glazing to be paid separately)	EACH	6	.0007267
A922	Providing and fixing of wooden panels of veneered BWP grade plywood including teakwood baton grid for interior partition including fittings, fixtures etc. all complete as per specification.	SQM	185	.0009381
A923	Providing and fixing 12 mm square MS rod grills for security on windows/ventilators including fixtures, painting etc. all complete.	SQM	643	.0043908
A924	Providing and fixing polished teakwood handrail on stainless steel/MS posts all complete as per specification and directions of engineer in charge (stainless steel/MS posts to be paid elsewhere)	CuDM	316	.0015372
--	1000 BRICKWORK	--		
--	Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1001	Providing brick work in cement mortar 1:5 (1 part cement 5 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/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	100	.0013058
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	147	.0021891
1002.0	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	50	.0007889
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/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	2,841.7	.0448371
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	100	.0017556
1003.0	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 8 mm diameter TMT bars at every fourth layer, raking out joints, curing, scaffolding etc. complete excluding plastering and painting as per specification. (TMT bars to be paid elsewhere)	--		
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	20	.0000387

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 8 mm diameter TMT bars at every fourth layer, raking out joints, curing, scaffolding etc. complete excluding plastering and painting as per specification. (TMT bars to be paid elsewhere)	--		
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	262.6	.0005085
A1004	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.	--		
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	100	.0001427
A1005	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item).- Using flat bricks.	--		
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	90	.0001028
1006.0	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	91	.0003228
1007.0	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	CUM	49	.0006715
1008.0	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	10	.0000043

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1009.0	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	63	.000246
1010.0	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	2,995	.0012802
A1010	Supply and placing in position chicken wire mesh at the junction of RCC/Structural steel and brickworks including cutting, bending, fixing etc. complete.	SQM	100	.0000269
1011.0	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	67	.0001437
1012.0	Providing and filling brick bats in soak pits all complete.	CUM	85	.0002396
--	1100 DAMP PROOF COURSE	--		
--	Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc. at any level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL as free issue)	--		
A1101	Providing Damp Proof Course 50mm thick 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.	SQM	305	.0002607
--	1200 CEMENT MORTAR PLASTER	--		
--	Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc. at any level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL as free issue)	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1201.0	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	100	.0000548
A1201	Providing 20mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	100	.0000609
AA1201	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	13,992.6	.0086874
1202.0	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	100	.000037
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	15,329.2	.0058397
1203.0	Providing 12mm thick plaster in cement mortar 1:3 on walls with rough finish all complete.	SQM	100	.0000373
1204.0	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	100	.000034
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	4,048.3	.0014048
1205.0	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	100	.0000342
1206.0	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	20	.0000262

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1207.0	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	60	.0000038
1208.0	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	100	.0000349
1209.0	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, levelling, curing and cleaning, finishing the exposed surfaces etc. including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (chicken wire mesh to be paid separately)	SQM	100	.0001176
1210.0	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	10	.0000034
--	1300 FINISHES TO CONCRETE / PLASTERED SURFACES	--		
--	Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
1301.0	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	500	.000031
1304.0	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	200	.0000367
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	43,667.801	.0092258

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1305.0	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	705.8	.0001861
1306.0	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	50	.0000368
A1306	Providing and applying 2 or more coats of chlorinated rubber based paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	100	.0000437
1307.0	Two or more coats of fire resistant transparent paint as per IS 162 on all woodwork over French polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications.	SQM	25	.0000244
1308.0	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	100	.0000182
1310.0	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	100	.0000176
A1311	Providing and applying resin bonded granular textured finish of vineratex or equivalent, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulphide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	100	.0000962

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1312.0	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	1,169.9	.0002713
1313.0	Providing and applying ready made Epoxy Paint over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 4 mm thickness.	SQM	100	.0001079
A1316	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	2,544.1	.0016755
--	1400 FLOORING AND SKIRTING	--		
--	Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL as a free issue).	--		
1401.0	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 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardener 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	50	.0000596

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
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 hardener 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	7,450.1	.009765
AA1401	Providing and laying 50 mm thick granolithic heavy duty cement concrete in flooring of cement concrete mix 1:1:2(1 cement: 1 sand : 2 stone aggregates 12.5mm well graded) 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	8,524.6	.0099545
A1402	Providing and laying 25 mm thick granolithic heavy duty cement concrete mix 1:1:2 (1 cement: 1 sand : 2 stone aggregates) flooring with non-metallic hardener pigmented topping of 10 mm thick uniform graded particles in skirting and dado complete as per specification.	SQM	100	.0000747
AA1402	Providing and laying 25 mm thick granolithic heavy duty cement concrete mix 1:1:2 (1 cement: 1 sand : 2 stone aggregates) flooring in skirting and dado complete as per specification.	SQM	100	.000062
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum topping) of size 300X300X22 thick of approved shade as per IS 1237, including cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc. all complete for following:	--		
a	Laid in floors	SQM	4,947.4	.0109397
b	Laid in skirting	SQM	100	.0002351

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1405.0	Providing and laying 50 mm thick floor finish with 20mm thk Terrazzo Tiles including cement mortar bedding of 1:3 (1 cement : 3 sand) with neat cement slurry etc. all complete.	SQM	50	.0001058
A1405	Providing and laying 25 mm thick wall finish with cast in situ Terrazzo including provision of base and etc. all complete.	SQM	50	.0001147
1406.0	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 spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	43.7	.000149
1408.0	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster including cutting brick wall upto the required depth, edging, finishing etc. all complete.	SQM	50	.0001827
1412.0	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 30mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	.0003246
1413.0	Providing and laying 14 to 16mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	.0002819

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1414.0	Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding, moulding, granite polishing etc. all complete.	SQM	163.6	.0010675
1415.0	Providing and laying polished Granite stone 14-16mm thk in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding, moulding, granite polishing etc. all complete.	SQM	12	.0000675
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	8 mm thick tiles In flooring	SQM	3,255	.0084741
Aa	7.5 mm thick tiles In flooring	SQM	50	.0001289
b	8 mm thick tiles in skirting and dado upto specific height	SQM	407.2	.0010891
Ab	7.5 mm thick tiles in skirting and dado upto specific height	SQM	10	.0000265
A1417	Providing and laying heavy duty anti skid ceramic tiles of matt finish of size 300x300mm from reputed / approved manufacturer including underbed of 43mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) etc. all complete for following.	--		
a	7mm thick tiles In flooring	SQM	132	.0003546
c	7mm thick tiles In skirting and dado upto specific height	SQM	98.7	.0002721
1418.0	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes	--		
a	400X400 mm	SQM	25	.0000596

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	600X600 mm	SQM	24	.0000669
A1418	Providing and laying 8 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in flooring and skirting over 40 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes	--		
a	400X400 mm	SQM	100	.0002316
b	600X600 mm	SQM	100	.0002643
A1419	Providing and laying granite stone slab of 12 mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting, making corners, moulding and opening etc. all complete.	SQM	65	.0005342
1420.0	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including underbed of cement mortar 1:3 with neat cement slurry etc. all complete.	--		
a	300X300 mm	SQM	100	.0002362
b	600X600 mm	SQM	50	.0001629
1421.0	Providing and laying Heavy Duty dust pressed (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm(approved size) and 7mm thick of reputed / approved manufacturer (Kajaria,jhonson,Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm, with Under bed shall average 43mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level including cement mortar all complete.	SQM	10	.0000347

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 13 mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.	--		
a	25mm thick	SQM	443	.0022405
b	38mm thick	SQM	20	.0001155
1424.0	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm thick) conforming to IS:4860 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	100	.0007141
A1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) conforming to IS:4860 in the wall of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	100	.0010211

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
AA14 24	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (38mm thick) conforming to IS:4860. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	100	.0004784
1425. 0	Providing and laying polished Marble slabs (Aranga white or equivalent approved shade/color /design) 20 mm thk in staircase landing/skirting and corridors over minimum 20 mm thick underbed of 1 cement : 2 sand : 4 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded marble nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	1	.000009
1427. 0	Providing and fixing glazed ceramic tiles of approved color and design of size 200x300mm / 300x300mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry including pigments, curing etc. all complete for following thicknesses:	--		
a	5mm thick	SQM	100	.0002008
A1428	Providing and laying 2 mm thick antistatic PVC flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete.	SQM	100	.0002125

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1429	Providing and fixing removable type flooring system (Height of floor 800 mm)consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.	SQM	100	.0013283
1430.0	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.	--		
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	3,064.9	.0004278
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	25	.0000071
c	Brass strips 20 mm wide and minimum 4 mm thick.	RM	100	.0000806
--	1500 ROOFING / SIDE CLADDING	--		
--	Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.	--		
a	Span Upto 1800mm	SQM	50	.0001988

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
AA15 01	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over floor beams for cast-in-situ slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the 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 beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 20 micron on other face over epoxy primer/phosphate primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of floor covered by MS trough metal decking.	--		
a	Span Upto 1700mm	SQM	50	.0001988
b	Span Exceeding 1700mm and upto 2500 mm	SQM	50	.0001988

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
AAA1 501	Designing, providing and fixing permanently cold rolled troughed profile sheets manufactured from tested quality CR rolls as per IS:513 over roof purlins for cast-in-situ roof 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 roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans including Pre treatment and Phosphating of sheet with application of primer and final paint coating as per specification and fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.	--		
a	Span Upto 1800mm	SQM	50	.0001988

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
AB1501	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 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 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 stitch 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	50	.0001889
b	Span Exceeding 1700mm and upto 2500 mm	SQM	50	.0001926
1502.0	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	25	.001646

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1503(M)	Transportation from BHEL stores 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 150 gm/sqm total on both sides including fixing to supports / rails by concealed/exposed 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. (Cladding sheet, flashings and fasteners shall be supplied by BHEL as free issue)	SQM	6,963	.0036565
A1503(M)	Transportation from BHEL stores 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 150 gm/sqm total on both sides including fixing to supports / rails by concealed/exposed 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 same paint of minimum DFT 12 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. (Cladding sheet, flashing and fasteners shall be supplied by BHEL as free issue)	SQM	11,083	.00582

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1504.0	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with high strength tensile steel sheet 0.5mm bare metal thickness having minimum yield strength 350 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm total on both sides including fixing to supports / rails by concealed/exposed 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	50	.0001063
A1504	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with high strength tensile steel sheet 0.5mm bare metal thickness having minimum yield strength 350 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm total on both sides including fixing to supports / rails by concealed/exposed 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 same paint of minimum DFT 12 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	50	.0001116

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1505(M)	Transportation from BHEL stores and fixing Inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 180 gm/sqm total on both sides of both sheets including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, Z spacers etc. all complete. The exposed surface of the sheet shall be permanently colour coated with silicon modified polyester paint of minimum dry film thickness (DFT) 20 microns over suitable primer. Other face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. The sheet shall be fixed directly to side runners and Z spacers as per IS : 277. The sheet shall be fixed at the rate not more than 1500mm center to center to hold the insulation and external sheeting. (Cladding sheet, flashing and fasteners shall be supplied by BHEL as free issue)	SQM	6,963	.0036565
1506.0	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.	SQM	6,963	.008637
1507.0	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.	SQM	50	.0000705
1508.0	Providing and installing under deck insulation using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 24 Gx 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	390	.000679

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1508	Providing and installing fire resistant under deck insulation using Lloyd Foam or equivalent 50 mm thick polyurethane Foam including minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 24 Gx 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips.	SQM	750	.0019825
1509.0	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	50	.0001392
1510.0	Providing and fixing 1 mm thick corrugated/semi corrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.	SQM	100	.0002645
1511.0	Designing, providing and fixing External roof cladding sheet of Permanent colour coated with troughed M.S. sheets of 0.6mm (or high tensile steel sheet of 0.5mm minimum thickness) for side cladding bare metal thickness having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 275gm/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 12 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	50	.0001275
--	1600 FALSE CEILING	--		
--	False ceiling including all labour, material, equipment, transportation, handling, suspension system etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1603.0	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc. all complete. 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. (Fabrication & Erection of structural platform grid made up of MS Channels/ Beams / Angles shall be carried out by BHEL separately)	SQM	50	.0003764
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour (closed type plain panels) or approved equivalent with corrosion resistant aluminium alloy AA5050 panels of minimum thickness 0.5mm fixed on roll formed carriers. 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 ISMC175 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Fabrication & Erection of structural platform grid made up of MS Channels/ Beams / Angles shall be carried out by BHEL separately)	SQM	1,056.9	.0083438
1606.0	Providing and Fixing 12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm) of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including one coat of primer, two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movement platform. The work to be complete as per specifications, drawings and direction of engineer. (Fabrication & Erection of structural platform grid made up of MS Channels/ Beams / Angles shall be carried out by BHEL separately)	SQM	470	.0014932

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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 RAIN WATER DOWN TAKE PIPES	--		
--	Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
1702.0	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-I) / IS:3589 all complete.	RM	50	.0001217
1704.0	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.	RM	6	.0000211
1705.0	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	50	.0000752
1706.0	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	2,100	.0046639
1708.0	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.	--		
a	110 mm Dia	RM	50	.0000537
b	160 mm Dia	RM	3,157	.0047367
c	150 mm Dia	RM	480	.0007202
d	200 mm Dia	RM	100	.0002184
--	1800 MISCELLANEOUS WORKS	--		
--	Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1801.0	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	945	.0042865
1803.0	Anti termite chemical treatment of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment)	SQM	870	.0004128
1804.0	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	25	.0001121
1805.0	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	50	.0000439
1806.0	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celsius or A65 grade bitumen for softening point above 45 degree Celsius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	50	.0000339
1807.0	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	50	.0000419
1808.0	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	50	.0000835
1809.0	Providing Chemical injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved cement, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	50	.0001493

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1810.0	Providing, laying and fixing rails and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc. all complete.	MT	20	.0050766
1811.0	Providing and fixing weep holes in Drains consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening covered with 40 mm downgraded aggregates in 300 X 300 mm sq. and 300 mm deep size all complete.	EACH	20	.000007
1812.0	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	97.7	.0027357
1813.0	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	45	.0022691
1814.0	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips/pipes, GI wires, covers etc. as per drawing & specification including associated earthwork.	EACH	21	.0004664
1815.0	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	400	.0000998
1816.0	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.	EACH	100	.0025248
1817.0	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.	--		
a	Upto 75 mm dia	RM	100	.0000832

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	100 mm dia	RM	44	.0000557
c	150 mm dia	RM	100	.0002577
d	200 mm dia	RM	100	.0004041
1818.0	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	100	.0006373
A1819	Design, supply, fabrication, erection and epoxy painting of stoplog gates in CW Pumps with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as groove of Stainless Steel 316L , stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fasteners etc., cleaning, sand blasting, , erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc. all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose). (Stainless Steel component shall be measured separately for payment)	MT	2	.000535
A1820	Stainless steel component mentioned under ST No. 1819/A1819/A1821/B1821	MT	1	.0011445
A1821	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary screens made out of stainless steel SS 316L mesh over MS frame including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, galvanised with minimum coating of zinc as 750 gms/sqm followed by application of an etching primer and dipping in black bitumen as per BS 3416 etc. all complete.(Stainless Steel mesh shall be paid separately).	MT	1	.0002554

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
1822.0	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	100	.0000127
1823.0	Fire proofing of steel structures with VERMICULITE cementious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, surface preparation, curing, staging, compatible paintings etc. all complete.	CUM	5	.0010796
1824.0	Supply & fixing expanded metal steel sheet conforming to IS:412. Size of mesh shall be 10mmX40mm with strands of 2.5mm width and 1mm thickness to the structural steel for facilitating fireproofing works.	SQM	20	.0000196
1825.0	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	50	.0003092
1826.0	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	50	.0002525
1827.0	Supply and laying fire clay refractory brick work with fire clay mortar conforming to IS: 6 & 195 including curing etc. all complete on tank pads & in building walls.	CUM	10	.0008273
1828.0	Dismantling old existing reinforced/non-reinforced brickwork/blockwork/stone masonry work in mud/lime/ cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto1km all complete.	CUM	13	.0000291
1829.0	Dismantling old existing plain/re-inforced concrete work at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.	CUM	25	.0000854
1830.0	Dismantling old existing structural steel work at any level including plates, bolts, cutting rivets, welding, dismembering and stacking the dismantled materials within a lead upto 1km etc. all complete.	MT	25	.0004503

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1831	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 including using hose for sprinkling water wherever required, 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	200	.0003359
1832.0	Providing & filling Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc. all complete as per specification.	CUM	10	.0003587
1833.0	Supply & fixing FRP (fibre reinforced plastic) sheets 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm .	SQM	100	.0003144
A1834	Anti weed chemical treatment of soil with suitable chemical etc. all complete.	SQM	500	.0000044
A1835	Providing and placing approved quality of 250 micron thick heavy duty low density polyethylene liner (LDPE) films manufactured from polyethylene resin over cement sand mortar 1:4 in the base of reservoir/pond as well as on side slopes of embankment to prevent seepage including joining with approved method including testing, necessary excavation, fixing at the edges in plain cement concrete by providing 400mm wide and 300mm thick plain cement concrete 1:2:4 on the top of embankment (the cost of plain cement concrete 1:2:4 shall be excluded and shall be payable separately) as shown in the drawing etc. all complete as per specification and as directed by the engineer-in-charge. Minimum width of LDPE liner shall be 6m.	SQM	50	.0000052
A1836	Providing and placing 300mmx300mm size and 75mm thick precast concrete tiles of grade M-20 over 50 mm thick 1cement:4sand mortar on LDPE liner at the bed of reservoir and on side slopes of embankment, filling joints with 1cement : 3sand mortar etc. all complete as per specification and as directed by the engineer-in-charge. The rate shall be inclusive of cement sand mortar as well for which only cement shall be provided by BHEL free of cost.	SQM	50	.0001739

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
A1837	Supplying, stacking and laying sand of approved quality as sand blanket/cushion over base/bed and on slopes of embankment/canal including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc. all complete as per specification and as directed by the engineer-in-charge.	CUM	50	.0002981
A1838	Providing random rubble (RR) stone masonry in foundation, super structure, boundary wall, retaining wall and embankment with cement mortar 1:6 at all elevations including all labour, material, equipment, handling, scaffolding etc. all complete.	CUM	10	.0000951
A1839	Providing and fixing sliding layer of bitumen paper or craft paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc. all complete.	SQM	661.7	.0000323
A1843	Design of scheme and layout for Rain water Harvesting system for the plant in consultation with Central ground water authority/Board or State ground water authority or MOEF authorized agency, submission to BHEL/TANGEDCO, incorporation of comments in submitted scheme and layout to finally obtain approved scheme and layout from BHEL/TANGEDCO including all necessary expenses, consultancy charges etc. all complete as per specification.	--		
a	For preparing the design of scheme and layout for rain water harvesting	LUMPSUM	1	.0041959
b	For obtaining approval on the scheme and layout for Rain water harvesting prepared by the bidder or obtaining approval on the scheme and layout provided by BHEL.	LUMPSUM	1	.0027973
--	2000 FENCING AND GATES	--		
--	Fencing and gates including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2001.0	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	25	.0001442
2003.0	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be separately under ST No. 2008)	RM	25	.0001529
A2005	Supplying and fixing 1000mm high G.I. barbed wire fencing on top of boundary wall consisting of 8 string barbed wire of 6 gauge with 8 strands and with anti climbing arrangement of 50x50x8 Y shaped angles including GI clips, anchors, accessories etc. all complete. (Structural post shall be separately under ST No. 2008)	RM	10	.0000248
2008.0	Supply, fabrication and fixing of mild steel posts for fencing including painting etc. all complete.	MT	1	.0001791

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2009.0	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	1	.0002231
2010.0	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete as per specification.	MT	10	.0021306
A2011	Supply, fabrication and installing in position Motorized sliding MS gate of approved size and design, erecting and fixing at main entrance including all guides, rails, alignments, control panels, switches, paintings etc. all complete as per specification and as directed by Engineer. The gate shall be operable by push button at designated areas at both the guard house and the security office in the Administration / Plant Service area, and by card reader or key switches	MT	5	.0013934
--	2100 WATER SUPPLY	--		
--	Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
2101.0	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc. all complete - 15mm nominal bore.	EACH	50	.000127
2102.0	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc. all complete - 15mm nominal bore.	EACH	50	.0000902
2103.0	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc. all complete for following sizes:	--		
a	25mm nominal bore.	EACH	5	.000014

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	50mm nominal bore.	EACH	5	.0000338
2104.0	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc. and clamps including cutting and making good the walls etc. all complete for following sizes:	--		
a	15 mm nominal bore.	RM	50	.0000536
b	20 mm nominal bore.	RM	50	.0000589
c	25 mm nominal bore.	RM	50	.0000675
2105.0	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling, anti-corrosive paint etc. all complete for following sizes:	--		
a	15 mm nominal bore.	RM	100	.0000878
b	20 mm nominal bore.	RM	100	.0000984
c	25 mm nominal bore.	RM	100	.0001158
d	50 mm nominal bore.	RM	100	.0001731
2106.0	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc. all complete.	EACH	10	.0000292
A2106	Providing and fixing 1200mmx900mmx5.5mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc. all complete.	EACH	8	.0000467
2107.0	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc. all complete.	EACH	8	.0000152

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2108.0	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) all complete.	EACH	13	.0000224
2109.0	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc. all complete.	EACH	7	.0000107
2110.0	Providing and fixing C.P. soap holder mounted with C.P. screws etc. all complete.	EACH	15	.000023
A2111	Providing and fixing stainless steel liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc. all complete.	EACH	10	.000014
2112.0	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.	EACH	10	.0000151
2113.0	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	EACH	4	.0000091
A2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.	--		
a	1000 litres capacity	EACH	6	.0001742
b	2000 litres capacity	EACH	1	.0000581
c	5000 litres capacity	EACH	1	.0001452
d	10000 Litres capacity	EACH	1	.0002399

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2115.0	Providing and fixing approved stainless steel sink with integrated drain board as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	1	.000026
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	10	.0000143
A2117	Providing and fixing metal storing cabinets all complete.	EACH	10	.0002955
A2118	Providing Minimum 600 mm long porcelain tray etc. all complete..	EACH	10	.0000606
A2119	Providing and fixing Recessed porcelain soap tray in shower area etc. all complete.	EACH	10	.000038
A2120	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	10	.0000311
--	2200 SANITARY WORKS	--		
--	Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.	--		
2201.0	Supply and fixing glazed vitreous china Wash Basin conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc. all complete.	--		
a	White	EACH	4	.0000338
b	Colored	EACH	9	.0000837

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2202.0	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	1	.0000085
2203.0	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	2	.0000129
A2203	Providing and fixing stainless steel kitchen sink of size 600x400x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	1	.0000051
2204.0	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 valve less fittings, necessary C.P connections etc. all complete.	--		
a	Floor mounted	EACH	8	.0001096
b	Wall mounted	EACH	2	.0000284
2205.0	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 valve less fittings, necessary C.P connections etc. all complete.	EACH	3	.0000452
2206.0	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	10	.0001758
2207.0	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.	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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	75mm dia pipes	RM	240	.0001761
b	110mm dia pipes	RM	100	.00009
c	160mm dia pipes	RM	200	.0002996
d	200mm dia pipes	RM	223	.0004135
A2207	Supply, laying and jointing Supreme B class stoneware pipe including bends, branches and all other necessary fittings, socket and spigot joint, M.S holder bats/clamps, cutting and making good the walls and floors, lead jointing, testing etc. all complete for following.	--		
a	110mm dia pipes	RM	540	.0010069
2208.0	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	1,000	.0014288
Aa	250 mm dia	RM	50	.0001065
b	300mm dia	RM	50	.0001415
Ab	400mm dia	RM	25	.0000971
c	450mm dia	RM	25	.0001234
d	600mm dia	RM	25	.0001558
e	900mm dia	RM	25	.0002363

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2209.0	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete for following.	--		
a	150mm dia	RM	25	.000034
Aa	200mm dia	RM	50	.0000807
b	250mm dia	RM	50	.0000935
c	300mm dia	RM	50	.000105
d	500mm dia	RM	25	.0000763
2210.0	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete for following:	--		
a	400mm dia	RM	25	.0001192
2211.0	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	22	.0007454
2212.0	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	5	.00017
2213.0	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc. all complete for following sizes:	--		
a	100x100mm P or S Type.	EACH	5	.0000225
b	150x100mm P or S Type.	EACH	5	.0000302

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
c	150x150mm P or S Type.	EACH	10	.000071
2215.0	Providing and fixing C.I. floor traps with C.P jalli all complete.	EACH	110	.0004633
2216.0	Providing and fixing heavy duty UPVC floor traps with C.P jalli all complete.	EACH	5	.000018
2217.0	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	15	.002079
2218.0	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	5	.0012447
2219.0	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	5	.0000239
2220.0	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	5	.0001898
A2221	Supply, laying and jointing HDPE pipes 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	10	.0000083
b	110mm dia pipes	RM	10	.0000126
c	160mm dia pipes	RM	200	.0005154
d	200mm dia pipes	RM	20	.0000808

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2500.0	PILING	--		
2508.0	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc. but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.	--		
a	For vertical compression test by maintained load method	--		
iii	600 mm diameter pile	Each	1	.0003444
b	For lateral load test	--		
iii	600 mm diameter pile	Each	2	.0002362
c	For tension/uplift test	--		
iii	600 mm diameter pile	Each	1	.0002173
A2509	Dismantling of concrete in chipping off pile head from existing level to cut-off level as per the drawing and specification and direction of engineer in-charge	CUM	261	.0024564
2509.0	Carrying out low strain pile integrity test on 600mm/760mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc. but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	Each	281	.0017443
2600.0	Levelling and Grading	--		

Part C : Bill of Quantities

Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)

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
2601.0	Earth work in stripping of top soil upto a maximum depth of 0.20m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm including roots and organic materials etc. for levelling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc. all complete as per specification, drawing and as directed by the engineer-in-charge.	Sq.m	100	.0000042
2602.0	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, testing, all lead and lifts etc. all complete as per specification, drawing and as directed by the engineer for the following. Rate to include compaction of ground before starting filling using road roller of 12 T.	--		
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VIII)	CUM	50	.0001322
--	MISCELLANEOUS	--		
E1	Consolidation of subgrade/ existing surface with 12 T power roller or vibromax including dozing of dumped ash/earth and making good the undulations with ash and rerolling the subgrade for road, hard surfacing of equipment store, fabrication yard, assembly yard etc. as directed by BHEL.	SQM	5,000	.0002092

Part C : Bill of Quantities**Tender Specification for Balance Civil and Architectural works of Main plant at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2)****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
E2	Providing and laying stone for making erection roads, hard surfacing etc. with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 150mm, etc. in one layers approximately 200mm total thickness including moorum after compaction, hand packing, filling in interstices with quarry spalls/ moorum and providing a morrum layer of 25mm thickness (consolidated) including watering, thoroughly compacting layer with 12 tonne power roller or vibromax with minimum 8 passes etc. all as per the direction of the engineer and as per specification.	CUM	500	.0015836
E3	Spreading and laying available ash/earth in layers, levelling, compacting with Vibromax or suitable equipment for making it fit to receive a layer of moorum or placement of plates for movement of cranes/heavily loaded trailer etc.	CUM	1,000	.0001255
E4	Providing and fixing Green Net over erected structure to prevent ingress of ash dust in designated areas. (frame work shall be paid in respective item)	SQM	1,000	.0006797
TOTAL Weightage				0.9999999