

**TENDER SPECIFICATION  
BHEL: PSSR: SCT: 1896  
FOR  
Civil, Structural & architectural works of  
various BOP Buildings Part 1**

**at**

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

**VOLUME-II**

**PRICE BID**



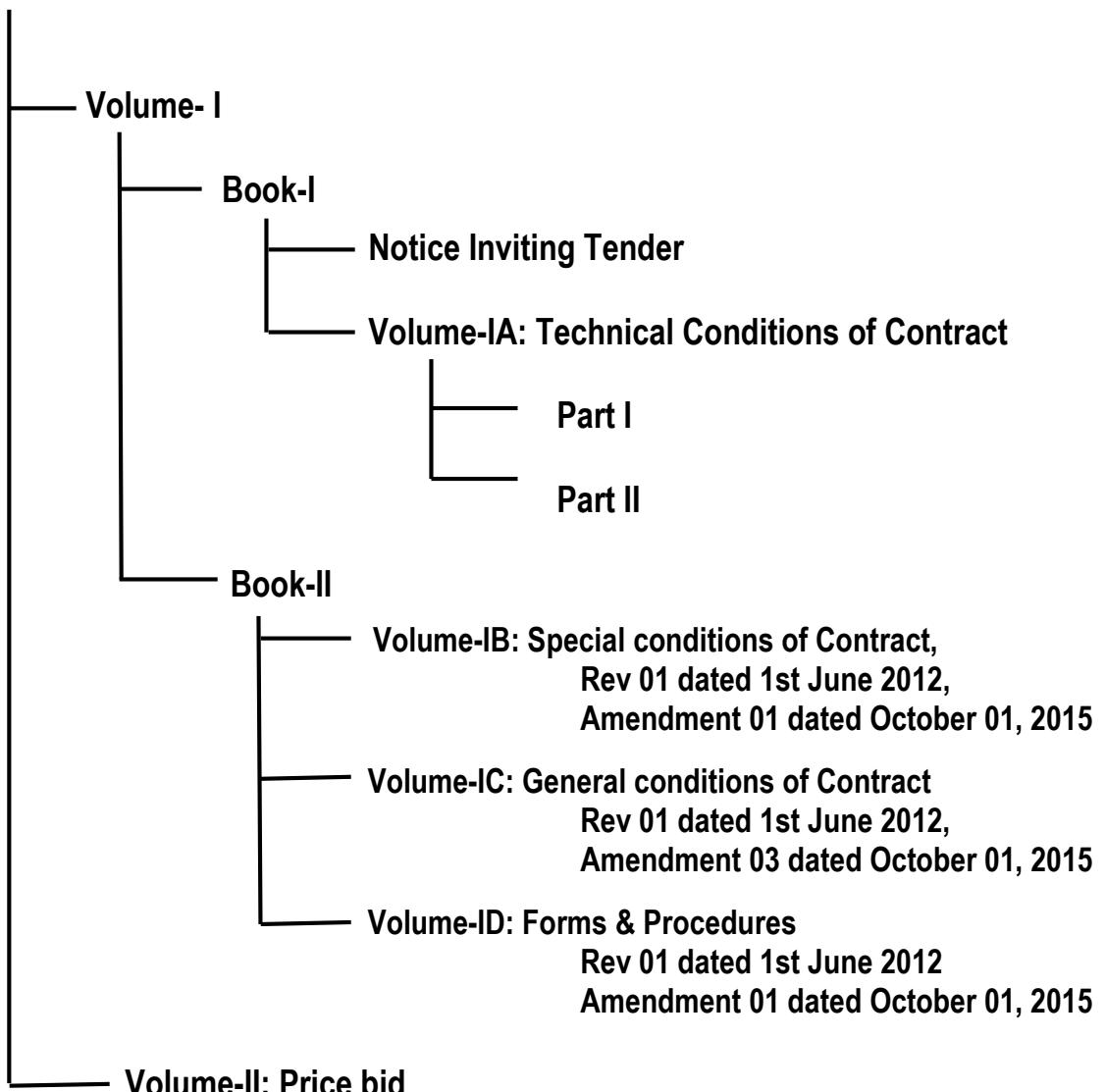
**BHARAT HEAVY ELECTRICALS LIMITED**  
(A Government of India Undertaking)  
Power Sector – Southern Region  
690, Anna Salai, Nandanam, Chennai – 600 035.

# PRICE BID

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TENDER SPECIFICATION CONSISTS OF

Techno-Commercial Bid



# PRICE BID

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| <b>CONTENTS</b>  |                     |
|--|---------------------|
| <b>Description</b>   | <b>No. of pages</b> |
| Part A: Instructions to the Bidders  | 1                   |
| Part B: Format for total amount  | 1                   |
| Part C: Bill of quantities with weightage for amount of each items w.r.t. the total quoted price | 57                  |

# PRICE BID

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

1. Bidders shall quote 'Total Amount' in the "Price Bid Form" available in e-Procurement portal.
2. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid.
3. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
4. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
5. Based on the quantities of individual item and the amount arrived in SI No: 4 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
6. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.5 above.

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

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

In Figures

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

In words

**Note :**

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

**Date**

**SIGNATURE OF BIDDER WITH SEAL**

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| --             | 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                        | 52,193.77   | .009035   |
| b              | Depth exceeding 2 m but not exceeding 4 m   | CUM                        | 13,129.1    | .0026332  |
| c              | Depth exceeding 4 m but not exceeding 6 m   | CUM                        | 2,134       | .0005496  |
| d              | Depth exceeding 6 m but not exceeding 8 m   | CUM                        | 5           | .0000018  |
| 102.0          | Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.   | CUM                        | 13,456.79   | .0095162  |
| 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                        | 31,707.76   | .0077644  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| b              | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM                        | 5,090       | .0011819  |
| 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                        | 10,334.34   | .0020071  |
| b              | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM                        | 1,650       | .0002995  |
| 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                        | 52,856.781  | .0017855  |
| 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                        | 1,760       | .0033252  |
| b              | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM                        | 710         | .0013324  |
| 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                        | 429.02      | .00279  |

**Part C : Bill of Quantities**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| A112           | Earthwork in excavation using Horizontal directional drilling (HDD) technique including equipments, machinery etc. all complete.   | CUM                        | 100         | .0025218  |
| 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                        | 4,500.68    | .0149475  |
| --             | 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. (Supply of cement shall be in Contractor's scope)   | --                         |             |   |
| 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                        | 718         | .006772   |
| 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                        | 583.18      | .0069084  |
| 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                        | 702.51      | .0071215  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 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                        | 512.15      | .0060636  |
| 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              | M15 Grade  | CUM                        | 714.81      | .0085615  |
| b              | M20 Grade  | CUM                        | 360.88      | .0044443  |
| 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                        | 388.74      | .0049248  |
| b              | M30 Grade  | CUM                        | 6,599.12    | .0868315  |
| c              | M35 Grade  | CUM                        | 260         | .003476   |
| 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.   | --                         |             |   |
| a              | M25 Grade  | CUM                        | 317         | .0040608  |

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**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| b              | M30 Grade  | CUM                        | 3,173.25    | .0422026  |
| A209           | Extra over St. No. 205 to 208 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                        | 5,254.39    | .0110366  |
| 210.0          | Extra over ST Nos. 205 to 207 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.  | CUM                        | 4,684.39    | .0015722  |
| 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                        | 8           | .0001034  |
| b              | M25 Grade  | CUM                        | 6           | .0000797  |
| c              | M30 grade  | CUM                        | 25          | .0003451  |
| 212.0          | Scree 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                        | 1,312.94    | .0165158  |
| b              | 1:1.5:3 (1 part cement, 1.5 part sand, 3 parts of aggregate by volume)   | CUM                        | 310         | .0043023  |
| A212           | Scree 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                        | 685         | .0089414  |

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| Ref.No.   | Description   | Unit of Measurement | Qty.   | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|-----------|---|---------------------|--------|--|
| 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, facias 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                 | 43     | .0009024   |
| b         | M 30 grade  | CUM                 | 321.41 | .0068304   |
| A213<br>c | Rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection precast column & panel 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.  | CUM                 | 1,708  | .0076095   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 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 plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. | --                         |             |   |
| b              | M 30 grade   | CUM                        | 2,696       | .0358754  |
| c              | M 35 grade   | CUM                        | 7,805.21    | .1074714  |
| 215.0          | Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.  | --                         |             |   |
| a              | Plain cement concrete of all grades  | CUM                        | 130         | .0009182  |
| b              | Reinforced cement concrete of all grades   | CUM                        | 96          | .0009494  |
| 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                       | 71          | .000008   |
| 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                       | 109         | .000001   |
| 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                       | 71          | .0000297  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 219.0          | Providing and applying curing compound of approved make where ever required as per manufacturer's specification.   | SQM                        | 100         | .0000118  |
| 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                        | 25          | .00018  |
| --             | 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                        | 36,266.059  | .0343807  |
| 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, etc. for all heights except circular overhead tanks                  | SQM                        | 33,567.941  | .0387668  |
| 304.0          | Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge. | --                         |             |   |
| a              | Upto 150 mm depth  | Each                       | 1,094       | .0003441  |
| b              | Pockets of depths more than 150mm and upto 300 mm depth  | Each                       | 2,213.84    | .001402   |
| c              | Pockets of depths more than 300mm and upto 600 mm depth  | Each                       | 96          | .000121   |
| d              | Pockets of depths more than 600mm and upto 1000 mm depth   | Each                       | 1,518       | .0031917  |
| e              | Pockets of depths more than 1000mm and upto 1500 mm depth  | Each                       | 5           | .0000157  |

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**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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|----------------|---|----------------------------|-------------|---|
| A306           | Fairface plywood with filmface/laminated formwork above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches for circular overhead tanks etc. for all heights where ever specifically mentioned in the drawing. Using Slipform/ suitable scaffolding arrangements.   | SQM                        | 1,822       | .01085  |
| --             | 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. (Supply of mild steel shall be in Contractor's scope)  | MT                         | 1           | .0001243  |
| 402.0          | 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 confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Reinforcement steel except mild steel shall be supplied by BHEL free of cost for incorporation in permanent work)   | MT                         | 2,807.35    | .0660782  |
| 404.0          | Extra over ST No. 401, 402 & 403 for providing fusion bonded epoxy coating by mechanised & qualified process including blast cleaning to white metal as per Swedish code, heating in induction heater, electrostatically spraying the epoxy powder, complete fusion to give minimum coating thickness of 200-300 microns, gradual cooling without affecting the properties of steel, testing as per ASTM 775 and IS:13620, flexibility & holiday test, proper packing, safe transportation, touchup at site, etc. complete to ensure proper resistance of FBE against corrosive environment 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 coated binding wire. | MT                         | 2,466.75    | .0641787  |

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

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|----------------|--|----------------------------|-------------|---|
| 407.0          | Transportation from BHEL store, straightening, cutting, bending, placing in position at any level, binding in position high yield strength steel reinforcements in brickwork including cost of binding wire, labour, scaffolding etc. complete all as per specifications & drawings. (Reinforcement steel except mild steel shall be supplied by BHEL free of cost for incorporation in permanent work)  | MT                         | 0.5         | .0000118  |
| --             | 500 WATER PROOFING WORKS   | --                         |             |   |
| --             | Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.   | --                         |             |   |
| 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, leveling etc. all complete.  | SQM                        | 442.42      | .0001513  |
| 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                        | 2           | .0000022  |
| 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                        | 12          | .000028   |

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|----------------|---|----------------------------|-------------|---|
| b              | With glass fiber base felt  | SQM                        | 577.58      | .0008799  |
| c              | With fiber base felt  | SQM                        | 12          | .0000242  |
| 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-polymer 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.<br>Payment terms<br>a. Supply - 40%<br>b. Application - 60% | SQM                        | 10,236.04   | .0147239  |
| 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                        | 4,099.61    | .0041559  |
| 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                        | 3,745.5     | .0071325  |
| 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                        | 20,443.85   | .0046972  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 511.0          | Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.  | KG                         | 201         | .00001  |
| 512.0          | Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.   | SQM                        | 5,237.66    | .000968   |
| 513.0          | Providing and applying concrete structures two coats of ERPB (Epoxy resin based anticorrosive and chemical resistant paint) over a coat of CPC1 (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                        | 465         | .0018305  |
| 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:-   | --                         |             |   |
| 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 manufacturers 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                        | 12,641      | .0398236  |
| b              | For side walls, two coats of acrylic polymer modified cement based flexible water proofing membrane of approved make laid as per manufacturers 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 / ciddapa 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                        | 9,750.4     | .0242701  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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                        | 10,083.42   | .0044242  |
| --             | 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                        | 20          | .0000214  |
| b              | 20 mm wide joints   | SQM                        | 10          | .0000173  |
| c              | 25 mm wide joints   | SQM                        | 648.8       | .001384   |
| d              | 50 mm wide joints   | SQM                        | 42.52       | .0001739  |
| AA60 1         | 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                        | 10          | .0000104  |
| b              | 20 mm wide joints   | SQM                        | 10          | .0000113  |
| c              | 25 mm wide joints   | SQM                        | 10          | .0000123  |
| d              | 50 mm wide joints   | SQM                        | 10          | .0000213  |
| 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:                      | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| a              | 12mm X 25mm  | RM                         | 10          | .0000082  |
| b              | 20mmX25mm  | RM                         | 1,000       | .0013153  |
| c              | 25mmX25mm  | RM                         | 237         | .0003843  |
| d              | 50mmX25mm  | RM                         | 279.33      | .0008746  |
| 603.0          | Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.  | --                         |             |   |
| a              | 10mm X 40mm  | RM                         | 57.23       | .0000152  |
| b              | 12mm X 25mm  | RM                         | 57.23       | .0000148  |
| c              | 20mmX25mm  | RM                         | 149.23      | .000041   |
| 604.0          | Supplying and filling in position hot applied bitumin 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                         | 10          | .0000026  |
| b              | 12mm X 25mm  | RM                         | 10          | .0000026  |
| c              | 20mmX25mm  | RM                         | 10          | .0000027  |
| 605.0          | Providing and sealing of joints with premium grade silicon sealant ( Silpruf of GE silicones 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                         | 10          | .0000445  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| b              | 50mmX25mm   | RM                         | 10          | .0000749  |
| 606.0          | Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:  | --                         |             |   |
| b              | 230 mm wide and 8 mm thick  | RM                         | 1,657.78    | .0012556  |
| d              | 230 mm wide and 6 mm thick  | RM                         | 453.28      | .0002536  |
| --             | 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | MT                         | 75.92       | .0127055  |
| 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                         | 3           | .0001237  |
| 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                         | 228.16      | .0116043  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | MT                         | 8.29        | .0016996  |
| 705.0          | Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.  | --                         |             |   |
| a              | MS pipes of all diameters   | Quintal                    | 7.5         | .0001691  |
| b              | PVC pipes / conduits of all diameters   | Quintal                    | 6           | .0001362  |
| c              | UPVC pipes / conduits of all diameters  | Quintal                    | 5           | .0001135  |
| 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                       | 20          | .000023   |
| 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                       | 20          | .0000487  |
| --             | 800 GROUTING  | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| --             | 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.  | --                         |             |   |
| 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                         | 10          | .0000282  |
| 802.0          | Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand ) using non shrink admixture etc. all Complete.   | CUM                        | 1.01        | .0000461  |
| 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                        | 545.07      | .0188656  |
| 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 CombextraGP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).   | CUM                        | 21.2        | .0017927  |
| 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 Combextra 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                        | 4           | .0003345  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| --             | 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.  | --                         |             |   |
| 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 phenolformaldihyde 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 handels on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish 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)<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | SQM                        | 5.89        | .0001496  |
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%  | SQM                        | 94.51       | .0012279  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 905.0          | <p>Providing and fixing single or double steel door shutters with 18 gauge M.S. sheets shutter presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.</p> <p>Payment terms</p> <ul style="list-style-type: none"> <li>a. Supply - 60%</li> <li>b. erection - 40%</li> </ul>   | SQM                        | 34.92       | .0005772  |
| 906.0          | <p>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 &amp; 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 &amp; jointed mechanically wherever required. (Glazing shall be paid separately)</p> <p>Payment terms</p> <ul style="list-style-type: none"> <li>a. Supply - 60%</li> <li>b. erection - 40%</li> </ul> | SQM                        | 109.02      | .0021621  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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 |
|---------|--|---------------------|-------|--|
| 907.0   | <p>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.)</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p> | SQM                 | 4.2   | .0001236   |
| 908.0   | <p>Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 &amp; IS:7452 latest revision.including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p>   | --                  |       |  |
| a       | openable type  | SQM                 | 55.59 | .000548  |
| b       | fixed type   | SQM                 | 15    | .0001393   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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-metalllic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like 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.) (floor springs and hydraulic door closures will be paid separately) , CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measured.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | Kg                         | 7,169.2     | .0078329  |
| 911.0          | Providing and fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%   | --                         |             |   |
| a              | Over head hydraulic door closers  | Each                       | 12          | .000057   |
| b              | Floor mounted Hydraulic door closers  | Each                       | 10          | .000061   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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 |
|---------|--|---------------------|-------|--|
| 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                  | 100   | .0000422   |
| 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).<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | --                  |       |  |
| a       | Hand Operated  | SQM                 | 71    | .001258  |
| b       | Mechanically Operated  | SQM                 | 49.5  | .0009475   |
| c       | Electrically operated  | SQM                 | 25    | .000529  |
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%  | SQM                 | 35.03 | .0002984   |

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**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 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.                     | --                         |             |   |
| a              | 6 mm thick clear sheet glass   | SQM                        | 128.5       | .0001572  |
| b              | 4 mm thick clear float glass   | SQM                        | 13          | .0000168  |
| c              | 5.5 mm thick clear float glass   | SQM                        | 17          | .0000289  |
| d              | 6 mm thick wired glass   | SQM                        | 26.7        | .0000504  |
| e              | 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.  | SQM                        | 3.5         | .0000215  |
| f              | 6 mm thick ground glass  | SQM                        | 9.08        | .0000138  |
| g              | 6 mm thick tinted heat reflecting type float glass   | SQM                        | 2           | .0000044  |
| Ag             | 6 mm thick clear float glass   | SQM                        | 36.27       | .0000674  |
| h              | 6 mm thick clear toughened safety glass  | SQM                        | 2           | .0000059  |
| 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                        | 1           | .0000076  |
| 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                        | 1           | .0000079  |
| 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                        | 2           | .0000132  |
| l              | 6 mm thick laminated glass   | SQM                        | 2           | .000008   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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                         | 26          | .0000166  |
| 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                        | 2           | .0000216  |
| A923           | Providing and fixing 12 mm square MS rod grills for security on windows/ventilators including fixtures, painting etc. all complete.   | SQM                        | 50          | .0003446  |
| --             | 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.   | --                         |             |   |
| 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 <sup>2</sup>   | CUM                        | 620.02      | .0074291  |
| 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 <sup>2</sup>  | CUM                        | 562.24      | .0070548  |
| 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.                                   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| a              | Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup>   | CUM                        | 823         | .0102242  |
| c              | Using burnt clay bricks of class designation 7.5 of nominal dimension   | CUM                        | 10          | .0001312  |
| 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 <sup>2</sup>   | SQM                        | 192.15      | .0003485  |
| 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 <sup>2</sup>   | SQM                        | 1,093.35    | .0019828  |
| 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 <sup>2</sup>   | SQM                        | 50          | .0000662  |
| 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.   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| a              | Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup>  | SQM                        | 10          | .0000108  |
| 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                        | 10          | .0000706  |
| 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                        | 2           | .0000262  |
| 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          | .0000136  |
| 1009.0         | Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.  | CUM                        | 8           | .0001017  |
| 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                        | 5           | .0000035  |
| 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                        | 3,770.48    | .0010253  |
| 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                        | 2           | .0000068  |
| 1012.0         | Providing and filling brick bats in soak pits all complete.  | CUM                        | 15          | .0001323  |
| --             | 1100 DAMP PROOF COURSE   | --                         |             |   |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|---|---------------------|----------|--|
| --      | 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.   | --                  |          |  |
| 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                 | 981.56   | .0009148   |
| --      | 1200 CEMENT MORTAR PLASTER  | --                  |          |  |
| --      | Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.   | --                  |          |  |
| 1201.0  | 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                 | 958.55   | .0005068   |
| 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                 | 2,449.28 | .001544  |
| AA12 01 | 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                 | 8,280.09 | .0054208   |
| 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                 | 3,261    | .0012527   |
| 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                 | 8,553.37 | .0033889   |
| 1203.0  | Providing 12mm thick plaster in cement mortar 1:3 on walls with rough finish all complete.  | SQM                 | 175      | .0000679   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 1204.0         | Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.   | SQM                        | 841.85      | .0002833  |
| A1204          | Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.   | SQM                        | 4,644.88    | .0015821  |
| 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                        | 283         | .000117   |
| 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                        | 100         | .0001324  |
| 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                         | 350         | .0000739  |
| 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                         | 155         | .0000546  |
| 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, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of enginner in charge (chicken wire mesh to be paid separately) | SQM                        | 10          | .0000166  |
| 1210.0         | Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.  | SQM                        | 100         | .0000632  |
| --             | 1300 FINISHES TO CONCRETE / PLASTERED SURFACES   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| --             | 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.   | --                         |             |   |
| 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                        | 554.3       | .0001906  |
| 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                        | 8,745.42    | .0030164  |
| 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                        | 3,476.5     | .0011201  |
| 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                        | 2,343       | .0021713  |
| 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                        | 282.4       | .0001466  |
| 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                        | 10          | .000012   |
| 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                        | 110,023.367 | .0186209  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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                        | 1,268.82    | .0001896  |
| --             | 1400 FLOORING AND SKIRTING  | --                         |             |   |
| --             | Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.  | --                         |             |   |
| 1401.0         | Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron paricles 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 hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips): | SQM                        | 492         | .0005399  |
| A1401          | Providing and laying 50 mm thick granolithic heavy duty cement concrete in flooring with non-metallic hardener pigmented topping 12mm thick in flooring. Under layer of 38mm thick cement concrete mix 1:1:2 (1 cement: 1 sand : 2 stone aggregates 12.5mm well graded) and top layer of 12mm thick non-metallic concrete of mix 1:2 (1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips)               | SQM                        | 2,142.8     | .0025919  |
| AA14 01        | 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                        | 1           | .0000011  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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 |
|---------|---|---------------------|--------|--|
| 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                 | 30     | .0000204   |
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | SQM                 | 17     | .0001206   |
| 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<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%  | --                  |        |  |
| a       | 8 mm thick tiles In flooring  | SQM                 | 167.41 | .0003396   |
| Aa      | 7.5 mm thick tiles In flooring  | SQM                 | 197.71 | .0003897   |
| b       | 8 mm thick tiles in skirting and dado upto specific height  | SQM                 | 759.61 | .0016375   |
| Ab      | 7.5 mm thick tiles in skirting and dado upto specific height  | SQM                 | 7      | .0000147   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | --                         |             |   |
| a              | 7mm thick tiles In flooring   | SQM                        | 603.58      | .0011546  |
| c              | 7mm thick tiles In skirting and dado upto specific height   | SQM                        | 73.38       | .0002457  |
| 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   | --                         |             |   |
| b              | 600X600 mm  | SQM                        | 1           | .000003   |
| 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    | --                         |             |   |
| b              | 600X600 mm  | SQM                        | 1           | .0000029  |
| 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                        | 1           | .0000083  |
| 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                        | 1           | .0000016  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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                 | 1        | .0000019   |
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | SQM                 | 46       | .0001068   |
| 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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%                                  | --                  |          |  |
| a       | 25mm thick  | SQM                 | 1,381.94 | .0099381   |
| b       | 38mm thick  | SQM                 | 350      | .0023993   |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|---|---------------------|--------|--|
| 1425.0  | <p>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.</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p> | SQM                 | 5      | .0001397   |
| 1427.0  | <p>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:</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p>  | --                  |        |  |
| a       | 5mm thick   | SQM                 | 191.09 | .000386  |
| 1430.0  | <p>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.</p>  | --                  |        |  |
| a       | Glass strips 40 mm wide and minimum 6 mm thick.   | RM                  | 120    | .0000107   |
| --      | 1500 ROOFING / SIDE CLADDING  | --                  |        |  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| --             | 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.  | --                         |             |   |
| AA15<br>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.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | --                         |             |   |
| a              | Span Upto 1700mm  | SQM                        | 671.65      | .0012068  |
| b              | Span Exceeding 1700mm and upto 2500 mm  | SQM                        | 100         | .0001826  |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

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

| Ref.No.    | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|------------|---|---------------------|------|--|
| AB15<br>01 | <p>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 &amp; 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 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.</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p> | --                  |      |  |
| a          | Span Upto 1700mm  | SQM                 | 300  | .0004618   |
| b          | Span Exceeding 1700mm and upto 2500 mm  | SQM                 | 142  | .0002176   |
| --         | 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 BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 1603.0         | <p>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. ( Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p> | SQM                        | 303.32      | .0016607  |
| A1603          | <p>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. ( Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p>   | SQM                        | 130.12      | .0010368  |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|---|---------------------|------|--|
| 1606.0  | <p>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 manufaturer's specification supported over movment platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)</p> <p>Payment terms</p> <p>a. Supply - 60%</p> <p>b. erection - 40%</p> | SQM                 | 208  | .0005313   |
| --      | 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.  | --                  | --   | --   |
| 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                  | 10   | .0000349   |
| 1706.0  | Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.   | RM                  | 50   | .0000583   |
| 1708.0  | Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.  | --                  | --   | --   |
| a       | 110 mm Dia  | RM                  | 1    | .0000012   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| b              | 160 mm Dia  | RM                         | 710.5       | .0016356  |
| c              | 150 mm Dia  | RM                         | 218.7       | .0005035  |
| --             | 1800 MISCELLANEOUS WORKS  | --                         |             |   |
| --             | Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.  | --                         |             |   |
| 1801.0         | 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                        | 1,201.66    | .0059141  |
| 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                        | 5,181.79    | .0009576  |
| 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                       | 5           | .0000244  |
| 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                         | 1.5         | .0000466  |
| 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                       | 2           | .000113   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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                       | 2           | .000113   |
| 1815.0         | Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.   | Kg                         | 500         | .0001733  |
| 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                       | 5           | .0000302  |
| 1817.0         | Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.   | --                         |             |   |
| b              | 100 mm dia  | RM                         | 100         | .0001172  |
| c              | 150 mm dia  | RM                         | 50          | .0000814  |
| d              | 200 mm dia  | RM                         | 1           | .0000021  |
| 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                        | 3           | .0003774  |
| 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                        | 1           | .0000099  |
| 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                        | 1           | .0000127  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 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                    | 102         | .0001729  |
| --             | 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.   | --                         | --          | --  |
| 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)<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40% | RM                         | 1           | .0000058  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 2003.0         | <p>Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings &amp; 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. 2007)</p> <p>Payment terms</p> <ul style="list-style-type: none"> <li>a. Supply - 60%</li> <li>b. erection - 40%</li> </ul> | RM                         | 160         | .0010338  |
| A2005          | <p>Supplying and fixing 1000mm high G.I. barbed wire fencing on top of boundary wall consisting of 8 string barbed wire of 6 guage 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. 2301)</p> <p>Payment terms</p> <ul style="list-style-type: none"> <li>a. Supply - 60%</li> <li>b. erection - 40%</li> </ul>  | RM                         | 10,580      | .0264757  |
| 2008.0         | <p>Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.</p> <p>Payment terms</p> <ul style="list-style-type: none"> <li>a. Supply - 60%</li> <li>b. erection - 40%</li> </ul>   | MT                         | 3.09        | .0007818  |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|--|---------------------|------|--|
| 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                  | 0.54 | .0001137   |
| --      | 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                | 17   | .0000404   |
| 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                | 11   | .000025  |
| 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                | 9    | .0000275   |
| b       | 50mm nominal bore.   | EACH                | 3    | .0000143   |
| 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                  | 31   | .0000164   |
| b       | 20 mm nominal bore.  | RM                  | 36   | .0000243   |
| c       | 25 mm nominal bore.  | RM                  | 80   | .000064  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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                         | 36          | .00002  |
| b              | 20 mm nominal bore.   | RM                         | 36          | .0000177  |
| c              | 25 mm nominal bore.   | RM                         | 81          | .0000564  |
| d              | 50 mm nominal bore.   | RM                         | 61          | .0000722  |
| 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                       | 6           | .0000294  |
| 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                       | 9           | .0000645  |
| 2107.0         | Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.  | EACH                       | 3           | .0000113  |
| 2108.0         | Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) all complete.  | EACH                       | 7           | .0000204  |
| 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           | .0000176  |
| 2110.0         | Providing and fixing C.P. soap holder mounted with C.P. screws etc all complete.  | EACH                       | 9           | .0000221  |
| 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                       | 9           | .0000271  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 2112.0         | Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.   | EACH                       | 8           | .0000312  |
| 2113.0         | Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.  | EACH                       | 5           | .0000306  |
| 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                       | 10          | .0003684  |
| c              | 5000 litres capacity   | EACH                       | 1           | .0001842  |
| 2115.0         | Providing and fixing approved stainless steel sink with integrated drainboard as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete. | EACH                       | 2           | .0000524  |
| A2116          | Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.  | EACH                       | 2           | .0000511  |
| A2117          | Providing and fixing metal storing cabinets all complete.  | EACH                       | 2           | .0000597  |
| A2118          | Providing Minimum 600 mm long porcelain tray etc all complete..  | EACH                       | 4           | .0000244  |
| A2119          | Providing and fixing Recessed porcelain soap tray in shower area etc all complete.   | EACH                       | 5           | .0000192  |
| A2120          | Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.   | EACH                       | 4           | .0000126  |
| --             | 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.  | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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 |
|---------|---|---------------------|------|--|
| 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                | 11   | .0000938   |
| b       | Colored   | EACH                | 4    | .0000375   |
| 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                | 2    | .0000363   |
| 2203.0  | Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.   | EACH                | 4    | .000093  |
| A2203   | Providing and fixing stainless steel kitchen sink of size 600x400x200mm conforming to IS: 13983 including all fittings etc. all complete.   | EACH                | 2    | .0000438   |
| 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 valveless fittings, necessary C.P connections etc all complete.   | --                  |      |  |
| a       | Floor mounted   | EACH                | 10   | .0002056   |
| b       | Wall mounted  | EACH                | 6    | .0001456   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 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 valveless fittings, necessary C.P connections etc all complete. | EACH                       | 5           | .0000887  |
| 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                       | 9           | .0001597  |
| 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.                                | --                         |             |   |
| a              | 75mm dia pipes  | RM                         | 61          | .0000452  |
| b              | 110mm dia pipes   | RM                         | 61          | .0000554  |
| c              | 160mm dia pipes   | RM                         | 31          | .0000469  |
| d              | 200mm dia pipes   | RM                         | 31          | .000058   |
| 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                         | 81          | .0001524  |
| 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                         | 21          | .0000667  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| Aa             | 250 mm dia   | RM                         | 21          | .0000868  |
| b              | 300mm dia  | RM                         | 11          | .0000583  |
| Ab             | 400mm dia  | RM                         | 1           | .0000068  |
| c              | 450mm dia  | RM                         | 1           | .0000087  |
| 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                         | 11          | .0000223  |
| Aa             | 200mm dia  | RM                         | 16          | .0000461  |
| b              | 250mm dia  | RM                         | 11          | .0000366  |
| c              | 300mm dia  | RM                         | 11          | .0000431  |
| 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                         | 1           | .000007   |
| 2211.0         | Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.  | EACH                       | 7           | .0002088  |
| 2212.0         | Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.  | EACH                       | 3           | .0001066  |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|--|---------------------|------|--|
| 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                | 10   | .0000454   |
| b       | 150x100mm P or S Type.   | EACH                | 9    | .0000549   |
| c       | 150x150mm P or S Type.   | EACH                | 8    | .0000573   |
| 2215.0  | Providing and fixing C.I. floor traps with C.P jalli all complete.   | EACH                | 8    | .000017  |
| 2216.0  | Providing and fixing heavy duty UPVC floor traps with C.P jalli all complete.  | EACH                | 7    | .0000471   |
| 2217.0  | Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.   | EACH                | 3    | .0004796   |
| 2218.0  | Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.  | EACH                | 1    | .0003098   |
| 2219.0  | Providing and fixing white viterous urinal partitions of size 675x325x85mm all complete.   | EACH                | 5    | .0000241   |
| 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                | 1    | .0000383   |
| 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                  | 13   | .0000154   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

**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       | 110mm dia pipes   | RM                  | 13   | .0000188   |
| c       | 160mm dia pipes   | RM                  | 13   | .0000362   |
| d       | 200mm dia pipes   | RM                  | 11   | .0000455   |
| --      | 2300 STRUCTURAL STEEL   | --                  |      |  |
| --      | Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge. | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 2301.0         | Transportation from BHEL store, fabrication and erection of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm), use of low hydrogen electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for preparation of fabrication drawigns & submitting the fabrication drawings to BHEL for review and approval of fabrication drgs, in consultation with BHEL. (Structual steel shall be supplied by BHEL free of cost for incorporation in permanent work) | MT                         | 117.86      | .0083397  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 2302.0         | Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) and applying epoxy based zinc phosphate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.   | MT                         | 114.94      | .0006332  |
| A2302          | Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) as per SIS 05-5900 and applying 100 micron total DFT zinc silicate primer(two coats of 50 mm DFT each), instead of two coats of primer of red oxide zinc-chromate, including touch-up painting etc all complete.  | MT                         | 22.85       | .0001158  |
| 2304.0         | Providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.   | MT                         | 11.93       | .0000425  |
| A2305          | Providing and applying two coats of high built epoxy based colour Finish paint of approved brand with minimum 90 micron Dry film thickness of each finish coat including protection and cleaning, scaffolding etc. all complete.   | MT                         | 93          | .0005708  |
| 2307.0         | Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. | MT                         | 1           | .000186   |
| 2309.0         | Extra over above ST NO. 2301 for finishing the grating units with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.   | MT                         | 1           | .0000376  |
| 2310.0         | Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.   | Quintal                    | 0.4         | .0000092  |

## Part C : Bill of Quantities

### Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1

#### 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 |
|---------|--|---------------------|------|--|
| 2311.0  | Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.   | Quintal             | 1.4  | .0000433   |
| 2312.0  | Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions ( weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete. | MT                  | 2    | .0000848   |
| 2313.0  | Addition to, alterations in and/or modifiction of  | --                  | --   | --   |
| a       | In erected position  | MT                  | 2    | .0000565   |
| b       | In fabrication yard  | MT                  | 2    | .0000509   |
| 2314.0  | Re-erection of dismantled fabricated structural steel members including carriage of modified   | MT                  | 2    | .000048  |
| A2319   | Supply, fabrication and fixing of stainless steel hand railing including transportation, loading/unloading etc. all complete as per specification.<br>Payment terms<br>a. Supply - 60%<br>b. erection - 40%  | MT                  | 2    | .0022886   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| A2320          | Supply, fabrication and fixing of GI pipe hand railing (1000 mm high) of 32 mm/40 mm/50 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..Payment terms<br>a. Supply - 60%<br>b. erection - 40%   | MT                         | 12.88       | .0030514  |
| --             | ROAD WORKS   | --                         |             |   |
| --             | Providing Road Work including necessary material, labour, machinery, transportation etc as per specification, drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following.  | --                         |             |   |
| A2402          | Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 98 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete. | CUM                        | 300         | .0005668  |
| 2405.0         | Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.   | CUM                        | 300         | .0017699  |
| 2412.0         | Supplying and laying 400mmx100mmx375mm deep precast concrete kerb stone of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.  | RM                         | 350         | .000582   |
| 2413.0         | Providing & laying edge protection on both edges of black topping using brick on edge (bricks with crushing strength of 75 kg/cm <sup>2</sup> ) with full brick width (230 mm) etc all complete.   | RM                         | 350         | .0000737  |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| A2414          | Supply and laying 150mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.   | RM                         | 20          | .0000474  |
| 2415.0         | Providing and fixing PVC pipes in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.   | --                         |             |   |
| --             | I) 100 mm dia   | RM                         | 10          | .0000078  |
| --             | ii) 150 mm dia  | RM                         | 10          | .0000135  |
| --             | Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating, shuttering, formwork and curing (excluding cost of reinforcement), with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specification and as per direction of engineer in charge for the following. | --                         |             |   |
| 2419.0         | Providing and laying cement concrete of grade M30 using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)  | CUM                        | 250         | .0034772  |
| --             | REINFORCEMENT   | --                         |             |   |
| 2421.0         | Providing and fixing in position MS dowel bar reinforcement including surface painted with bitumen and greasing, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.   | MT                         | 2.5         | .0003492  |
| --             | MISCELLANEOUS   | --                         |             |   |
| A2424          | 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.  | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| b              | 20 mm wide joints.   | RM                         | 1           | .0000017  |
| 2425.0         | Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.  | RM                         | 600         | .0001541  |
| 2429.0         | Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.   | SQM                        | 800         | .0001322  |
| 2500.0         | PILING   | --                         |             |   |
| 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                       | 49          | .0000761  |
| 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                        | 5           | .0000521  |
| 2600.0         | Levelling and Grading  | --                         |             |   |
| 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 leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge. | Sq.m                       | 1,000       | .0001562  |
| --             | MISCELLANEOUS  | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification BHEL:PSSR:SCT:1896 for Civil Works - Foundations, Civil works-Super structure& architecture works, BOP Buildings Part - 1**

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

| <b>Ref.No.</b>         | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|------------------------|--|----------------------------|-------------|---|
| 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                        | 100         | .0000042  |
| E5                     | Conducting plate load test in various locations at specified depth below ground level as per specification, drawings and as directed by the engineer in charge. Payment for making pit of suitable size, maintaining it dry and backfilling etc. shall be paid separately as per relevant items.<br>Plate load test is to be conducted over compaction pile and stone column. Plate load test shall be conducted for individual compaction pile/ stone column or group of compaction piles/ stone columns as per drawing, specification and direction of engineer in charge.               | Each                       | 5           | .0005134  |
| E6                     | Conducting cyclic plate load test in various locations at specified depth below ground level as per specification, drawings and as directed by the engineer in charge. Payment for making pit of suitable size, maintaining it dry and backfilling etc. shall be paid separately as per relevant items.<br>Cyclic Plate load test is to be conducted over compaction pile and stone column. Plate load test shall be conducted for individual compaction pile/ stone column or group of compaction piles/ stone columns as per drawing, specification and direction of engineer in charge. | Each                       | 5           | .0005544  |
| <b>TOTAL Weightage</b> |  |                            |             | 0.9999997   |