

## **Corrigendum - 4 dated 15/10/2025 to CPC Tender No. BHEL/CPC/TLB/LNG2&3/26/048**

**Name of Work:** Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump at 3 x 800 MW NLC TALABIRA TPP (NTTPP), Jharsuguda, Odisha, INDIA.

**Package-A-** Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump in the Northern side of the entire plant area excluding area along compound wall as demarcated in Plot Plan.

**Package-B-** Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump All levelling and grading works in the Southern side of the entire plant area excluding area along compound wall as demarcated in Plot Plan.

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**A) Some of the Bidders sought clarifications in regard to the published tender specification. The clarifications/modifications issued by BHEL are as below:**

| Sl. No. | Reference Tender Document | Reference clause   | Existing Provision                                                                                                                                                                                                                                                                                                                                                                                                                                              | Bidder's query                                                                                                                                                                                                                                                                                                   | BHEL's Clarification                                        |
|---------|---------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 1       | BOQ Item No. A2613        | BOQ Item No. A2613 | Providing and laying 90 mm thick fly ash brick lining in cement mortar 1:5 (1 cement : 5 coarse sand) on the slopes of earth fill/cut including raking out joints, curing, scaffolding etc all complete as per specification. drawing and as per direction of Engineer-in-charge.<br><br>a) Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup> (including cost of cement for brick making).                       | Please note that the lining works should be calculated in Square Meters (Sqm) instead of Cubic Meters (Cum).<br><br>You are kindly requested to revise the unit of measurement to Sqm to ensure smooth billing and accurate documentation                                                                        | Shall be as per BOQ description. Tender conditions prevail. |
| 2       | BOQ                       | A2617 & A402       | Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT corrosion resistant steel (CRS) of grade Fe500/500D conforming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Reinforcement Steel shall be provided by BHEL free of cost) | In this BOQ line item, Corrosion Resistant Steel (CRS) has been mentioned, whereas in the Technical Conditions of Contract (TCC), it is referred to only as Reinforcement Steel. We kindly request your confirmation on which type of steel will be supplied by BHEL — whether it will specifically be Corrosion | Shall be as per BOQ description                             |

## **Corrigendum - 4 dated 15/10/2025 to CPC Tender No. BHEL/CPC/TLB/LNG2&3/26/048**

| Sl. No. | Reference Tender Document | Reference clause            | Existing Provision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Bidder's query                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BHEL's Clarification                                                                                                                                       |
|---------|---------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                           |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Resistant Steel (CRS) or standard Reinforcement Steel.                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                            |
| 3       | BOQ                       | 2601 to 2608, A2609 & B2610 | Stripping, Earthwork Excavation, Backfilling works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | We kindly request you to provide the actual distance to be transported for the disposal of soil, soft rock, etc. This information is essential for us to carry out accurate estimation and to submit a more competitive and realistic offer.                                                                                                                                                                                                                                                        | Shall be as per BOQ description                                                                                                                            |
| 4       | BOQ                       | A518 & A522                 | <p>Providing and placing approved quality of loosely laid 120-150 GSM geotextile (nonwoven polyester) over elasomeric membrane as per specification and as directed by the engineer-in-charge. Minimum width of geotextile shall be 3.5m. (cost of elastomeric ...</p> <p>Providing and applying two coats of acrylic based polymer modified cementitious composite coating system having fine silica/quartz sand of 0.6mm and total thickness shall be 1.5mm of approved make laid as per manufacture's specification etc., all ....</p> | <p>Upon reviewing Corrigendum 2 revised BOQ, we have observed that some BOQ line items are not fully mentioned, and a few lines appear to be missing from the PDF.</p> <p>To ensure accurate understanding and proper estimation, we kindly request you to provide the complete BOQ in editable Excel format.</p>                                                                                                                                                                                   | <p>Complete BOQ is attached herewith as Annexure-B of this Corrigendum.</p> <p>BOQ in editable Excel Format has been sent vide email dated 15/10/2025.</p> |
| 5       | BOQ                       | B                           | Storm Water Drain Works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>We have noted that the drawings related to the Storm Water Drain system have not been provided. In this regard, we kindly request you to provide us the following mentioned:</p> <p>1. Provide detailed information regarding the storm water drain system, including the structures involved, and the number of structures to be connected to the system.</p> <p>2. Plot the storm water drain layout on the Plot Plan to enable us to carry out a more accurate assessment and estimation.</p> | Drawings shall be provided during execution stage.                                                                                                         |

## **Corrigendum - 4 dated 15/10/2025 to CPC Tender No. BHEL/CPC/TLB/LNG2&3/26/048**

| <b>Sl. No.</b> | <b>Reference Tender Document</b> | <b>Reference clause</b>                        | <b>Existing Provision</b>                                                                                                                                                                             | <b>Bidder's query</b>                                                                                                                                                                                                                                                                                                                                                                                   | <b>BHEL's Clarification</b>                                                                                                                                                 |
|----------------|----------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6</b>       |                                  | Sl. No. 03 of Annexure – A:                    | Guidelines for OB transportation from Talabira II & III OCP to NTPP:<br><br>All trucks carrying OB to be tagged with RFID, GPS mounted and integrated with DLMS system.                               | We kindly request BHEL authorities to provide a brief specification or relevant details regarding the RFID and DLMS systems mentioned in this Annexure – A.<br><br>This information is essential for our technical understanding and for accurate estimation during proposal preparation.<br><br>Along with the specifications, it is requested to provide the approved vendors related to DLMS system. | Bidder is requested to visit site and Talabira mines for accessing the requirement.<br><br>However, further details as applicable shall be provided during execution stage. |
| <b>7</b>       | TCC                              | 4.0 T&Ps and MMEs to be deployed by contractor | Dumper / Tipper – 150nos & 80 nos<br>Dozer – 07 nos & 05 nos<br>Grader – 03 nos & 2 nos                                                                                                               | The Dumpers/Tipplers mentioned in T&P list seems to be much on higher side and it shall be reduced to 100 nos.<br><br>Along with the above, it is requested to reduce the number of support equipment like Grader, Dozer, Vibro Roller.                                                                                                                                                                 | Tender Condition prevails.                                                                                                                                                  |
| <b>8</b>       | TCC                              | 3.8 in TCC                                     | Land/Open Space: BHEL shall provide free of charge limited open space inside or outside the proposed plant boundary for office, storage shed and laydown area as and where made available by Customer | We kindly request you to provide the required open space within the plant premises only, to facilitate smooth execution of the works and efficient site operations.                                                                                                                                                                                                                                     | Tender condition prevails.                                                                                                                                                  |

**Note:**

- 1) All other terms and conditions against this NIT shall remain unchanged.**
- 2) This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).**

**for BHARAT HEAVY ELECTRICALS LTD  
Manager/ SCT- CPC**

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

**BOQ CUM RATE SCHEDULE - PACKAGE-A**

**3 x 800 MW NLC TALABIRA TPP (NTTPP), Jharsuguda, Odisha, INDIA**

**Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump at 3 x 800 MW NLC TALABIRA TPP (NTTPP), Jharsuguda, Odisha, INDIA**

**Package A - Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump in the Northern side of the entire plant area excluding area along compound wall as demarcated in Plot Plan.**

**Annexure-B**

| <b>BOQ – PACKAGE - A</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                 |                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|------------------|
| <b>ST. NO</b>            | <b>DESCRIPTION OF ITEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>UNIT</b> | <b>QUANTITY</b> | <b>WEIGHTAGE</b> |
| <b>A</b>                 | <b>LEVELLING &amp; GRADING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                 |                  |
| 2600                     | <b>LEVELING &amp; GRADING:</b> Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge for the following: <b>(Cement &amp; Reinforcement Steel shall be provided by BHEL as free supply unless otherwise noted)</b>                                                                                                                                                     |             |                 |                  |
| A2601                    | <b>Cutting</b> of trees having girth more than <b>300 mm measured at a height of 1m</b> above ground level including removal of roots, stacking the seviceable material like trunks,branches etc at specified area and disposal of unseviceable parts/materials witthin a lead upto <b>1km</b> etc all complete.                                                                                                                                                                                                             |             |                 |                  |
| a                        | 300 mm upto 600 mm girth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EACH        | 100             | 0.000033612      |
| b                        | 601 mm upto 1200 mm girth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EACH        | 10              | 0.000015067      |
| c                        | 1200mm and above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EACH        | 5               | 0.000035068      |
| B2601                    | Removing, uprooting and disposal of roots of tree(upto approx 1m above the ground level) of all girths more than 300 mm measured etc at specified area and disposal of unserviceable parts/materials within a lead upto 1km etc all complete.                                                                                                                                                                                                                                                                                |             |                 |                  |
| a                        | 300mm upto 600mm girth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EACH        | 1,900           | 0.000510110      |
| b                        | 601mm upto 1200mm girth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EACH        | 15              | 0.000015094      |
| c                        | 1200mm and above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EACH        | 15              | 0.000039154      |
| 2602                     | Earth work in <b>stripping of top soil upto a maximum depth of 0.30m</b> below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm 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. | SQM         | 13,85,263       | 0.025814071      |

**BOQ – PACKAGE - A**

| <b>ST. NO</b> | <b>DESCRIPTION OF ITEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>UNIT</b> | <b>QUANTITY</b> | <b>WEIGHTAGE</b> |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|------------------|
| 2603          | Earth work in <b>excavation upto any depth below ground level in all types of soil including moorum, ash</b> which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                                                                                                                                                                                                      | CUM         | 3,25,379        | 0.023804326      |
| 2604          | Earth work in <b>excavation upto any depth below ground level in soft rock</b> (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc (but does not require chiselling or blasting) for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                           | CUM         | 13,700          | 0.001862719      |
| 2606          | Earth work in <b>excavation upto any depth below ground level in hard rock requiring controlled blasting</b> including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                                                                                                                                                      | CUM         | 3,425           | 0.000988092      |
| A2608         | Earth work in <b>filling upto any depth below ground level</b> for grading to proper grade and level in layers not exceeding <b>200mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)</b> with selected approved soil/soft rock <b>directly from excavation within a lead upto 1 km</b> and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer. <b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT.</b>                                                                         | CUM         | 3,25,379        | 0.011228456      |
| A2609         | Earth work in <b>filling upto any depth below ground level</b> for grading to proper grade and level in layers not exceeding <b>200mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)</b> with selected approved soil/soft rock from <b>compulsorily excavated earth available within a lead upto 1 km</b> and compacted as specified, dewatering (if required) <b>including re-excavation of stacked earth</b> , all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer. <b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT.</b> | CUM         | 5,00,000        | 0.041065517      |
| <b>A2610</b>  | Extra over ST No. 2601 to 2608, A2609, B2610 for carriage of serviceable/unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CUM         | 4,32,704        | 0.002986424      |
| B2610         | Disposal of unserviceable material/ earth in designated disposal areas as directed by the Engineer-in-charge within a lead upto 1 km. The earth shall not be dumped haphazardly but shall be spread in horizontal layers not exceeding 300mm in thickness and nominal compaction done upto 85% Proctor density to the satisfaction of the Owner. All clods shall be broken before placing the fill. Earthmoving machinery including dumpers, dozers, rollers and trucks shall be allowed to ply over the fill to permit compaction to take place.                                                                                                                                                                                                                                                                    | CUM         | 4,32,704        | 0.029419259      |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | UNIT | QUANTITY  | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|-------------|
| A2611  | <b>Earth work in filling up to any depth below ground level for grading to proper grade and level in layers not exceeding 200 mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with approved soil.</b> The soil shall be taken from already stacked earth available at Talabira mines and compacted as specified including re-excavation of stacked earth, transportation to site, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following average lead distances(average lead distance shall be calculated as "total trip distance to & fro" divided by 2):-<br><b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT. Lead certification shall be done jointly between BHEL and contractor by physical verification. Quantities shall be measured in line with certified lead in the respective BOQ item below. Royalty/seignorage fee (if any) shall be reimbursed seperately as per actuals.</b>                                                                                                                              |      |           |             |
| a      | Within average lead of 10km to 15km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 2,71,410  | 0.067435541 |
| b      | Within average lead of 15km to 20km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 90,470    | 0.029097187 |
| c      | Within average lead of 20km to 25km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 90,470    | 0.033530449 |
| B2611  | <b>Earth work in filling up to any depth below ground level for grading to proper grade and level in layers not exceeding 500 mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with available rock pieces of size less than 150 mm and fine material (i.e. soil, soft rock or mix of both)</b> from available stacked material at Talabira mines including re-excavation of stacked earth, royalty/seignorage fee (if any), transportation to site, sorting and segregation of rock pieces having size more than 150 mm, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following average lead distances(average lead distance shall be calculated as "total trip distance to & fro" divided by 2):-<br><b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT. Lead certification shall be done jointly between BHEL and contractor by physical verification. Quantities shall be measured in line with certified lead in the respective BOQ item below. Royalty/seignorage fee (if any) shall be reimbursed seperately as per actuals.</b> |      |           |             |
| a      | Within average lead of 10km to 15km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 10,85,641 | 0.290722377 |
| b      | Within average lead of 15km to 20km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 3,61,880  | 0.123382063 |
| c      | Within average lead of 20km to 25km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 3,61,880  | 0.136619410 |
| 2613   | Providing and laying <b>300mm thick good quality dry stone pitching</b> on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CUM  | 9,750     | 0.017166256 |
| A2613  | Providing and laying <b>90 mm thick fly ash brick lining</b> in cement mortar 1:5 (1 cement : 5 coarse sand) on the slopes of earth fill/cut including raking out joints, curing, scaffolding etc all complete as per specification. drawing and as per direction of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |           |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | UNIT | QUANTITY | WEIGHTAGE   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| a      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup> (including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CUM  | 7,638    | 0.031317883 |
| 2614   | Concrete of <b>grade M10</b> (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  | 1,479    | 0.003897307 |
| 2615   | Providing and laying <b>Design Mix cement concrete of M25 grade</b> conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size at all level below / 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.                                                                                                                                                                                                                                        | CUM  | 4,761    | 0.013807490 |
| 2616   | <b>Fairface form work with good quality water proof ply wood</b> of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.                                                                                                                                                                                                                                                                                                                                                                                                        | SQM  | 60,984   | 0.029631188 |
| A2617  | Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of <b>TMT corrosion resistant steel (CRS) of grade Fe-500/500D conforming to IS:1786</b> including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement Steel shall be provided by BHEL free of cost)</b>                                                                                                                                                                                                                                      | MT   | 463      | 0.003666587 |
| B2617  | Supplying and laying <b>400mmx200mmx300 mm deep precast concrete kerb stone of grade M20</b> with 20mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13 mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc. all complete.                                                                                                                                                                                                                                                                                                                                                                     | RM   | 8,450    | 0.002528149 |
| C2617  | Supplying and laying <b>400mmx100mmx300 mm deep precast concrete key block of grade M20</b> with 20mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13 mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc. all complete.                                                                                                                                                                                                                                                                                                                                                                      | RM   | 33,800   | 0.005056298 |
| 2618   | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for <b>Concrete in precast works</b> at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades. |      |          |             |
| a      | M25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CUM  | 5        | 0.000024984 |
| 2619   | Providing and laying <b>250 mm thick random rubble (RR) masonry</b> including caulking with 1 cement: 4 sand mortar with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.                                                                                                                                                                                                                                                                                                                                                                                                  | CUM  | 6,240    | 0.018691098 |
| 2620   | Construction of bench mark pillar/reference pillar/grid pillar at different locations including clearing of jungles, excavation, supply of materials, pillar marking, backfilling, white washing, painting on MS plate etc all complete as per                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |             |



**BOQ – PACKAGE - A**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY | WEIGHTAGE   |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
|            | specification, drawings and instructions of the engineer-in- charge.(Pillars shall be constructed in line with BHEL standard drawings. Cement & Reinforcement steel shall be provided by BHEL free of cost)                                                                                                                                                                                                                                                                    |      |          |             |
| a          | Bench mark pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Each | 5        | 0.000019375 |
| b          | Grid/reference pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Each | 20       | 0.000060486 |
| 2621       | Installation of bench mark pillar/reference pillar/grid pillar at different locations including clearing of jungles, excavation, pillar marking, backfilling, white washing, painting on MS plate etc all complete as per specification, drawings and instructions of the engineer-in- charge. (Pre-cast pillar shall be issued by BHEL free of cost.)                                                                                                                         |      |          |             |
| a          | Bench mark pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Each | 15       | 0.000014531 |
| b          | Grid/reference pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Each | 40       | 0.000030243 |
| A215       | Dismantling 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 1 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, Brickwork, etc                                                                                                                                                                                                                                                                                                                                                                                                                            | CUM  | 250      | 0.000198771 |
| b          | Reinforced cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                       | CUM  | 125      | 0.000152615 |
| c          | WBM road                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 750      | 0.000112559 |
| d          | Bituminous Roads                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SQM  | 750      | 0.000221806 |
| <b>B</b>   | <b>STORM WATER DRAIN WORKS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |             |
| <b>100</b> | <b>EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.</b>                                                                                                                                                                                                                                                                    |      |          |             |
| 101        | Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level. |      |          |             |
| a          | Depth from ground level but not exceeding 2 m                                                                                                                                                                                                                                                                                                                                                                                                                                  | CUM  | 17342    | 0.001232812 |
| b          | Depth exceeding 2 m but not exceeding 4 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8558     | 0.000761943 |
| c          | Depth exceeding 4 m but not exceeding 6 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8558     | 0.000950952 |
| d          | Depth exceeding 6 m but not exceeding 8 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8225     | 0.001141018 |
| e          | Depth exceeding 8 m but not exceeding 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 4113     | 0.000684126 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UNIT | QUANTITY | WEIGHTAGE   |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 103    | Earth work in excavation in soft rock including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level. |      |          |             |
| d      | Depth exceeding 6 m but not exceeding 8 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CUM  | 500      | 0.000090640 |
| e      | Depth exceeding 8 m but not exceeding 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 5189     | 0.001081756 |
| A108   | Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding <b>300 mm thickness</b> using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following:                                                                                                                                                       |      |          |             |
| a      | at least 90% maximum dry density as per IS-2720 (Part-VII)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 21549    | 0.000699013 |
| 109    | Extra over ST No. 101 and 103 to A108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |             |
| b      | Carriage for disposal of serviceable/unserviceable material/ earth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CUM  | 30936    | 0.000277567 |
| B111   | Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 75% 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  | 25       | 0.000015529 |
| C111   | Supplying, stacking and laying sand of approved quality as cushion over base/bed of reservoir and on slopes of embankment including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.                                                                                                                                                                                                               | CUM  | 125      | 0.000077645 |
| 200    | <b>CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Cement shall be supplied by BHEL free of cost)</b>           |      |          |             |
| 202    | Concrete of grade <b>M10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level <b>upto depth of 10m from FFL.</b> (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224)                                                                                                                                                                                                              | CUM  | 280      | 0.000737827 |
| 204    | Concrete of grade <b>M20</b> (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level <b>upto depth of 10m from FFL.</b> (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224).                                                                                                                                                                                                                    | CUM  | 147      | 0.000386953 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | UNIT | QUANTITY | WEIGHTAGE   |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 205    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing below finished floor level upto a <b>depth of 10m from FFL</b> (For depths greater than 10m from FFL, extra over for additional depth to be paid in Item No 224), for the following.                                                                                                                                                |      |          |             |
| c      | M 30 Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CUM  | 874      | 0.002549789 |
| 206    | Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing <b>upto 10m level above finished floor level</b> (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225), for the following.                                                                                                                                                                                                            |      |          |             |
| c      | M 30 Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CUM  | 713      | 0.002141603 |
| 211    | Providing and <b>encasing of structural steel member</b> with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |          |             |
| b      | M 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CUM  | 1        | 0.000002635 |
| 212    | <b>Screed concrete</b> conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225) or thickness, drains etc complete as per following.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |          |             |
| a      | 01:02:04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CUM  | 639      | 0.001683826 |
| 213    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>precast works</b> like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades. |      |          |             |
| b      | M25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CUM  | 3        | 0.000014991 |
| 214    | Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>water retaining/conveying structures</b> including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate upto depth of 10m from FFL, (For depth greater than 10m from FFL, extra over for                                                                                                                                                                                                        |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                         | UNIT | QUANTITY | WEIGHTAGE   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
|        | additional depth to be paid in Item No 224). for following grades. Watertightness is to be ensured including structural grouting if required.                                                                                                                                                                                                                                                                                                                               |      |          |             |
| b      | M30                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 3526     | 0.011223598 |
| 215    | Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.                                                                                                                         |      |          |             |
| a      | Plain cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 1        | 0.000000795 |
| b      | Reinforced cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                    | CUM  | 1        | 0.000001221 |
| 216    | Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .                                                                       | CUDM | 10       | 0.000000607 |
| 217    | Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.                                                                                                                                                           | SQCM | 10       | 0.000000048 |
| 218    | Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.                                                                                                                                                                                                                                                                             | CUDM | 3        | 0.000000565 |
| 224    | Extra over item no. 201 to 205 and 214 for depth below FFL (Finished Floor Level) as per following:                                                                                                                                                                                                                                                                                                                                                                         |      |          |             |
| (a)    | Depth exceeding 10m from FFL but not exceeding 20m                                                                                                                                                                                                                                                                                                                                                                                                                          | CUM  | 281      | 0.000064776 |
| 300    | <b>FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>                                                                                                                                                                             |      |          |             |
| 301    | Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge. |      |          |             |
| a      | Upto Depth 10m From FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 9675     | 0.004700934 |
| b      | Depth exceeding 10m From FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                | SQM  | 300      | 0.000160259 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UNIT | QUANTITY | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 302    | Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended/intermediate floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |          |             |
| a      | For Height Upto 20m from FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 1536     | 0.000895795 |
| 304    | Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |          |             |
| a      | Upto 150 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Each | 10       | 0.000001753 |
| b      | Pockets of depths more than 150mm and upto 300 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Each | 10       | 0.000002878 |
| c      | Pockets of depths more than 300mm and upto 600 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Each | 3        | 0.000001518 |
| d      | Pockets of depths more than 600mm and upto 1000 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Each | 3        | 0.000002356 |
| 400    | <b>REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |          |             |
| A402   | Transporting, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of <b>TMT corrosion resistant steel (CRS) of grade Fe-500/500D/550/550D conforming to IS:1786</b> including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement Steel shall be provided by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                         | MT   | 562      | 0.004450587 |
| 405    | Providing & fixing of Rebar in existing concrete surface by inserting reinforcemnet bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall beconducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable. |      |          |             |
| a      | 12mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos. | 3        | 0.000001348 |
| b      | 16mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos. | 3        | 0.000002193 |
| c      | 20mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos. | 3        | 0.000003178 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | UNIT | QUANTITY | WEIGHTAGE   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 406    | Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR or any other Grade confirming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).                                                                                                                                                                                                                                    |      |          |             |
| a      | 12mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000126 |
| b      | 16mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000133 |
| c      | 20mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000168 |
| d      | 25mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000249 |
| e      | 28mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000306 |
| f      | 32mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000387 |
| g      | 36mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000509 |
| h      | 40mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        | 0.000000683 |
| 500    | <b>Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                          |      |          |             |
| A501   | Providing and laying underbed/topping grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of <b>35 mm</b> including preparation of surface, batching, mixing, leveling etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                          | SQM  | 130      | 0.000031277 |
| 506    | Providing and applying PU based water proofing treatment with one coat of polyurethane or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge. | SQM  | 130      | 0.000107309 |
| A510   | Providing and laying pressed clay tiles of 18mm thickness and size 230x230mm conforming to indian standard with 8 mm thick 1:3 cement mortar mixed with water proofing compound over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making)                                                                                          | SQM  | 130      | 0.000058948 |
| A511   | Providing and applying two coats of bitumen grade 85/25 as per IS 702 ( @ 1.2kg/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  | 4527     | 0.000686125 |

**BOQ – PACKAGE - A**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                          | UNIT | QUANTITY | WEIGHTAGE   |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| A519       | <b>Screed concrete of 1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume) M15</b> having average thickness of 75mm conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size including green saw cutting in panels of size 3mx4m with grooves 10mmx10mm and sealing of grooves with elastomeric sealant on the roof at all level or thickness, drains etc complete as per specification. | SQM  | 65       | 0.000013414 |
| A518       | Providing and placing approved quality of <b>loosely laid 120-150 GSM geotextile (non-woven polyester)</b> over elasomeric membrane as per specification and as directed by the engineer-in-charge. Minimum width of geotextile shall be 3.5m. (cost of elastomeric membrane paid elsewhere)                                                                                                                                                 | SQM  | 65       | 0.000003988 |
| A522       | Providing and applying <b>two coats of acrylic based polymer modified cementitious composite coating system</b> having fine silica/quartz sand of 0.6mm and total thickness shall be 1.5mm of approved make laid as per manufacture's specification etc all complete including surface preparation, minor cleaning works, removal of loose concrete, laitance, dust particles, etc. all complete as per specification.                       | SQM  | 7941     | 0.002451789 |
| B522       | Providing and applying 20mm thick plaster (1:3) mixed with admixture of approved quality water proofing compound etc. all complete as per specification.                                                                                                                                                                                                                                                                                     | SQM  | 3970     | 0.000991881 |
| C522       | Providing and applying 10mm thick plaster (1:3) mixed with admixture of approved quality water proofing compound etc. all complete as per specification.                                                                                                                                                                                                                                                                                     | SQM  | 120      | 0.000021534 |
| <b>600</b> | <b>JOINTS AND FILLERS: Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                               |      |          |             |
| 601        | Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.                                                                                                                                                                                                                              |      |          |             |
| c          | 25 mm wide joints                                                                                                                                                                                                                                                                                                                                                                                                                            | SQM  | 20       | 0.000015695 |
| d          | 50 mm wide joints                                                                                                                                                                                                                                                                                                                                                                                                                            | SQM  | 20       | 0.000032701 |
| 603        | Providing and applying <b>polysulphide based sealant</b> conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves (10 mm thick baker rod to be paid separately):                                                                                                                                              |      |          |             |
| c          | 20mmX25mm groove size                                                                                                                                                                                                                                                                                                                                                                                                                        | RM   | 100      | 0.000040872 |
| 610        | Providing and fixing <b>PVC water stops</b> in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)                                                                                                                                                                                                                                                                                                |      |          |             |
| d          | 230 mm wide and 6 mm thick                                                                                                                                                                                                                                                                                                                                                                                                                   | RM   | 362      | 0.000089944 |
| <b>700</b> | <b>MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                  |      |          |             |

**BOQ - PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                     | UNIT | QUANTITY | WEIGHTAGE   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 701    | Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.                                                                                                                                                                                  | MT   | 2        | 0.000151610 |
| 702    | Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of <b>mild steel foundation bolt</b> assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. | MT   | 1        | 0.000094125 |
| 704    | Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.                                                                                                                                                                  |      |          |             |
| d      | Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:                                                                                                                                                                                                                                         |      |          |             |
| i      | 8mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000000176 |
| ii     | 10mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        | 0.000000228 |
| iii    | 12mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        | 0.000000283 |
| iv     | 14mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        | 0.000000435 |
| 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      | HST M8                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nos  | 5        | 0.000000977 |
| ii     | HST M10                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000001349 |
| iii    | HST M12                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000002429 |
| iv     | HST M16                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000004276 |
| v      | HST M20                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000007426 |
| vi     | HST M24                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        | 0.000014870 |
| f      | Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:                                                                                                                                                                                                                                          |      |          |             |
| i      | HAS-E5.8 M8                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos  | 5        | 0.000001905 |
| ii     | HAS-E5.8 M10                                                                                                                                                                                                                                                                                                                                                                                                                            | Nos  | 5        | 0.000002326 |
| iii    | HAS-E5.8 M12                                                                                                                                                                                                                                                                                                                                                                                                                            | Nos  | 5        | 0.000002968 |
| iv     | HAS-E5.8 M16                                                                                                                                                                                                                                                                                                                                                                                                                            | Nos  | 5        | 0.000005035 |



**BOQ – PACKAGE - A**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | UNIT | QUANTITY | WEIGHTAGE   |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| v          | HAS-E5.8 M20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nos  | 5        | 0.000007875 |
| vi         | HAS-E5.8 M24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nos  | 5        | 0.000010853 |
| <b>800</b> | <b>GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                                 |      |          |             |
| 801        | Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.                                                            | SQM  | 5        | 0.000002878 |
| 803        | Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).                                                                                                  | CUM  | 1        | 0.000016876 |
| 804        | Providing & <b>grouting</b> 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 <b>ConbextraGP-1 or equivalent</b> as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).                                                                                                                                                                 | CUM  | 1        | 0.000032851 |
| <b>900</b> | <b>DOORS &amp; WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                         |      |          |             |
| 904        | Providing and fixing <b>single or double steel door shutters with 45mm thk flush</b> design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continous pressed steel chanel with min 18G, shop and final painting etc all complete. | SQM  | 7        | 0.000068415 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | UNIT | QUANTITY | WEIGHTAGE   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 906    | Providing and fixing <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 3        | 0.000001095 |
| 909    | Providing and fixing <b>anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames</b> , windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b> | Kg   | 1181     | 0.000629257 |
| A912   | Providing and fixing pressed galvanised steel frames in single rebate profile of size 100X57mm fabricated from 18 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, back plate bracket, grouting with cement slurry, floor tiles/weather bars ,paintings etc all complete as per specifications. Frames shall be mitered and field assembled with self tabs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Kg   | 42       | 0.000005711 |
| 913    | Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath). <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |          |             |
| b      | Mechanically Operated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 20       | 0.000066036 |
| c      | Electrically operated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 25       | 0.000105718 |
| A914   | Providing and fixing hard core FRP doors of approved manufacturer's including all door frame, fitting & fixtures as per specification, drawing and instructions of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SQM  | 2        | 0.000006096 |
| 915    | Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY | WEIGHTAGE   |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| a      | 4 mm thick clear sheet glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        | 0.000003677 |
| b      | 4 mm thick clear float glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        | 0.000003731 |
| c      | 6 mm thick clear float glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        | 0.000004174 |
| f      | 5.5 mm thick clear wired glass                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SQM  | 79       | 0.000115046 |
| i      | 4mm thick Polycarbonate sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 79       | 0.000117379 |
| j      | 4 mm thick ground glass                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SQM  | 3        | 0.000003831 |
| n      | 8 mm thick clear toughened float glass                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 3        | 0.000006581 |
| 1000   | <b>BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                            |      |          |             |
| 1001   | Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.                                                                                                                                                                              |      |          |             |
| b      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                | CUM  | 4        | 0.000013505 |
| 1002   | Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014), places and position above plinth including raking out joints, curing, scaffolding etc complete but excluding plastering and painting.                                                                             |      |          |             |
| b      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                | CUM  | 187      | 0.000864852 |
| 1005   | Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.                                                                                                                                                                                                                                                                 | CUM  | 1        | 0.000001440 |
| 1006   | 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 of 1:6 upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014). Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately) |      |          |             |
| a      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                | CUM  | 1        | 0.000003698 |

**BOQ – PACKAGE - A**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                       | UNIT | QUANTITY | WEIGHTAGE   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 1008        | Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.                                                                                                                                                                                                                                             | CUM  | 1        | 0.000001650 |
| 1009        | Supply and placing in position mild steel wire fabric(Chicken Wire Mesh) 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  | 1        | 0.000000149 |
| 1010        | Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.                                                  | SQM  | 1        | 0.000000714 |
| <b>1100</b> | <b>DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>               |      |          |             |
| A1101       | Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 12mm blue granite chips and 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.                                                    |      |          |             |
| a           | 40mm thick                                                                                                                                                                                                                                                                                                                                                                                | SQM  | 17       | 0.000004294 |
| <b>1200</b> | <b>PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                      |      |          |             |
| A1201       | Providing 20mm thick plaster in two layers outside the building/boundary wall in cement mortar as applicable upto 10m above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete |      |          |             |
| b           | Cement Mortar 1:4                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 633      | 0.000160991 |
| 1202        | Providing 12mm thick plaster internal/external surfaces of building/boundary wall in cement mortar as applicable above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls finished to a smooth finish as per specification all complete.                                                                   |      |          |             |
| b           | Cement Mortar 1:4                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 918      | 0.000172334 |
| A1204       | Providing 10mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.                                                                                                                                                                                                                                                                                           | SQM  | 130      | 0.000035740 |
| <b>1300</b> | <b>FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                   |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | UNIT | QUANTITY | WEIGHTAGE   |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 1305        | Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.                                                                                                                                                                                                                                                                                                                                                                                                                 | SQM  | 907      | 0.000105855 |
| A1316       | Providing and applying 3 mm thick putty punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 454      | 0.000067165 |
| A1319       | Providing and applying <b>two or more coats of Exterior emulsion paint of anti fungal weather proof quality</b> of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.            | SQM  | 21       | 0.000001829 |
| A1320       | Providing and applying <b>chemical resistant paint</b> having high build, solvent free, self smoothing, primer coat, etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 80       | 0.000021904 |
| <b>1400</b> | <b>FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                                                                                                                                                                               |      |          |             |
| 1401        | Providing and laying <b>50 mm thick heavy duty cement</b> concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm 20 well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium/glass strips etc. all complete for following (Quoted item rate shall be inclusive of providing aluminum/glass joint strips): | SQM  | 414      | 0.000188013 |
| A1401       | Providing and laying 50 mm thick heavy duty granolithic concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm 20 well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium/glass strips etc. all complete for following (Quoted item rate shall be inclusive of providing aluminum/glass joint strips):   | SQM  | 50       | 0.000025621 |
| 1416        | Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following                                                                                                                                                                                                                                                                                                                                                |      |          |             |
| a           | 7mm thick tiles In flooring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 25       | 0.000020429 |
| A1418       | 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 40 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes                                                                                                                                                                                                                                                                                                          |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| a      | 400X400 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 3        | 0.000003245 |
| b      | 600X600 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 10       | 0.000011643 |
| 1422   | 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 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |          |             |
| a      | 20mm thick                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 34       | 0.000078564 |
| 1428   | Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 4        | 0.000002821 |
| 1500   | <b>ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |             |
| A1502  | Erection and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of <b>38 mm</b> having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ <b>180 gm/sqm</b> including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b> |      |          |             |
| a      | Span Upto 1800mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SQM  | 120      | 0.000184029 |
| 1509   | Supply, Erection and fixing profiled Internal Cladding sheet manufactured out of 0.8 mm TCT(Total Coated Thickness) of permanently colour coated zinalume steel (150/180 gsm. zinc-aluminium alloy coating mass total of both sides as per AS 1397:1993). The colour coating shall comprise of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side. The sheet shall have 980 mm cover width, 28mm height crests at 195mm centres with special male/female side laps and anti-siphoning features to prevent leakage. The sheet shall be fixed to the structure by means of self drilling fastners no. 12-24 X 25mm conforms to AS :3566 Class-3 long at valley.Sub- girts of size 50mm X 50mm X 50mm manufactured out of 16G GI (1.6mm GI) 'Z' shape would be fixed the inner sheeting on face side at runner locations all complete as per specification. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | UNIT | QUANTITY | WEIGHTAGE   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| a)          | For final painting with Silicon Modified Polyester(SMP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |             |
| i)          | For zincalume sheet 150gsm. And having 550Mpa yield strength.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SQM  | 437      | 0.000429791 |
| <b>1600</b> | <b>FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |          |             |
| 1601        | Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preperation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.                                                                                                                                                                                                                                                                                                                                                                                                                           |      |          |             |
| a           | 12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 25       | 0.000019532 |
| 1602        | Providing, fixing and laying light weight <b>mineral fiber tile false ceiling of minimum thickness 15 mm</b> and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density48kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also beprovided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate. | SQM  | 25       | 0.000037943 |
| <b>1700</b> | <b>RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |          |             |
| A1704       | Providing and fixing <b>galvanised DI down take pipes of 150 mm dia-</b> Medium quality as per IS:1239(part-I) all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RM   | 5        | 0.000005744 |
| 1706        | Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RM   | 46       | 0.000041971 |
| 1708        | Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |          |             |
| b           | 150 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 2        | 0.000003313 |
| c           | 200 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 2        | 0.000004610 |
| A1708       | Providing and fixing DI down take pipes conforming to IS:8329 all complete as per specification for following diameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |          |             |
| a           | 100 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        | 0.000002201 |

**BOQ – PACKAGE - A**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | UNIT | QUANTITY | WEIGHTAGE   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| b           | 150 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        | 0.000003133 |
| c           | 200 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        | 0.000004077 |
| <b>1800</b> | <b>MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                                            |      |          |             |
| A1801       | Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range <b>63 mm to 45 mm</b> in layers not exceeding <b>250 mm in thickness</b> 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  | 100      | 0.000124232 |
| 1809        | Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)                                                                                                                                                             | NO   | 5        | 0.000043109 |
| 1810        | Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)                                                                                                                                                               | NO   | 5        | 0.000033525 |
| 1811        | Construction of below ground earthing system earth electrodes as per drawing and specification. ( Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)                                                                                                                                                                                                                                                              | NO   | 5        | 0.000002999 |
| 1812        | Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. ( Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)                                                                                                                                                                                                                                         | NO   | 5        | 0.000002240 |
| 1813        | Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.                                                                                                                                                                                                                                                                                              | NO   | 5        | 0.000126244 |
| 1814        | Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.                                                                                                                                                                                                                                                   | NO   | 5        | 0.000069542 |
| 1816        | Providing and fixing <b>PVC pressure release valve</b> 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.                                                                                                                                                                  | NO   | 29       | 0.000248908 |
| <b>2000</b> | <b>FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                             |      |          |             |



**BOQ – PACKAGE - A**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | UNIT | QUANTITY | WEIGHTAGE   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| A2001       | Supplying and erecting in position <b>2.1 m high PVC coated galvanised chain linked fencing of minimum 8 gauge</b> (including PVC coating ) of <b>mesh size 75mm x 75mm</b> . The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. <b>GI barbed wire</b> fencing of height of <b>600 mm</b> 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 paid separately under item 2007) | RM   | 323      | 0.000652285 |
| A2001       | Supplying and erecting in position <b>2.1 m high gavanised chain linked fencing of minimum 3.15mm diameter GI wire of mesh size 75mm</b> . The diameter of steel line wire for chain link fencing shall not be less than 4mm. 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. Chain link fencing shall be as per IS:2721 and galvanisation on chain link fencing shall be as per IS:12753, hard coated finish. (Structural post shall be paid separately under item 2007)                                                                                                                                                                                                          | RM   | 25       | 0.000045438 |
| 2007        | Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MT   | 1        | 0.000083068 |
| <b>2100</b> | <b>WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |          |             |
| 2108        | Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NOS  | 1        | 0.000000981 |
| A2110       | Providing and fixing stainless steel liquid soap holder mounted with C.P. screws etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NOS  | 1        | 0.000000499 |
| 2111        | Providing and fixing stainless steel / C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NOS  | 1        | 0.000000499 |
| 2112        | Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NOS  | 1        | 0.000000582 |
| 2114        | Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |             |
| a           | 500 litres capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NOS  | 1        | 0.000005886 |
| b           | 1000 litres capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NOS  | 1        | 0.000011772 |
| <b>2200</b> | <b>SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | UNIT | QUANTITY | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 2201   | Supply and fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete. |      |          |             |
| a      | White                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EACH | 1        | 0.000010894 |
| 2204   | Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.                                                                                                                                                                                       |      |          |             |
| a      | Floor mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EACH | 1        | 0.000007873 |
| b      | Wall mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EACH | 1        | 0.000012709 |
| 2205   | Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.                                                                                                                                                                                                       | EACH | 1        | 0.000006195 |
| 2206   | Providing and fixing white flat back glazed vitreous china urinals of size 370x315x620 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.                                                                                                                                                                                                                                                       | EACH | 1        | 0.000018024 |
| 2207   | Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.                                                                                                                                                                                                                                                                       |      |          |             |
| a      | 75mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RM   | 10       | 0.000003209 |
| b      | 110mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RM   | 10       | 0.000005094 |
| c      | 160mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RM   | 10       | 0.000007026 |
| 2208   | Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.                                                                                                                                                                                                                                                                                                                                     |      |          |             |
| a      | 200mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       | 0.000009317 |
| b      | 300mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       | 0.000014991 |
| c      | 450mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       | 0.000019097 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                        | UNIT | QUANTITY | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 2213   | Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes: |      |          |             |
| a      | 100x100mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        | 0.000001527 |
| b      | 150x100mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        | 0.000001692 |
| c      | 150x150mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        | 0.000001958 |
| 2220   | Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.                                                                                                                                                                   |      |          |             |
| a      | 75mm dia pipes                                                                                                                                                                                                                                                                                                                                                             | RM   | 3        | 0.000003087 |
| b      | 100mm dia pipes                                                                                                                                                                                                                                                                                                                                                            | RM   | 3        | 0.000003994 |
| c      | 150mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        | 0.000006141 |
| d      | 200mm dia pipes                                                                                                                                                                                                                                                                                                                                                            | RM   | 3        | 0.000009133 |
| A2221  | Providing and laying DI pipes conforming to indian standard for following. (Excavation,backfilling,concrete to be paid seperately)                                                                                                                                                                                                                                         |      |          |             |
| a      | 75mm dia                                                                                                                                                                                                                                                                                                                                                                   | RM   | 3        | 0.000001761 |
| b      | 100mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        | 0.000002201 |
| c      | 150mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        | 0.000003133 |
| d      | 200mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        | 0.000004077 |
| 2222   | Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.                                                                                                                                                                                                                          |      |          |             |
| a      | Upto 75 mm dia                                                                                                                                                                                                                                                                                                                                                             | RM   | 3        | 0.000001131 |
| b      | 100 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        | 0.000001377 |
| c      | 150 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        | 0.000002849 |
| d      | 200 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        | 0.000004197 |
| 2300   | <b>STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                     |      |          |             |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UNIT | QUANTITY | WEIGHTAGE   |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| A2301  | <p>Fabrication,erection and alignment of <b>structural steel of grade E250</b> 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 <b>including 2 coats of red oxide zinc-chromate primer (one coat at shop/fabrication site and one coat after erection)</b>, connection design &amp; 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 &amp; 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 &amp; 66o C for welding over 40 mm and upto 63 mm &amp; 110o C for thickness over 63 mm) &amp; use of low hydrogen electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural Steel shall be supplied by BHEL free of cost unless noted otherwise) Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%</p> | MT   | 28       | 0.000658878 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UNIT | QUANTITY | WEIGHTAGE   |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| B2301  | Fabrication,erection and alignment of <b>structural steel of grade E350</b> 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 <b>including 2 coats of red oxide zinc-chromate primer (one coat at shop/fabrication site and one coat after erection)</b> , connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural Steel shall be supplied by BHEL free of cost unless noted otherwise) Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15% | MT   | 3        | 0.000070594 |
| A2302  | Extra over ST NO. A2301 & B2302 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2 ) confirming to IS:1477 (Part i & II, latest revision) and applying zinc ethyl silicate primer in coats of minimum 75 micron (DFT) and confirming to IS:2074 (latest revision) erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | MT   | 31       | 0.000124971 |
| A2304  | Extra over ST No. A2301 & B2302 for providing and applying two coats of synthetic enamel paint confirming ti IS:2932 (latest revision) with minimum 100 micron total dry film thickness (DFT) (50 micron of each coats) 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 175 microns including protection and cleaning, scaffolding etc. all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MT   | 31       | 0.000073173 |
| 2307   | Supplying, fabrication, erection and alignment of factory made <b>electroforged galvanised grating</b> units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |          |             |
| a      | Minimum galvanisation of 610 g/sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MT   | 1        | 0.000089572 |
| 2311   | Providing and fixing in position of <b>permanent mild steel bolts</b> (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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | KG   | 16       | 0.000001568 |

**BOQ – PACKAGE - A**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | UNIT | QUANTITY | WEIGHTAGE   |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|
| 2312   | Providing and fixing in positing of <b>high strength structural bolts</b> (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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | KG   | 280      | 0.000028601 |
| A2312  | Providing and fixing in position of <b>high strength structural bolts</b> (of property class 10.9 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `10' 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | KG   | 140      | 0.000015731 |
| A2321  | Supply, fabrication and fixing of <b>galvanised</b> MS pipe (Medium Class) hand railing of 32 mm/40 mm dia <b>having rate of galvanisation 750gm/sqm</b> including GI toe guard min 6mm thick & min 150 mm wide, transportation, loading/unloading etc. all complete as per specification. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MT   | 3        | 0.000298718 |
| 2322   | Supply, fabrication and fixing of <b>GI pipe hand railing (900 mm high) of 32 mm/40 mm dia (Medium Grade)</b> including transportation, loading/unloading, painting etc. all complete. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MT   | 1        | 0.000099573 |
| 2329   | <b>Design, supply, fabrication, erection of stoplog gates, Sluice gates etc. in Pump Houses &amp; other structures</b> with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) (SS component shall be measured separately for payment) <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%;</b> | MT   | 27       | 0.002965707 |
| 2330   | SS component mentioned under ST No. 2329                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MT   | 10       | 0.002377743 |
| 2331   | Design, Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for <b>stationary screens</b> made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, submission of drawings / fabrication drawings for engineers approval etc all complete. ( supply of structural steel is in the scope of contractor only) <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                | MT   | 17       | 0.001764692 |
|        | <b>TOTAL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |          | 0.999999999 |

**3 x 800 MW NLC TALABIRA TPP (NTTPP), Jharsuguda, Odisha, INDIA**

**'Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump at 3 x 800 MW NLC TALABIRA TPP (NTTPP), Jharsuguda, Odisha, INDIA**

**Package B- Levelling and Grading works including construction of embankment along with lining, toe drains etc., Storm Water Pond and Storm Water Pump. All levelling and grading works in the Southern side of the entire plant area excluding area along compound wall as demarcated in Plot Plan.**

**Annexure- B**

| <b>BOQ - PACKAGE-B</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| <b>ST. NO</b>          | <b>DESCRIPTION OF ITEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>UNIT</b> | <b>QUANTITY</b> |
| <b>A</b>               | <b>LEVELLING &amp; GRADING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                 |
| 2600                   | <b>LEVELING &amp; GRADING:</b> Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge for the following: <b>(Cement &amp; Reinforcement Steel shall be provided by BHEL as free supply unless otherwise noted)</b>                                                                                                                                                     |             |                 |
| A2601                  | <b>Cutting</b> of trees having girth more than <b>300 mm measured at a height of 1m</b> above ground level including removal of roots, stacking the serviceable material like trunks, branches etc at specified area and disposal of unserviceable parts/materials within a lead upto <b>1km</b> etc all complete.                                                                                                                                                                                                           |             |                 |
| a                      | 300 mm upto 600 mm girth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EACH        | 100             |
| b                      | 601 mm upto 1200 mm girth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EACH        | 10              |
| c                      | 1200mm and above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EACH        | 5               |
| B2601                  | Removing, uprooting and disposal of roots of tree(upto approx 1m above the ground level) of all girths more than 300 mm measured etc at specified area and disposal of unserviceable parts/materials within a lead upto 1km etc all complete.                                                                                                                                                                                                                                                                                |             |                 |
| a                      | 300mm upto 600mm girth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EACH        | 2,200           |
| b                      | 601mm upto 1200mm girth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EACH        | 15              |
| c                      | 1200mm and above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EACH        | 15              |
| 2602                   | Earth work in <b>stripping of top soil upto a maximum depth of 0.30m</b> below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm 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. | SQM         | 9,17,069        |

**BOQ - PACKAGE-B**

| <b>ST. NO</b> | <b>DESCRIPTION OF ITEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>UNIT</b> | <b>QUANTITY</b> |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| 2603          | Earth work in <b>excavation upto any depth below ground level in all types of soil including moorum, ash</b> which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                                                                                                                                                                                                      | CUM         | 5,54,055        |
| 2604          | Earth work in <b>excavation upto any depth below ground level in soft rock</b> (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc (but does not require chiselling or blasting) for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                           | CUM         | 23,329          |
| 2606          | Earth work in <b>excavation upto any depth below ground level in hard rock requiring controlled blasting</b> including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.                                                                                                                                                                                                      | CUM         | 5,832           |
| A2608         | Earth work in <b>filling upto any depth below ground level</b> for grading to proper grade and level in layers not exceeding <b>200mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)</b> with selected approved soil/soft rock <b>directly from excavation within a lead upto 1 km</b> and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer. <b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT.</b>                                                                         | CUM         | 5,54,055        |
| A2609         | Earth work in <b>filling upto any depth below ground level</b> for grading to proper grade and level in layers not exceeding <b>200mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)</b> with selected approved soil/soft rock from <b>compulsorily excavated earth available within a lead upto 1 km</b> and compacted as specified, dewatering (if required) <b>including re-excavation of stacked earth</b> , all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer. <b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT.</b> | CUM         | 3,80,000        |
| <b>A2610</b>  | Extra over ST No. 2601 to 2608, A2609, B2610 for carriage of serviceable/unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CUM         | 3,04,282        |
| B2610         | Disposal of unserviceable material/ earth in designated disposal areas as directed by the Engineer-in-charge within a lead upto 1 km. The earth shall not be dumped haphazardly but shall be spread in horizontal layers not exceeding 300mm in thickness and nominal compaction done upto 85% Proctor density to the satisfaction of the Owner. All clods shall be broken before placing the fill. Earthmoving machinery including dumpers, dozers, rollers and trucks shall be allowed to ply over the fill to permit compaction to take place.                                                                                                                                                                                                                                                                    | CUM         | 3,04,282        |



## BOQ - PACKAGE-B

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | UNIT | QUANTITY |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| A2611  | <b>Earth work in filling up to any depth below ground level for grading to proper grade and level in layers not exceeding 200 mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with approved soil.</b> The soil shall be taken from already stacked earth available at Talabira mines and compacted as specified including re-excavation of stacked earth, transportation to site, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following average lead distances(average lead distance shall be calculated as "total trip distance to & fro" divided by 2):-<br><b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT. Lead certification shall be done jointly between BHEL and contractor by physical verification. Quantities shall be measured in line with certified lead in the respective BOQ item below. Royalty/seignorage fee (if any) shall be reimbursed seperately as per actuals.</b>                                                                                                                              |      |          |
| a      | Within average lead of 10km to 15km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 1,64,273 |
| b      | Within average lead of 15km to 20km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 54,758   |
| c      | Within average lead of 20km to 25km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 54,758   |
| B2611  | <b>Earth work in filling up to any depth below ground level for grading to proper grade and level in layers not exceeding 500 mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with available rock pieces of size less than 150 mm and fine material (i.e. soil, soft rock or mix of both)</b> from available stacked material at Talabira mines including re-excavation of stacked earth, royalty/seignorage fee (if any), transportation to site, sorting and segregation of rock pieces having size more than 150 mm, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following average lead distances(average lead distance shall be calculated as "total trip distance to & fro" divided by 2):-<br><b>The approval on the suitability for backfilling soil shall be taken from IIT/IISc/NIT. Lead certification shall be done jointly between BHEL and contractor by physical verification. Quantities shall be measured in line with certified lead in the respective BOQ item below. Royalty/seignorage fee (if any) shall be reimbursed seperately as per actuals.</b> |      |          |
| a      | Within average lead of 10km to 15km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 6,57,094 |
| b      | Within average lead of 15km to 20km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 2,19,031 |
| c      | Within average lead of 20km to 25km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 2,19,031 |
| 2613   | Providing and laying <b>300mm thick good quality dry stone pitching</b> on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CUM  | 5,250    |
| A2613  | Providing and laying <b>90 mm thick fly ash brick lining</b> in cement mortar 1:5 (1 cement : 5 coarse sand) on the slopes of earth fill/cut including raking out joints, curing, scaffolding etc all complete as per specification. drawing and as per direction of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | UNIT | QUANTITY |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| a      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CUM  | 4,113    |
| 2614   | Concrete of <b>grade M10</b> (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  | 797      |
| 2615   | Providing and laying <b>Design Mix cement concrete of M25 grade</b> conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size at all level below / 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.                                                                                                                                                                                                                                        | CUM  | 2,564    |
| 2616   | <b>Fairface form work with good quality water proof ply wood</b> of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.                                                                                                                                                                                                                                                                                                                                                                                                        | SQM  | 32,837   |
| A2617  | Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of <b>TMT corrosion resistant steel (CRS) of grade Fe-500/500D conforming to IS:1786</b> including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement Steel shall be provided by BHEL free of cost)</b>                                                                                                                                                                                                                                      | MT   | 250      |
| B2617  | Supplying and laying <b>400mmx200mmx300 mm deep precast concrete kerb stone of grade M20</b> with 20mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13 mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc. all complete.                                                                                                                                                                                                                                                                                                                                                                     | RM   | 4,550    |
| C2617  | Supplying and laying <b>400mmx100mmx300 mm deep precast concrete key block of grade M20</b> with 20mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13 mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc. all complete.                                                                                                                                                                                                                                                                                                                                                                      | RM   | 18,200   |
| 2618   | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for <b>Concrete in precast works</b> at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades. |      |          |
| a      | M25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CUM  | 3        |
| 2619   | Providing and laying <b>250 mm thick random rubble (RR) masonry</b> including caulking with 1 cement: 4 sand mortar with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.                                                                                                                                                                                                                                                                                                                                                                                                  | CUM  | 3,360    |

**BOQ - PACKAGE-B**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 2620       | Construction of bench mark pillar/reference pillar/grid pillar at different locations including clearing of jungles, excavation, supply of materials, pillar marking, backfilling, white washing, painting on MS plate etc all complete as per specification, drawings and instructions of the engineer-in- charge.(Pillars shall be constructed in line with BHEL standard drawings. Cement & Reinforcement steel shall be provided by BHEL free of cost)                     |      |          |
| a          | Bench mark pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Each | 5        |
| b          | Grid/reference pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Each | 10       |
| 2621       | Installation of bench mark pillar/reference pillar/grid pillar at different locations including clearing of jungles, excavation, pillar marking, backfilling, white washing, painting on MS plate etc all complete as per specification, drawings and instructions of the engineer-in- charge. (Pre-cast pillar shall be issued by BHEL free of cost.)                                                                                                                         |      |          |
| a          | Bench mark pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Each | 5        |
| b          | Grid/reference pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Each | 15       |
| A215       | Dismantling 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 1 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, Brickwork, etc                                                                                                                                                                                                                                                                                                                                                                                                                            | CUM  | 250      |
| b          | Reinforced cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                       | CUM  | 125      |
| c          | WBM road                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 750      |
| d          | Bituminous Roads                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SQM  | 750      |
| <b>B</b>   | <b>STORM WATER DRAIN WORKS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |
| <b>100</b> | <b>EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.</b>                                                                                                                                                                                                                                                                    |      |          |
| 101        | Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level. |      |          |
| a          | Depth from ground level but not exceeding 2 m                                                                                                                                                                                                                                                                                                                                                                                                                                  | CUM  | 17342    |
| b          | Depth exceeding 2 m but not exceeding 4 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8558     |
| c          | Depth exceeding 4 m but not exceeding 6 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8558     |
| d          | Depth exceeding 6 m but not exceeding 8 m                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 8225     |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UNIT | QUANTITY |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| e      | Depth exceeding 8 m but not exceeding 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 4113     |
| 103    | Earth work in excavation in soft rock including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level. |      |          |
| d      | Depth exceeding 6 m but not exceeding 8 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CUM  | 500      |
| e      | Depth exceeding 8 m but not exceeding 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 5189     |
| A108   | Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding <b>300 mm thickness</b> using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following:                                                                                                                                                       |      |          |
| a      | at least 90% maximum dry density as per IS-2720 (Part-VII)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 21549    |
| 109    | Extra over ST No. 101 and 103 to A108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |          |
| b      | Carriage for disposal of serviceable/unserviceable material/ earth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CUM  | 30936    |
| B111   | Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 75% 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  | 25       |
| C111   | Supplying, stacking and laying sand of approved quality as cushion over base/bed of reservoir and on slopes of embankment including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.                                                                                                                                                                                                               | CUM  | 125      |
| 200    | <b>CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Cement shall be supplied by BHEL free of cost)</b>           |      |          |
| 202    | Concrete of grade <b>M10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level <b>upto depth of 10m from FFL.</b> (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224)                                                                                                                                                                                                              | CUM  | 280      |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UNIT | QUANTITY |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 204    | Concrete of grade <b>M20</b> (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level <b>upto depth of 10m from FFL</b> . (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224).                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CUM  | 147      |
| 205    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing below finished floor level upto a <b>depth of 10m from FFL</b> (For depths greater than 10m from FFL, extra over for additional depth to be paid in Item No 224), for the following.                                                                                                                                                 |      |          |
| c      | M 30 Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 874      |
| 206    | Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing <b>upto 10m level above finished floor level</b> (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225), for the following.                                                                                                                                                                                                             |      |          |
| c      | M 30 Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CUM  | 713      |
| 211    | Providing and <b>encasing of structural steel member</b> with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |          |
| b      | M 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CUM  | 1        |
| 212    | <b>Screed concrete</b> conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225) or thickness, drains etc complete as per following.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |          |
| a      | 01:02:04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CUM  | 639      |
| 213    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>precast works</b> like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent preacast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades. |      |          |
| b      | M25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CUM  | 3        |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | UNIT | QUANTITY |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 214    | Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in <b>water retaining/conveying structures</b> including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate upto depth of 10m from FFL, (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224). for following grades. Watertightness is to be ensured including structural grouting if required. |      |          |
| b      | M30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 3526     |
| 215    | Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |
| a      | Plain cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CUM  | 1        |
| b      | Reinforced cement concrete of all grades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CUM  | 1        |
| 216    | Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .                                                                                                                                                                                                                                                                                                                                                    | CUDM | 10       |
| 217    | Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.                                                                                                                                                                                                                                                                                                                                                                                                                                        | SQCM | 10       |
| 218    | Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CUDM | 3        |
| 224    | Extra over item no. 201 to 205 and 214 for depth below FFL (Finished Floor Level) as per following:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |
| (a)    | Depth exceeding 10m from FFL but not exceeding 20m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CUM  | 281      |
| 300    | <b>FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |          |
| 301    | Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge.                                                                                                                                                                                                                                                                              |      |          |
| a      | Upto Depth 10m From FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 9525     |

**BOQ - PACKAGE-B**

| <b>ST. NO</b> | <b>DESCRIPTION OF ITEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>UNIT</b> | <b>QUANTITY</b> |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| b             | Depth exceeding 10m From FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM         | 300             |
| 302           | Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended/intermediate floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |                 |
| a             | For Height Upto 20m from FGL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM         | 1536            |
| 304           | Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                 |
| a             | Upto 150 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Each        | 10              |
| b             | Pockets of depths more than 150mm and upto 300 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Each        | 10              |
| c             | Pockets of depths more than 300mm and upto 600 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Each        | 3               |
| d             | Pockets of depths more than 600mm and upto 1000 mm depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Each        | 3               |
| 400           | <b>REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                 |
| A402          | Transporting, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of <b>TMT corrosion resistant steel (CRS) of grade Fe-500/500D/550/550D conforming to IS:1786</b> including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement Steel shall be provided by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                                                                                                                         | MT          | 562             |
| 405           | Providing & fixing of Rebar in existing concrete surface by inserting reinforcemnet bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall beconducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable. |             |                 |
| a             | 12mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos.        | 3               |
| b             | 16mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos.        | 3               |
| c             | 20mm Reinforcement bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos.        | 3               |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | UNIT | QUANTITY |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 406    | Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR or any other Grade confirming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).                                                                                                                                                                                                                                    |      |          |
| a      | 12mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| b      | 16mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| c      | 20mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| d      | 25mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| e      | 28mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| f      | 32mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| g      | 36mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| h      | 40mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nos. | 3        |
| 500    | <b>Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                          |      |          |
| A501   | Providing and laying underbed/topping grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of <b>35 mm</b> including preparation of surface, batching, mixing, leveling etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                          | SQM  | 130      |
| 506    | Providing and applying PU based water proofing treatment with one coat of polyurethane or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge. | SQM  | 130      |
| A510   | Providing and laying pressed clay tiles of 18mm thickness and size 230x230mm conforming to indian standard with 8 mm thick 1:3 cement mortar mixed with water proofing compound over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making)                                                                                          | SQM  | 130      |
| A511   | Providing and applying two coats of bitumen grade 85/25 as per IS 702 ( @ 1.2kg/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  | 4527     |



**BOQ - PACKAGE-B**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                          | UNIT | QUANTITY |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| A519       | <b>Screed concrete of 1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume) M15</b> having average thickness of 75mm conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size including green saw cutting in panels of size 3mx4m with grooves 10mmx10mm and sealing of grooves with elastomeric sealant on the roof at all level or thickness, drains etc complete as per specification. | SQM  | 130      |
| A518       | Providing and placing approved quality of <b>loosely laid 120-150 GSM geotextile (non-woven polyester) over</b> elasomeric membrane as per specification and as directed by the engineer-in-charge. Minimum width of geotextile shall be 3.5m. (cost of elastomeric membrane paid elsewhere)                                                                                                                                                 | SQM  | 130      |
| A522       | Providing and applying <b>two coats of acrylic based polymer modified cementitious composite coating system</b> having fine silica/quartz sand of 0.6mm and total thickness shall be 1.5mm of approved make laid as per manufacture's specification etc all complete including surface preparation, minor cleaning works, removal of loose concrete, laitance, dust particles, etc. all complete as per specification.                       | SQM  | 7941     |
| B522       | Providing and applying 20mm thick plaster (1:3) mixed with admixture of approved quality water proofing compound etc. all complete as per specification.                                                                                                                                                                                                                                                                                     | SQM  | 3970     |
| C522       | Providing and applying 10mm thick plaster (1:3) mixed with admixture of approved quality water proofing compound etc. all complete as per specification.                                                                                                                                                                                                                                                                                     | SQM  | 120      |
| <b>600</b> | <b>JOINTS AND FILLERS: Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                               |      |          |
| 601        | Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.                                                                                                                                                                                                                              |      |          |
| c          | 25 mm wide joints                                                                                                                                                                                                                                                                                                                                                                                                                            | SQM  | 20       |
| d          | 50 mm wide joints                                                                                                                                                                                                                                                                                                                                                                                                                            | SQM  | 20       |
| 603        | Providing and applying <b>polysulphide based sealant</b> conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves (10 mm thick baker rod to be paid separatly):                                                                                                                                               |      |          |
| c          | 20mmX25mm groove size                                                                                                                                                                                                                                                                                                                                                                                                                        | RM   | 100      |
| 610        | Providing and fixing <b>PVC water stops</b> in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)                                                                                                                                                                                                                                                                                                |      |          |
| d          | 230 mm wide and 6 mm thick                                                                                                                                                                                                                                                                                                                                                                                                                   | RM   | 362      |
| <b>700</b> | <b>MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                  |      |          |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                     | UNIT | QUANTITY |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 701    | Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.                                                                                                                                                                                  | MT   | 2        |
| 702    | Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of <b>mild steel foundation bolt</b> assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. | MT   | 1        |
| 704    | Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.                                                                                                                                                                  |      |          |
| d      | Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:                                                                                                                                                                                                                                         |      |          |
| i      | 8mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| ii     | 10mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        |
| iii    | 12mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        |
| iv     | 14mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                | Nos  | 5        |
| 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      | HST M8                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nos  | 5        |
| ii     | HST M10                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| iii    | HST M12                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| iv     | HST M16                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| v      | HST M20                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| vi     | HST M24                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nos  | 5        |
| f      | Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:                                                                                                                                                                                                                                          |      |          |
| i      | HAS-E5.8 M8                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos  | 5        |
| ii     | HAS-E5.8 M10                                                                                                                                                                                                                                                                                                                                                                                                                            | Nos  | 5        |
| iii    | HAS-E5.8 M12                                                                                                                                                                                                                                                                                                                                                                                                                            | Nos  | 5        |

**BOQ - PACKAGE-B**

| ST. NO     | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | UNIT | QUANTITY |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| iv         | HAS-E5.8 M16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nos  | 5        |
| v          | HAS-E5.8 M20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nos  | 5        |
| vi         | HAS-E5.8 M24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nos  | 5        |
| <b>800</b> | <b>GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)</b>                                                                                                                                                                                                                                                                                                                 |      |          |
| 801        | Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.                                                            | SQM  | 5        |
| 803        | Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).                                                                                                  | CUM  | 1        |
| 804        | Providing & <b>grouting</b> 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 <b>ConbextraGP-1 or equivalent</b> as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).                                                                                                                                                                 | CUM  | 1        |
| <b>900</b> | <b>DOORS &amp; WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                         |      |          |
| 904        | Providing and fixing <b>single or double steel door shutters with 45mm thk flush</b> design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continous pressed steel chanel with min 18G, shop and final painting etc all complete. | SQM  | 7        |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | UNIT | QUANTITY |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 906    | Providing and fixing <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 3        |
| 909    | Providing and fixing <b>anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames</b> , windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b> | Kg   | 1181     |
| A912   | Providing and fixing pressed galvanised steel frames in single rebate profile of size 100X57mm fabricated from 18 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, back plate bracket, grouting with cement slurry, floor tiles/weather bars ,paintings etc all complete as per specifications. Frames shall be mitered and field assembled with self tabs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Kg   | 42       |
| 913    | Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath). <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |          |
| b      | Mechanically Operated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 20       |
| c      | Electrically operated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM  | 25       |
| A914   | Providing and fixing hard core FRP doors of approved manufacturer's including all door frame, fitting & fixtures as per specification, drawing and instructions of engineer in charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SQM  | 2        |
| 915    | Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |

## BOQ - PACKAGE-B

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| a      | 4 mm thick clear sheet glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        |
| b      | 4 mm thick clear float glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        |
| c      | 6 mm thick clear float glass                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SQM  | 3        |
| f      | 5.5 mm thick clear wired glass                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SQM  | 79       |
| i      | 4mm thick Polycarbonate sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 79       |
| j      | 4 mm thick ground glass                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SQM  | 3        |
| n      | 8 mm thick clear toughened float glass                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 3        |
| 1000   | <b>BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                            |      |          |
| 1001   | Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.                                                                                                                                                                              |      |          |
| b      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                | CUM  | 4        |
| 1002   | Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014), places and position above plinth including raking out joints, curing, scaffolding etc complete but excluding plastering and painting.                                                                             |      |          |
| b      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)                                                                                                                                                                                                                                                                                                                                                | CUM  | 187      |
| 1005   | Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.                                                                                                                                                                                                                                                                 | CUM  | 1        |
| 1006   | 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 of 1:6 upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1014). Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately) |      |          |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                       | UNIT | QUANTITY |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| a      | Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup> (including cost of cement for brick making)                                                                                                                                                                                                                                              | CUM  | 1        |
| 1008   | Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.                                                                                                                                                                                                                                             | CUM  | 1        |
| 1009   | Supply and placing in position mild steel wire fabric(Chicken Wire Mesh) 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  | 1        |
| 1010   | Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.                                                  | SQM  | 1        |
| 1100   | <b>DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>               |      |          |
| A1101  | Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 12mm blue granite chips and 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.                                                    |      |          |
| a      | 40mm thick                                                                                                                                                                                                                                                                                                                                                                                | SQM  | 17       |
| 1200   | <b>PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                      |      |          |
| A1201  | Providing 20mm thick plaster in two layers outside the building/boundary wall in cement mortar as applicable upto 10m above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete |      |          |
| b      | Cement Mortar 1:4                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 633      |
| 1202   | Providing 12mm thick plaster internal/external surfaces of building/boundary wall in cement mortar as applicable above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls finished to a smooth finish as per specification all complete.                                                                   |      |          |
| b      | Cement Mortar 1:4                                                                                                                                                                                                                                                                                                                                                                         | SQM  | 918      |
| A1204  | Providing 10mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.                                                                                                                                                                                                                                                                                           | SQM  | 130      |

**BOQ - PACKAGE-B**

| ST. NO      | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | UNIT | QUANTITY |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| <b>1300</b> | <b>FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                      |      |          |
| 1305        | Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.                                                                                                                                                                                                                                                                                                                                                                                                                 | SQM  | 907      |
| A1316       | Providing and applying 3 mm thick putty punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 907      |
| A1319       | Providing and applying <b>two or more coats of Exterior emulsion paint of anti fungal weather proof quality</b> of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.            | SQM  | 21       |
| A1320       | Providing and applying <b>chemical resistant paint</b> having high build, solvent free, self smoothing, primer coat, etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SQM  | 80       |
| <b>1400</b> | <b>FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                                                                                                                                                                               |      |          |
| 1401        | Providing and laying <b>50 mm thick heavy duty cement</b> concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm 20 well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium/glass strips etc. all complete for following (Quoted item rate shall be inclusive of providing aluminum/glass joint strips): | SQM  | 414      |
| A1401       | Providing and laying 50 mm thick heavy duty granolithic concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm 20 well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium/glass strips etc. all complete for following (Quoted item rate shall be inclusive of providing aluminum/glass joint strips):   | SQM  | 50       |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UNIT | QUANTITY |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 1416   | Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |
| a      | 7mm thick tiles In flooring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SQM  | 25       |
| A1418  | 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 40 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |          |
| a      | 400X400 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 3        |
| b      | 600X600 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 10       |
| 1422   | 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 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |          |
| a      | 20mm thick                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 34       |
| 1428   | Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQM  | 4        |
| 1500   | <b>ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |          |
| A1502  | Erection and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of <b>38 mm</b> having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ <b>180 gm/sqm</b> including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b> |      |          |



**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | UNIT | QUANTITY |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| a      | Span Upto 1800mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SQM  | 120      |
| 1509   | Supply, Erection and fixing profiled Internal Cladding sheet manufactured out of 0.8 mm TCT(Total Coated Thickness) of permanently colour coated zincalume steel (150/180 gsm. zinc-aluminium alloy coating mass total of both sides as per AS 1397:1993). The colour coating shall comprise of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side. The sheet shall have 980 mm cover width, 28mm height crests at 195mm centres with special male/female side laps and anti-siphoning features to prevent leakage. The sheet shall be fixed to the structure by means of self drilling fasteners no. 12-24 X 25mm conforms to AS :3566 Class-3 long at valley.Sub- girts of size 50mm X 50mm X 50mm manufactured out of 16G GI (1.6mm GI) 'Z' shape would be fixed the inner sheeting on face side at runner locations all complete as per specification. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b> |      |          |
| a)     | For final painting with Silicon Modified Polyester(SMP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |          |
| i)     | For zincalume sheet 150gsm. And having 550Mpa yield strength.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SQM  | 437      |
| 1600   | <b>FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |          |
| 1601   | Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |          |
| a      | 12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SQM  | 25       |
| 1602   | Providing, fixing and laying light weight <b>mineral fiber tile false ceiling of minimum thickness 15 mm</b> and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density48kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate.                    | SQM  | 25       |
| 1700   | <b>RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |
| A1704  | Providing and fixing <b>galvanised DI down take pipes of 150 mm dia-</b> Medium quality as per IS:1239(part-I) all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RM   | 5        |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | UNIT | QUANTITY |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 1706   | Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.                                                                                                                                                                                                                                                                                                                                                                                       | RM   | 46       |
| 1708   | Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.                                                                                                                                                                                                                                                                                                                                                              |      |          |
| b      | 150 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 2        |
| c      | 200 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 2        |
| A1708  | Providing and fixing DI down take pipes conforming to IS:8329 all complete as per specification for following diameters.                                                                                                                                                                                                                                                                                                                                                                |      |          |
| a      | 100 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        |
| b      | 150 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        |
| c      | 200 mm Dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RM   | 3        |
| 1800   | <b>MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost unless noted otherwise)</b>                                                                                                                                            |      |          |
| A1801  | Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range <b>63 mm to 45 mm</b> in layers not exceeding <b>250 mm in thickness</b> 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  | 100      |
| 1809   | Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)                                                                                                                                                             | NO   | 5        |
| 1810   | Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)                                                                                                                                                               | NO   | 5        |
| 1811   | Construction of below ground earthing system earth electrodes as per drawing and specification. ( Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)                                                                                                                                                                                                                                                              | NO   | 5        |
| 1812   | Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. ( Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)                                                                                                                                                                                                                                         | NO   | 5        |
| 1813   | Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.                                                                                                                                                                                                                                                                                              | NO   | 5        |
| 1814   | Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.                                                                                                                                                                                                                                                   | NO   | 5        |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | UNIT | QUANTITY |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 1816   | Providing and fixing <b>PVC pressure release valve</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NO   | 29       |
| 2000   | <b>FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |          |
| A2001  | Supplying and erecting in position <b>2.1 m high PVC coated galvanised chain linked fencing of minimum 8 gauge</b> (including PVC coating ) of <b>mesh size 75mm x 75mm</b> . The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. <b>GI barbed wire</b> fencing of height of <b>600 mm</b> 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 paid separately under item 2007) | RM   | 323      |
| A2001  | Supplying and erecting in position <b>2.1 m high gavanised chain linked fencing of minimum 3.15mm diameter GI wire of mesh size 75mm</b> . The diameter of steel line wire for chain link fencing shall not be less than 4mm. 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. Chain link fencing shall be as per IS:2721 and galvanisation on chain link fencing shall be as per IS:12753, hard coated finish. (Structural post shall be paid separately under item 2007)                                                                                                                                                                                                          | RM   | 25       |
| 2007   | Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MT   | 1        |
| 2100   | <b>WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |          |
| 2108   | Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NOS  | 1        |
| A2110  | Providing and fixing stainless steel liquid soap holder mounted with C.P. screws etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NOS  | 1        |
| 2111   | Providing and fixing stainless steel / C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NOS  | 1        |
| 2112   | Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NOS  | 1        |
| 2114   | Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |          |
| a      | 500 litres capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NOS  | 1        |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | UNIT | QUANTITY |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| b      | 1000 litres capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NOS  | 1        |
| 2200   | <b>SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                                                                                                                                                                                                                                            |      |          |
| 2201   | Supply and fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete. |      |          |
| a      | White                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EACH | 1        |
| 2204   | Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.                                                                                                                                                                                       |      |          |
| a      | Floor mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EACH | 1        |
| b      | Wall mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EACH | 1        |
| 2205   | Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.                                                                                                                                                                                                       | EACH | 1        |
| 2206   | Providing and fixing white flat back glazed vitreous china urinals of size 370x315x620 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.                                                                                                                                                                                                                                                       | EACH | 1        |
| 2207   | Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.                                                                                                                                                                                                                                                                       |      |          |
| a      | 75mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RM   | 10       |
| b      | 110mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RM   | 10       |
| c      | 160mm dia pipes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RM   | 10       |
| 2208   | Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.                                                                                                                                                                                                                                                                                                                                     |      |          |
| a      | 200mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       |
| b      | 300mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       |
| c      | 450mm dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RM   | 10       |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                        | UNIT | QUANTITY |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 2213   | Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes: |      |          |
| a      | 100x100mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        |
| b      | 150x100mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        |
| c      | 150x150mm P or S Type.                                                                                                                                                                                                                                                                                                                                                     | EACH | 1        |
| 2220   | Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.                                                                                                                                                                   |      |          |
| a      | 75mm dia pipes                                                                                                                                                                                                                                                                                                                                                             | RM   | 3        |
| b      | 100mm dia pipes                                                                                                                                                                                                                                                                                                                                                            | RM   | 3        |
| c      | 150mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        |
| d      | 200mm dia pipes                                                                                                                                                                                                                                                                                                                                                            | RM   | 3        |
| A2221  | Providing and laying DI pipes conforming to indian standard for following. (Excavation,backfilling,concrete to be paid seperately)                                                                                                                                                                                                                                         |      |          |
| a      | 75mm dia                                                                                                                                                                                                                                                                                                                                                                   | RM   | 3        |
| b      | 100mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        |
| c      | 150mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        |
| d      | 200mm dia                                                                                                                                                                                                                                                                                                                                                                  | RM   | 3        |
| 2222   | Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.                                                                                                                                                                                                                          |      |          |
| a      | Upto 75 mm dia                                                                                                                                                                                                                                                                                                                                                             | RM   | 3        |
| b      | 100 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        |
| c      | 150 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        |
| d      | 200 mm dia                                                                                                                                                                                                                                                                                                                                                                 | RM   | 3        |
| 2300   | <b>STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.</b>                                                                     |      |          |

## BOQ - PACKAGE-B

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UNIT | QUANTITY |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| A2301  | <p>Fabrication,erection and alignment of <b>structural steel of grade E250</b> 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 <b>including 2 coats of red oxide zinc-chromate primer (one coat at shop/fabrication site and one coat after erection)</b>, connection design &amp; 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 &amp; 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 &amp; 66o C for welding over 40 mm and upto 63 mm &amp; 110o C for thickness over 63 mm) &amp; use of low hydrogen electrodes, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural Steel shall be supplied by BHEL free of cost unless noted otherwise) Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%</p> | MT   | 28       |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | UNIT | QUANTITY |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| B2301  | Fabrication,erection and alignment of <b>structural steel of grade E350</b> 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 <b>including 2 coats of red oxide zinc-chromate primer (one coat at shop/fabrication site and one coat after erection)</b> , connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen 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 separte agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural Steel shall be supplied by BHEL free of cost unless noted otherwise) Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15% | MT   | 3        |
| A2302  | Extra over ST NO. A2301 & B2302 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2 ) confirming to IS:1477 (Part i & II, latest revision) and applying zinc ethyl silicate primer in coats of minimum 75 micron (DFT) and confirming to IS:2074 (latest revision) erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MT   | 31       |
| A2304  | Extra over ST No. A2301 & B2302 for providing and applying two coats of synthetic enamel paint confirming ti IS:2932 (latest revision) with minimum 100 micron total dry film thickness (DFT) (50 micron of each coats) 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 175 microns including protection and cleaning, scaffolding etc. all complete as per specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | MT   | 31       |
| 2307   | Supplying, fabrication, erection and alignment of factory made <b>electroforged galvanised grating</b> units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |          |
| a      | Minimum galvanisation of 610 g/sqm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MT   | 1        |
| 2311   | Providing and fixing in position of <b>permanent mild steel bolts</b> (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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | KG   | 31       |

**BOQ - PACKAGE-B**

| ST. NO | DESCRIPTION OF ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | UNIT | QUANTITY |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 2312   | Providing and fixing in positing of <b>high strength structural bolts</b> (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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | KG   | 280      |
| A2312  | Providing and fixing in position of <b>high strength structural bolts</b> (of property class 10.9 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `10' 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | KG   | 140      |
| A2321  | Supply, fabrication and fixing of <b>galvanised</b> MS pipe (Medium Class) hand railing of 32 mm/40 mm dia <b>having rate of galvanisation 750gm/sqm</b> including GI toe guard min 6mm thick & min 150 mm wide, transportation, loading/unloading etc. all complete as per specification. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MT   | 3        |
| 2322   | Supply, fabrication and fixing of <b>GI pipe hand railing (900 mm high) of 32 mm/40 mm dia (Medium Grade)</b> including transportation, loading/unloading, painting etc. all complete. <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MT   | 1        |
| 2329   | <b>Design, supply, fabrication, erection of stoplog gates, Sluice gates etc. in Pump Houses &amp; other structures</b> with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) (SS component shall be measured separately for payment) <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%;</b> | MT   | 27       |
| 2330   | SS component mentioned under ST No. 2329                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MT   | 10       |
| 2331   | Design, Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for <b>stationary screens</b> made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, submission of drawings / fabrication drawings for engineers approval etc all complete. ( supply of structural steel is in the scope of contractor only) <b>Payment Breakup - a) On receipt of materials at site - 65%; b) Erection &amp; fixing - 35%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                | MT   | 17       |