

To,

ALL BIDDERS

**Subject: Corrigendum-07:** Amendment in Tender

**Tender Specification No: BHE/PW/PUR/TLRPT-CHP/2669**

**Job Description:** CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT (EXCEPT STRUCTURAL WORKS) AND LEVELING & GRADING WORKS OF CHP, AHP, LHP, GHP & OTHER AREAS OF FGD FOR 2X660MW TALCHER THERMAL PROJECT

Bidders to kindly take note of the following:

**AA]** The job description is being amended as below

Existing description	Amended as
CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT AND LEVELING & GRADING ETC. FOR CHP AREA FOR 2X660MW TALCHER THERMAL PROJECT (EXCEPT STRUCTURAL WORKS) <b>at 2X660MW NTPC TALCHER TPS PROJECT, Odisha</b>	CIVIL AND ARCHETECTURAL WORKS OF ALL BUILDINGS/STRUCTURES & ASSOCIATED WORKS FOR COAL HANDLING PLANT (EXCEPT STRUCTURAL WORKS) AND LEVELING & GRADING WORKS OF CHP, AHP, LHP, GHP & OTHER AREAS OF FGD FOR <b>2X660MW TALCHER THERMAL PROJECT</b>

**BB]** Clause no. 2.17.6 of Vol IC GCC is amended as below

Existing	Amended As
Base date shall be calendar month of the 'last date of submission of Tender	Base date shall be calendar month of the "date start of work duly certified by BHEL engineer."

**CC]** PQR B & PQR C1 are being revised as below

Existing PQR	Amended PQR
<p><b>B Technical PQR</b></p> <p><b>B.1:</b> Bidder should have Executed “<b>Piling or Civil or Structure or ‘Civil and Structural Works’ or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these works</b>” for any one of the following in the last seven years from latest date of bid submission:</p> <p><b>B.1.1)</b> Executed One work of value not less than ₹ 6520 Lakhs against single work order.</p> <p style="text-align: center;"><b>OR</b></p>	<p><b>B Technical PQR</b></p> <p><b>B.1:</b> Bidder should have Executed “<b>Piling or Civil or Structure or ‘Civil and Structural Works’ or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these works</b>” for any one of the following in the last seven years from latest date of bid submission:</p> <p><b>B.1.1)</b> Executed One work of value not less than ₹ 7000 Lakhs against single work order.</p> <p style="text-align: center;"><b>OR</b></p>

**B.1.2)** Executed Two works each of value not less than **₹ 4075 Lakhs** against maximum two work orders.

**OR**

**B.1.3)** Executed Three works each of value not less than **₹ 3260 Lakhs** against maximum three work orders.

**And**

**B.2.1.a.i):** Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 16520 Cum within a common period of twelve consecutive months in cumulative of two running/completed contracts

**OR**

**B.2.1.a.ii):** Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 11013 Cum within a period of twelve consecutive months against one running/completed contact.

**And**

**B.2.1.b.i):** Completed civil work of at least one "Wagon Tippler" OR "Underground Transfer House" OR "Underground Reclaim Hopper" OR "Underground Pump House" OR "Track Hopper" OR "Intake Pump House in Sea/River/Dam/Any other water body having minimum depth of 8m" below ground level.

**OR**

**B.2.1.b.ii):** Executed one civil works comprising of at least one wagon tippler for at least one unit of  $\geq 190$  MW

**OR**

**B.2.2):** Bidder should have executed track hopper or wagon tippler of Coal Handling Plant works of coal based/lignite based power plant of total installed capacity of 500 MW or higher capacity

**Note:** Bidder should satisfy (B.1 and B.2.1) or (B.1 and B.2.2) as a standalone bidder.

For qualification against (B.1 and B.2.1) In case a bidder does not satisfy B.2.1.b, then the bidder can form consortium with one party who satisfies the PQR B.2.1.b above. This will be termed as "**Consortium Bidding**".

In case of consortium bidding, following shall be

**B.1.2)** Executed Two works each of value not less than **₹ 4375 Lakhs** against maximum two work orders.

**OR**

**B.1.3)** Executed Three works each of value not less than **₹ 3500 Lakhs** against maximum three work orders.

**And**

**B.2.1.a.i):** Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least **16850** Cum within a common period of twelve consecutive months in cumulative of maximum two running/completed contracts

**OR**

**B.2.1.a.ii):** Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 11233 Cum within a period of twelve consecutive months against one running/completed contact.

**And**

**B.2.1.b.i):** Completed civil work of at least one "Wagon Tippler" OR "Underground Transfer House" OR "Underground Reclaim Hopper" OR "Underground Pump House" OR "Track Hopper" OR "Intake Pump House in Sea/River/Dam/Any other water body having minimum depth of 8m"

**OR**

**B.2.1.b.ii):** Executed one civil works comprising of at least one wagon tippler for at least one unit of  $\geq 190$  MW

**OR**

**B.2.2):** Bidder should have executed track hopper or wagon tippler of Coal Handling Plant works of coal based/lignite based power plant of total installed capacity of 500 MW or higher capacity

**Note:** Bidder should satisfy (B.1 and B.2.1) or (B.1 and B.2.2) as a standalone bidder.

For qualification against (B.1 and B.2.1) In case a bidder does not satisfy B.2.1.b, then the bidder can form consortium with one party who satisfies the PQR B.2.1.b above. This will be termed as "**Consortium Bidding**".

In case of consortium bidding, following shall be applicable:

applicable:	<ul style="list-style-type: none"> <li>Prime bidder should satisfy PQR (B.1 and B.2.1.a) above.</li> <li>Agency satisfying B.2.1.b shall be termed as "<b>Consortium Partner</b>".</li> <li>Prime bidder shall be responsible for satisfying the financial PQR-C (i.e. C-1, C-2, C-3 &amp; C.4).</li> <li>Prime bidder shall submit the entire tender along with the credentials, all statutory documents and the documents in support of PQR condition of the Consortium Partner.</li> </ul> <p><b>All conditions as in Clause 23 of NIT shall also be applicable for consortium bidding.</b></p>
C.1) Bidders must have achieved an average annual financial turnover (audited) of Rs. <b>2445.00 Lakhs or more</b> over last three Financial Years (FY) i.e 2019-20, 2020-21 & 2021-2022'	C.1) Bidders must have achieved an average annual financial turnover (audited) of Rs. <b>2625.00 Lakhs or more</b> over last three Financial Years (FY) i.e 2019-20, 2020-21 & 2021-2022'

**DD) Chapter-XI WEIGHTAGES & FACTORS PERTAINING TO SCHEDULE OF QUANTITIES at page no. Page no. 108 to 118 is being revised as below**

ST NO	Item Description	Unit	TOTAL QUANTITY	RATE	AMOUNT	Weightage (%)
A	<p>Construction and maintenance of labour colony having adequate no. of rest rooms along with toilets &amp; fencing etc. as per drawing attached and TCC including associated civil and structural works on built, own and operate basis. Proposal for construction of these hutment is to be got approved from BHEL before organizing material and execution.</p> <p>One-time payment towards construction/development of labour colony of 03 Sets as per drawing attached and as above shall be paid by BHEL as per following payment terms:</p> <p>i) On receipt of material for each set of labour colony at site - 50%</p> <p>ii) On completion of installation of labour colony for each set - 20%</p>	LS	1	1,50,00,000/-	1,50,00,000/-	Fixed Value

ST NO	Item Description	Unit	TOTAL QUANTITY	RATE	AMOUNT	Weightage (%)
	<p>iii) Handing over for accommodation of labour with all amenities for each set - 30% Land for labour colony shall be provided by BHEL free of cost as per availability outside project area within 5Km, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price.</p>					

ST NO	Item Description	Unit	TOTAL QUANTITY	RATE	AMOUNT	Weightage (%)
Continued....A	<p>The labour colony shall be handed over for accommodation with all amenities within Three (03) Months from date of start. Date of start shall be decided jointly by BHEL/NTPC and Contractor based on availability of Land, Fronts, etc.</p> <p>If the contractor fails to maintain the required progress of work which results in delay in the completion of the labour colony as per above completion period, BHEL shall have the right to impose Penalty at the rate of Rs. 75,000/- per weeks of delay or part thereof beyond Three (03) Months of completion period for a maximum delay of Three (03) Months.</p> <p>In case, contractor fails to complete the labour colony within Six (06) Months Period, BHEL reserves the right to execute the work at risk and cost of contractor.</p> <p>Risk &amp; Cost Amount= [(A-B) + (A x H/100)]</p> <p>Where,</p> <p>A= Value of Balance scope of Work new contract</p> <p>B= Value of Balance scope of Work of this contract being paid to the contractor.</p> <p>H = Overhead Factor to be taken as 5</p> <p>In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).</p>					

ST NO	Item Description	Unit	Qty	Weightage(%)
100	<b>EARTH WORK:</b> Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.			
101	Earth work in excavation <b>in all types of soil</b> including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.		*	
a	Depth from ground level but not exceeding 2 m	CUM	<b>126999</b>	<b>1.34318149</b>
b	Depth exceeding 2 m but not exceeding 4 m	CUM	<b>56855</b>	<b>0.75310503</b>
c	Depth exceeding 4 m but not exceeding 6 m	CUM	<b>120</b>	<b>0.00198383</b>
d	Depth exceeding 6 m but not exceeding 8 m	CUM	<b>100</b>	<b>0.00206392</b>
e	Depth exceeding 8 m but not exceeding 10 m	CUM	<b>100</b>	<b>0.00247465</b>
f	Depth exceeding 10 m but not exceeding 15 m	CUM	<b>100</b>	<b>0.00284431</b>
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	<b>20920</b>	<b>0.72606509</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
103	Earth work in excavation <b>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 including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.			
a	Depth from ground level but not exceeding 2 m	CUM	<b>1000</b>	<b>0.01571045</b>
b	Depth exceeding 2 m but not exceeding 4 m	CUM	<b>40093</b>	<b>0.75750159</b>
c	Depth exceeding 4 m but not exceeding 6 m	CUM	<b>41035</b>	<b>0.92698838</b>
d	Depth exceeding 6 m but not exceeding 8 m	CUM	<b>21383</b>	<b>0.57965520</b>
e	Depth exceeding 8 m but not exceeding 10 m	CUM	<b>2090</b>	<b>0.06524046</b>
f	Depth exceeding 10 m but not exceeding 15 m	CUM	<b>1000</b>	<b>0.03429601</b>
104	Earth work in excavation upto any depth below ground level <b>in hard rock requiring blasting (but excluding 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/statuatory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.			
a	Depth from ground level but not exceeding 2 m	CUM		
b	Depth exceeding 2 m but not exceeding 4 m	CUM	<b>585</b>	<b>0.02156490</b>
c	Depth exceeding 4 m but not exceeding 6 m	CUM	<b>500</b>	<b>0.02212812</b>
d	Depth exceeding 6 m but not exceeding 8 m	CUM	<b>115</b>	<b>0.00610500</b>
e	Depth exceeding 8 m but not exceeding 10 m	CUM	<b>100</b>	<b>0.00610962</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
f	Depth exceeding 10 m but not exceeding 15 m	CUM		
105	Earth work in excavation in <b>hard rock</b> requiring <b>controlled blasting</b> including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.			
a	Depth from ground level but not exceeding 2 m	CUM	<b>150</b>	<b>0.00485176</b>
b	Depth exceeding 2 m but not exceeding 4 m	CUM	<b>550</b>	<b>0.02134773</b>
c	Depth exceeding 4 m but not exceeding 6 m	CUM	<b>960</b>	<b>0.04475322</b>
d	Depth exceeding 6 m but not exceeding 8 m	CUM	<b>840</b>	<b>0.04700813</b>
e	Depth exceeding 8 m but not exceeding 10 m	CUM	<b>350</b>	<b>0.02253371</b>
f	Depth exceeding 10 m but not exceeding 15 m	CUM	<b>34402</b>	<b>2.43741767</b>
106	Earth work in excavation upto any depth below ground level in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.			
a	Depth from ground level but not exceeding 2 m	CUM		
b	Depth exceeding 2 m but not exceeding 4 m	CUM	<b>150</b>	<b>0.03360804</b>
c	Depth exceeding 4 m but not exceeding 6 m	CUM	<b>150</b>	<b>0.04032349</b>
d	Depth exceeding 6 m but not exceeding 8 m	CUM	<b>150</b>	<b>0.04839434</b>
e	Depth exceeding 8 m but not exceeding 10 m	CUM	<b>150</b>	<b>0.05564888</b>
f	Depth exceeding 10 m but not exceeding 15 m	CUM	<b>150</b>	<b>0.06120914</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
A106	Providing scaffolding pipes (6m Length) with clamps and barricading the excavated pit of required height as per safety norms. The scaffolding pipes with clamps will be under control of BHEL and can be used anywhere by BHEL during entire duration of contract period.	Nos	1500	0.01555643
107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers <b>not exceeding 250 mm thickness</b> using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least <b>90% maximum dry density</b> as per IS-2720 (Part-VII)	CUM	194546	1.89776785
b	Each layer compacted so as to achieve at least <b>95% maximum dry density</b> as per IS-2720 (Part-VII)	CUM	2000	0.02176873
c	Each layer compacted so as to achieve at least <b>98% maximum dry density</b> as per IS-2720 (Part-VII)	CUM	2000	0.02320628
108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with <b>selected materials directly from excavation</b> within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least <b>90% maximum dry density</b> as per IS-2720 (Part-VII)	CUM	395	0.00182518
b	Each layer compacted so as to achieve at least <b>95% maximum dry density</b> as per IS-2720 (Part-VII)	CUM	100	0.00050315
109	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM		

ST NO	Item Description	Unit	Qty	Weightage(%)
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	75000	0.07701201
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	78000	0.08009249
110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:	CUM	100	0.00848159
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	30480	2.77297438
200	<b>CONCRETE WORK:</b> 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. <i>(Cement shall be provided by BHEL free of cost however, Fly Ash shall be collected with a nominal charge of Rs. 1 per MT from TSTPP Kaniha)</i>			
A201	Design Mix Concrete of grade M7.5 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as	CUM	6135.00	2.14878745

ST NO	Item Description	Unit	Qty	Weightage(%)
	mass <b>filling course</b> , lean concrete, levelling course, mud mat under and around foundations/floors, at any depth below finished floor level etc.  <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in bidder scope)</i>			
B201	Extra over item no. A201 for using Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash). <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>	CUM	6135.00	0.08252453
A202	Design Mix Concrete of grade M10 (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	301	0.10542543
B202	Extra over item no. A202 for using Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5  <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>	CUM	301	0.00404888

ST NO	Item Description	Unit	Qty	Weightage(%)
A203	<b>Design Mix Concrete of grade M15</b> (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	119	0.04167982
B203	Extra over item no. A203 for using Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) in place of Design Mix Concrete of grade M7.5 <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>	CUM	119	0.00160072
A204	<b>Design Mix Concrete of grade M20</b> (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) under floors, paving, plinth protection, pipe encasing etc complete at any depth below finished floor level. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	21	0.00689165
B204	Extra over item no. A204 for using Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) in place of Design Mix Concrete of grade M20 <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>	CUM	21	0.00028248

ST NO	Item Description	Unit	Qty	Weightage(%)
A204(A)	<p>Concrete of <b>grade M25</b> (1 part cement, 1 part sand, 2 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete. (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash)</p> <p><b>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</b></p>	CUM	267	<b>0.09351691</b>
B204(A)	<p>Extra over item no. A204(A) Concrete of grade M25 (1 part cement, 1 part sand, 2 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.</p> <p><b>(Cement shall be issued by BHEL free of cost as per TCC.</b></p>	CUM	267	<b>0.00359153</b>
A205	<p>Providing and laying Design Mix cement concrete conforming to IS:456 &amp; IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size <b>in foundations/substructure, grade slab, paving, drains, under floors, pipe encasement etc</b> at all level below <b>finished floor level, any shape, position or thickness etc</b> complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification &amp; drawing for the following.</p> <p><b>(Cement shall be issued by BHEL free of cost as per TCC)</b></p>			
a	M 25 Grade	CUM	28655	<b>11.22809173</b>
b	M 30 Grade	CUM	360	<b>0.14224426</b>
c	M 35 Grade	CUM	3030	<b>1.20717860</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
B205	Extra over item No. A205 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	M 25 Grade	CUM	28655	0.05002032
b	M 30 Grade	CUM	360	0.00070235
c	M 35 Grade	CUM	3030	0.00591144
A206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size <b>in superstructure at all level above finished floor level</b> , any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to IS:9103 (latest) with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M 25 Grade	CUM	6338	2.48281266
b	M 30 Grade	CUM	52	0.02054105
c	M 35 Grade	CUM	75	0.02987296

ST NO	Item Description	Unit	Qty	Weightage(%)
B206	Extra over item No. A206 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	M 25 Grade	CUM	6338	<b>0.01106365</b>
b	M 30 Grade	CUM	52	<b>0.00010145</b>
c	M 35 Grade	CUM	75	<b>0.00014632</b>
207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in <b>machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills</b> at all elevations below/above finished floor level <b>except TG deck and top decks supported over/without vibration isolation system</b> but including TG foundation Columns <del>with addition of suitable plasticizer conforming to IS 9103(latest)</del> with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing			
a	M 30 Grade	CUM	10	<b>0.00421615</b>
b	M 35 Grade	CUM	260	<b>0.11047424</b>
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)			

ST NO	Item Description	Unit	Qty	Weightage(%)
a	M 20	CUM	49	0.01782140
A212	<b>Scree concrete</b> conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) on the roof at all level or thickness, drains etc complete as per following. <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
a	01:02:04	CUM	111	0.03887782
b	01:01:02	CUM	75	0.02626880
B212	<b>Extra over item no. A212 for using concrete with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size</b> in place of Design Mix Concrete of equivalent grade. <i>(Cement shall be issued by BHEL free of cost as per TCC.</i>			
a	01:02:04	CUM	111	0.00149311
b	01:01:02	CUM	75	0.00100886

ST NO	Item Description	Unit	Qty	Weightage(%)
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 of Boundary Wall</b> and other works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc. at all levels in all kinds of work <b>including formwork/moulds</b> , 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>(Cement shall be issued by BHEL free of cost as per TCC)</b>			
a	M25	CUM	25	0.01703249
b	M30	CUM	349	0.23892030
A213	Extra over item No. 213 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <b>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</b>			
a	M25	CUM	25	0.00004364
b	M30	CUM	349	0.00068089

ST NO	Item Description	Unit	Qty	Weightage(%)
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 <b>Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest with high performance PCE-based water reducing admixture of Type-G as per ASTMC-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30% cum water proofing cement additives to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required. <b>(Cement shall be issued by BHEL free of cost as per TCC)</b></b>			
a	M25	CUM		
b	M30	CUM	1	0.00055141
c	M35	CUM	29293	16.50726516
A214	Extra over item No. 214 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete. <b>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</b>			
b	M30	CUM	1	0.00000195
c	M35	CUM	29293	0.05714979

ST NO	Item Description	Unit	Qty	Weightage(%)
215	Dismantling concrete work for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	Plain cement concrete of all grades	CUM	<b>421</b>	<b>0.04508827</b>
b	Reinforced cement concrete of all grades	CUM	<b>721</b>	<b>0.11379058</b>
WR 215A	Demolishing brick work manually/ by mechanical means stacking of serviceable material to a lead of 500 m and disposal of unserviceable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	In cement morter	CUM	<b>100</b>	<b>0.00872033</b>
WR 215B	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking within 50 metres lead as per direction of Engineer-in-charge.  <b>(Dismantling structural materials shall be deposited to BHEL, as per direction of Engineering in charge)</b>	Kg	<b>200000</b>	<b>0.03285846</b>
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	<b>69</b>	<b>0.00046053</b>
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	<b>47</b>	<b>0.00002413</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
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	114	0.00326593
219	Providing and applying <b>curing compound (water based)</b> of approved make where ever required as per manufacturer's specification.	SQM	226	0.00280796
A220	<b>Design Mix Concrete of grade M10</b> (with maximum replacement of river sand up to 50% quantity by mass with coarse bottom ash) as <b>Plum cement concrete with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.</b> <i>(Cement shall be issued by BHEL free of cost as per TCC. Bottom Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>	CUM	380	0.12552546
B220	Extra over item no. A220 for using Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm in place of Design Mix Concrete of equivalent grade <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>	CUM	380	0.00511154
A 221	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in <b>sloped surface of canal lining or channel cast in alternate panels</b> with provision of expansion gap/construction joints at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete, compaction with special equipments, etc all complete as per specification & drawing for the following. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
b	M25 Grade	CUM	117	0.05206813

ST NO	Item Description	Unit	Qty	Weightage(%)
B 221	Extra over item No. A221 for using OPC-43 grade & Fly ash as maximum 25% weight of total cementitious material shall be replaced by Fly ash conforming to IS-3812, Part-1, 2013 (or latest) in the design mix cement concrete.  <i>(Cement shall be issued by BHEL free of cost as per TCC. Fly Ash shall be obtained from TSTPP Kaniha at nominal charge of Rs. 1 per MT and its transportation from TSTPP Kaniha to NTPC Talcher project site shall be in the scope of bidder)</i>			
b	M25 Grade	CUM	117	0.00157382
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finsih & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	120	0.03021335
300	<b>FORMWORK:</b> 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.			
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, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	119249	6.28158563

ST NO	Item Description	Unit	Qty	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 floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing for all heights as per specification, drawing and instruction of engineer in charge.	SQM	20798	1.44152613
A302	<b>One time payment shall be made for purchase and mobilization of ply wood of approx. size 2.4m x 1.2m x 12mm thick with required battens as per specification for execution of Item No. 301, A301 &amp; A302. The purchased materials shall be the property of contractor however, it shall be handed over to BHEL store for making payment. Issue of these materials shall be as per instruction of BHEL Site-in-Charge.</b> <b>Contractor shall arrange formwork material as per requirement for the complete scope of work however, payment in this BOQ shall be restricted to this quantity only.</b>	Nos.	5403	0.98976214
B302	One time payment shall be made for mobilization of complete set (Minimum 03 Sets) of shuttering and staging materials required for casting of Hopper (Track Hopper) and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.	LS	1	0.47208976
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	66	0.00162649
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	123	0.00511514
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	181	0.01347453
d	Pockets of depths more than 600mm and upto 1000	Each	238	0.02783542

ST NO	Item Description	Unit	Qty	Weightage(%)
	mm depth			
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	126	0.02128304
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	119	0.02654019
400	<b>REINFORCEMENT WORK :</b> 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.			
401	<p>Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to &amp; from stores etc. all complete as per specifications &amp; drawings.</p> <p><b>Payment Terms:</b></p> <p>a) On receipt of material at site - 60%</p> <p>b) Execution as per item description - 40%</p>	MT		
402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of <b>grade Fe-500D or 500EQR</b> confirming 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.	MT	114	0.92447923
403	<p>Transportation, straightening, cutting, bending, placing in position at all level, binding in position of <b>steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786</b> including cost of binding wire, labour, scaffolding, transportation to &amp; from stores etc. complete all as per specifications, drawings and as directed by Engineer.</p> <p><i>(TMT steel shall be issued by BHEL free of cost)</i></p>	MT	8584	8.86187792

ST NO	Item Description	Unit	Qty	Weightage(%)
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with <b>Epoxy based suitable bonding compound</b> of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.			
a	12mm Reinforcement bar	Nos.	<b>114</b>	<b>0.00475256</b>
b	16mm Reinforcement bar	Nos.	<b>114</b>	<b>0.00746832</b>
c	20mm Reinforcement bar	Nos.	<b>114</b>	<b>0.01046501</b>
406	Supply and fixing <b>reinforcement bar couplers</b> (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of <b>TMT steel of grade Fe-500D or 500EQR confirming to IS:1786</b> including, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <i>(Agency has to supply reinforcement bar couplers).</i>			
a	12mm dia	Nos.	<b>40</b>	<b>0.00028340</b>
b	16mm dia	Nos.	<b>40</b>	<b>0.00039430</b>
c	20mm dia	Nos.	<b>40</b>	<b>0.00049698</b>
d	25mm dia	Nos.	<b>40</b>	<b>0.00069413</b>
e	28mm dia	Nos.	<b>40</b>	<b>0.00106790</b>
f	32mm dia	Nos.	<b>38</b>	<b>0.00117058</b>
g	36mm dia	Nos.	<b>21</b>	<b>0.00083881</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
h	40mm dia	Nos.	15	0.00073778
500	<b>Roof Treatment works:</b> 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 issued by BHEL free of cost as per TCC)			
501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	2730	0.02747172
506	Providing and applying <b>PU based water proofing treatment</b> 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 <b>to form an elastomeric membrane</b> 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	3459	0.37720049
A507	Providing and laying wearing course consisting of <b>20 mm thick plain cement mortar 1:4 (1 cement : 4 sand)</b> cast in panels of maximum size <b>1.2mx1.2m</b> and <b>reinforced with 0.56 mm dia. galvanised chicken wire mesh</b> and sealing of joints (in grooves of 6mm X 6mm) using <b>silicon /elastomeric</b> compound etc all complete.	SQM	3459	0.27668473

ST NO	Item Description	Unit	Qty	Weightage(%)
A510	Providing and laying <b>cement concrete chequered roof / floor tiles of 22 mm thickness and size min. 200x200 mm</b> conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment <b>in pathway or entire area</b> 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 <b>(silicon/elastomeric) joint sealant etc all complete.</b> (Water proofing paid elsewhere) <b>(including cost of cement for tiles making).</b>	SQM	3459	0.19747973
511	Providing and applying <b>two coats of bitumen grade 85/25</b> as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in <b>foundation, wall, column etc on concrete surfaces exposed to soil / ash</b> including surface preparation etc. all complete.	SQM	62652	0.97142452
513	Providing and mixing <b>water proofing compound</b> conforming to IS:2645 in concrete or cement mortar all complete.	KG	204	0.00238799
600	<b>JOINTS AND FILLERS:</b> Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.			
601	Supplying & installation of <b>bitumen impregnated fibre board</b> confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	217	0.01296821
b	20 mm wide joints.	SQM	217	0.01918492
c	25 mm wide joints	SQM	217	0.02330712
d	50 mm wide joints	SQM	126	0.02603129
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	64	0.00368672
b	20 mm wide joints.	SQM	64	0.00587509
c	25 mm wide joints	SQM	64	0.00689370

ST NO	Item Description	Unit	Qty	Weightage(%)
d	50 mm wide joints	SQM	64	<b>0.01306452</b>
603	Providing and applying <b>polysulphide based sealant</b> conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			
a	25mmX25mm	RM	25	<b>0.00106533</b>
b	50mmX25mm	RM	25	<b>0.00197151</b>
604	Supplying and filling in position <b>hot applied bitumin sealing compound (Grade A)</b> confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	24	<b>0.00011336</b>
b	12mm X 25mm	RM	23	<b>0.00009919</b>
c	20mmX25mm	RM	11	<b>0.00005760</b>
605	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	5	<b>0.00002156</b>
b	20 mm wide joints.	SQM	5	<b>0.00003286</b>
c	25 mm wide joints	SQM	5	<b>0.00004159</b>
d	50 mm wide joints	SQM	5	<b>0.00007958</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
606	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanised as needed.	RM	181	0.00256481
607	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer's recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc all complete.	SQM	41	0.00071991
608	Supplying and filling in position hot applied bitumin sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	11	0.00005196
b	12mm X 25mm	RM	16	0.00006900
c	20mmX25mm	RM	11	0.00005760
610	Providing and fixing <b>PVC water stops in joints</b> conforming to IS 12200 & IS 15058 all complete for the following: <b>(Bulb or Kicker type)</b>			
d	<b>230 mm wide and 6 mm thick</b>	RM	6088	0.12752695
611	Providing and fixing copper water stops in joints of deep underground structure all complete for the following:			
b	600 mm wide and 22 guage (0.7 mm) thick	RM	5185	1.37521418
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	26	0.00057667

ST NO	Item Description	Unit	Qty	Weightage(%)
700	<b>MS EMBEDMENTS:</b> Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
701	Supply, fabricating and fixing of <b>mild steel embedments</b> , 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. <b>Payment Terms:</b> a) <i>On receipt of material site - 60%</i> b) <i>Execution as per item description - 40%</i>	MT	25	0.26235680
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. <b>Payment Terms:</b> a) <i>On receipt of material at site - 60%</i> b) <i>Execution as per item description - 40%</i>	MT	25	0.30691852
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.			
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	129	0.28712171
B	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	122	0.29206115

ST NO	Item Description	Unit	Qty	Weightage(%)
704	<p>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.</p> <p><b>Payment Terms:</b></p> <p>a) On receipt of material at site - 60%</p> <p>b) Execution as per item description - 40%</p>			
a	MS pipes of all diameters	kg	84	0.00068140
b	PVC pipes / conduits of all diameters	kg	76	0.00293426
c	UPVC pipes / conduits of all diameters	kg	66	0.00290058
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fasteners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
ii	10mm Dia	Nos	10	0.00006058
iii	12mm Dia	Nos	10	0.00006880
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	65	0.00111462
ii	HST M10	Nos	30	0.00074856
iii	HST M12	Nos	30	0.00120447
iv	HST M16	Nos	5	0.00035888
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	49	0.00175094
ii	HAS-E5.8 M10	Nos	53	0.00221497
iii	HAS-E5.8 M12	Nos	9	0.00046577
iv	HAS-E5.8 M16	Nos	9	0.00077813
v	HAS-E5.8 M20	Nos	9	0.00129380

ST NO	Item Description	Unit	Qty	Weightage(%)
vi	HAS-E5.8 M24	Nos	1	0.00019335
707	<p>Providing, laying and <b>fixing rails and guide rails in concrete for transformer</b>, rail track including cutting of rails, joining of rails, anchoring lugs etc. all complete.</p> <p><i>Payment Terms:</i></p> <p>a) On receipt of material at site - 60% b) Execution as per item description - 40%</p>	MT	54	0.52457745
707(a )	<p>Providing, laying and fixing rails(60kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.</p> <p><i>Payment Terms:</i></p> <p>a) On receipt of material at site - 60% b) Execution as per item description - 40%</p>	MT	55	0.53429184
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge.			
803	<p>Providing &amp; <b>grouting of</b> 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 <b>1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips )</b> 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).</p> <p><b>(Cement shall be issued by BHEL free of cost as per TCC)</b></p>	CUM	150	0.31554899

ST NO	Item Description	Unit	Qty	Weightage(%)
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with <b>Conbextra GP-2</b> or equivalent as per specification, drawing and direction of engineer-in-charge.(Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	30	<b>0.14287883</b>
807	Providing on the outer surface of walls, frames, rafts and roof slabs coming in contact with earth, <b>Polymer modified cementitious coating in two layers</b> as specified and as per manufacturer's specifications shall be provided directly on the concrete surface : 50 mm thick P. C. C. (1 : 2 : 4 with 10 mm nominal size stone aggregates) shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers ( slurry mix application ) as per manufacturer's specification. 50 mm thick P. C. C. ( 1 : 2 : 4 ) with 10 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft. <b>(Cement will be provide by BHEL as per TCC)</b>	SQM	26869	<b>0.74492481</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
808	<p>Providing <b>Chemical Injection Grouting</b> with Minimum, 12 mm dia (NB) threaded nozzle of suitable length over the surface and along the construction joint line in a grid pattern at a spacing not exceeding 1.5m c/c before concreting operation. After the nozzles are fully set, neat cement slurry admixed with water soluble non-shrink polymer / monomer based chemical shall be injected through the net - work of nozzles with low pressure grout pumps at a pressure of about 2.0 Kg/Sqcm. Cement slurry shall be prepared by mixing cement with non-shrink polymer/monomer @ 500 gm/50 kg bag of cement and water, ensuring that Water: Cement ratio does not exceed 2 (by weight). Wetter the structure, lesser should be the water cement ratio. The property of the polymer/monomer should be such that when it is mixed with water @ 0.5% by weight of water, the viscosity of the resultant solution (water and polymer/monomer) should not be more than 1.2 centipoises. Plasticizing agent shall be added wherever required. The grouting shall be started at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting operation, the nozzles shall be sealed properly to the satisfaction of the Engineer</p>	SQM	17532	<b>1.11794448</b>
900	<b>DOORS &amp; WINDOWS:</b> 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.			

ST NO	Item Description	Unit	Qty	Weightage(%)
904	<p>Providing and fixing <b>single or double steel door shutters with 45mm thk flush design shutter</b> comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.</p> <p><b>Payment Terms:</b></p> <p><b>a) On receipt of material at site - 60%</b></p> <p><b>b) Execution as per item description - 40%</b></p>	SQM	35	<b>0.02755798</b>
906	<p>Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners, SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom &amp; sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred &amp; jointed mechanically wherever required. (Glazing shall be paid separately)</p>	KG	400	<b>0.01786679</b>
908	<p>Providing and fixing <b>steel windows/ventilator with steel sections</b> as per IS:1038, IS:1361 &amp; IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting, glazing etc. all complete. (Glazing shall be paid separately)</p>			
a	Openable type	SQM	<b>2104</b>	<b>0.57446192</b>
b	Fixed type	SQM	<b>708</b>	<b>0.12845972</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately). Weight of aluminium section only shall be measure.	Kg	150	0.00845592

ST NO	Item Description	Unit	Qty	Weightage(%)
913	<p>Providing and fixing in position <b>rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips</b> 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 &amp; 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).</p> <p><b>Payment Terms:</b></p> <p>a) On receipt of material at site - 60%</p> <p>b) Execution as per item description - 40%</p>			
b	Mechanically Operated	SQM	96	<b>0.05678927</b>
c	Electrically operated	SQM	5	<b>0.00329149</b>
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.			
h	6 mm thick clear toughened safety glass	SQM	2253	<b>0.54273318</b>
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	137	<b>0.05544012</b>
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	20	<b>0.00341112</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1000	<b>BRICKWORK:</b> Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.			
1001	Providing <b>brick work in cement mortar 1:6</b> (1 part cement 6 parts coarse sand) in walls, chambers etc. in <b>thickness varying from 230mm to 460mm at all depths</b> , places and positions <b>below plinth</b> including raking out joints, curing, scaffolding etc. complete excluding plastering and painting. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
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	835	0.47405665
1002	Providing <b>brick work in cement mortar 1:6</b> (1 cement 6 coarse sand) in walls, chambers etc. in <b>thickness 230mm at all heights</b> , places and position <b>above plinth</b> including raking out joints, curing, scaffolding etc complete excluding plastering and painting. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
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	1541	1.09766927
1003	Providing brick work in cement mortar <b>1:4 (1 cement 4 coarse sand)</b> in partition walls, chambers etc. in thickness <b>115mm at all heights</b> , places and position <b>above or below plinth/graded level</b> including providing two nos. <b>6 mm diameter MS bars at every third layer</b> , raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
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)	SQM	147	0.01286039

ST NO	Item Description	Unit	Qty	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	117	0.02403976
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	117	0.00252291
1100	<b>DAMP PROOF COURSE:</b> Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1101	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @1.7Kg/sqm shall be applied one before & one after the DPC.			
b	50mm thick	SQM	2674	0.08841266
1200	<b>PLASTERING:</b> 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. <i>(Cement shall be issued by BHEL free of cost as per TCC)</i>			
1201	Providing <b>18mm thick plaster in two layers</b> outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete	SQM	7092	0.20900073
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	SQM	10696	0.24382124

ST NO	Item Description	Unit	Qty	Weightage(%)
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	2668	0.05561335
1300	<b>FINISHES TO CONCRETE / PLASTERED SURFACES:</b> 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.			
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	5	0.00001812
1304	Two or more coats of <b>acrylic distemper</b> of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	13364	0.13214780
1305	Providing and applying two or more coats of <b>acrylic emulsion paint</b> 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	2400	0.03358956
1316	Providing and applying <b>2 mm thick plaster of paris punning on walls</b> including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	5	0.00005411
1317	Providing and applying <b>2 mm thick white cement punning on walls</b> including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	2025	0.02079324
A1319	Providing and applying two or more coats of <b>Premium Acrylic Smooth Exterior paint with silicone additives</b> of approved brand and manufacture and required shade <b>over one coat of primer of waterproof cement paint</b> after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc.	SQM	7092	0.08971739

ST NO	Item Description	Unit	Qty	Weightage(%)
	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 repellent and extremely durable with color fastness as per specification.			
1400	<b>FLOORING AND SKIRTING:</b> Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1401	Providing and laying <b>50 mm thick heavy duty cement concrete in flooring without metallic hardener</b> 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 well graded) (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips): <b>(Cement shall be issued by BHEL free of cost as per TCC)</b>	SQM	<b>60124</b>	<b>3.48196293</b>
1406	Providing and laying polished Kota stone 18mm to 20mm thk in flooring. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete. <b>(Cement shall be issued by BHEL free of cost as per TCC)</b>	SQM	<b>355</b>	<b>0.05806859</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1407	Providing and laying polished Kota stone 14mm to 16mm thk in flooring. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	<b>0.00780388</b>
1408	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	50	<b>0.00903094</b>
1411	Marble stone Flooring laid in 50mm overall thickness with 14 -16mm thick marble slabs (grade -1) with minium 35mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level.The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	15	<b>0.00432807</b>
1412	Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30 mm thick of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	15	<b>0.00489642</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1413	Providing and laying 14 to 16mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	30	0.00922912
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	200	0.02131692
c	7mm thick tiles In skirting and dado upto specific height	SQM	120	0.01367733
1417	Providing and laying <b>vitrified ceramic tiles of matt finish of size 600x600mm</b> 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			
b	<b>10mm thick tiles In flooring</b>	SQM	125	0.01829035
d	<b>10mm thick tiles In skirting and dado upto specific height</b>	SQM	225	0.03458609
1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes			
b	600X600 mm	SQM	450	0.06413560

ST NO	Item Description	Unit	Qty	Weightage(%)
1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including 20mm underbed of cement mortar 1:3 with neat cement slurry @3.3kg/sqm etc. all complete.			
b	600X600 mm	SQM	353	<b>0.03711691</b>
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
b	38mm thick	SQM	264	<b>0.15248377</b>
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	150	<b>0.00763959</b>
1600	<b>FALSE CEILING:</b> 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.			
1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	394	<b>0.11271313</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1700	<b>RAIN WATER DOWN TAKE PIPES:</b> 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.			
1704	Providing and fixing galvanised MS down take pipes of <b>150 mm dia- Medium quality</b> as per IS:1239(part-I) all complete.	RM	<b>454</b>	<b>0.08311978</b>
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
a	100 mm Dia	RM	<b>35</b>	<b>0.00442049</b>
b	150 mm Dia	RM	<b>135</b>	<b>0.02740549</b>
c	200 mm Dia	RM	<b>35</b>	<b>0.01097575</b>
1708	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.			
a	100 mm Dia	RM	<b>45</b>	<b>0.00771198</b>
b	150 mm Dia	RM	<b>45</b>	<b>0.01025800</b>
c	200 mm Dia	RM	<b>45</b>	<b>0.01616790</b>
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			
a	110 mm Dia	RM	<b>90</b>	<b>0.00541548</b>
b	160 mm Dia	RM	<b>90</b>	<b>0.00832654</b>
c	200 mm Dia	RM	<b>90</b>	<b>0.01196767</b>
1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.			
a	200 mm Dia	RM		
b	250 mm Dia	RM		
C	273mm OD and 4mm thick	RM	<b>3913</b>	<b>1.42316606</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1800	<b>MISCELLANEOUS:</b> 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.			
A1801	<b>Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 275 mm compacted thickness</b> including breaking of stone boulders to required sizes, filling the interstices with well graded selected sand and compacting to 90 % 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	8294	<b>1.57470104</b>
B1801	<b>Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm compacted thickness</b> including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 90 % 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	474	<b>0.08712214</b>
1807	<b>Anti termite chemical treatment</b> of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	1767	<b>0.02903045</b>
1808	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	120	<b>0.13372981</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
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).	each	60	<b>0.06740091</b>
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.	NO	27	<b>0.02354904</b>
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.	EACH	75	<b>0.20093973</b>
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	220	<b>0.00248492</b>
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.			
a)	Steel scrap / metal scrap	MT	25	<b>0.00156078</b>
b)	Debris & Other waste materials.	CUM	50	<b>0.00058529</b>
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	200	<b>0.00010268</b>
1833	Supplying, stacking and laying 150 mm thick sand filter of approved quality behind retaining wall 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	1050	<b>0.24711613</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
1834	Supplying, stacking and laying 150 mm thick gravel filter of approved quality behind retaining wall 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	1050	0.29897601
2000	<b>FENCING AND GATES:</b> 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.			
2001	Supplying and erecting in position <b>2.4 m</b> high <b>PVC coated gavanised chain linked fencing of minimum 8 gauge</b> (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than <b>12 gauge</b> . GI barbed wire fencing of height of 600 mm confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. <b>(Structural post shall be paid separately under item 2007)</b>	RM	663	0.16318444
2007	Supply and fixing of <b>hot dip galvanised mild steel posts for fencing</b> . Rate of zinc coating shall not be less than 710 g/m <sup>2</sup> on steel posts.	MT	30	0.34586400

ST NO	Item Description	Unit	Qty	Weightage(%)
2009	<p>Supply, fabrication and installing in position and testing <b>galvanised MS Gates</b> out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh &amp; sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.</p> <p><b>Payment Terms:</b></p> <p>a) On receipt of material at site - 60%</p> <p>b) Execution as per item description - 40%</p>	MT	4	<b>0.05060202</b>
2100	<b>WATER SUPPLY:</b> Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	74	<b>0.00600283</b>
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	58	<b>0.00290037</b>
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:			
a	25mm nominal bore.	NOS	110	<b>0.00709332</b>
b	50mm nominal bore.	NOS	80	<b>0.01081043</b>
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	345	<b>0.01650829</b>
b	20 mm nominal bore.	RM	550	<b>0.02880249</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
c	25 mm nominal bore.	RM	<b>505</b>	<b>0.02960906</b>
d	50 mm nominal bore.	RM	<b>270</b>	<b>0.02278939</b>
2105	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:			
a	15 mm nominal bore.	RM	<b>345</b>	<b>0.01293032</b>
b	20 mm nominal bore.	RM	<b>550</b>	<b>0.02309847</b>
c	25 mm nominal bore.	RM	<b>505</b>	<b>0.02437173</b>
d	50 mm nominal bore.	RM	<b>270</b>	<b>0.01998924</b>
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	NOS	<b>45</b>	<b>0.00560955</b>
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	NOS	<b>45</b>	<b>0.00358568</b>
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	<b>45</b>	<b>0.00438968</b>
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	NOS	<b>45</b>	<b>0.00376589</b>
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	<b>45</b>	<b>0.00311899</b>
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	<b>45</b>	<b>0.00294802</b>
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	NOS	<b>45</b>	<b>0.00212553</b>
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	NOS	<b>11</b>	<b>0.00041792</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
a	500 litres capacity	NOS	5	<b>0.00210037</b>
b	1000 litres capacity	NOS	5	<b>0.00420075</b>
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	20	<b>0.02075628</b>
b	Colored	EACH	10	<b>0.01100039</b>
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 40mm CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	4	<b>0.00229681</b>
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, necessary C.P connections etc all complete.			

ST NO	Item Description	Unit	Qty	Weightage(%)
a	Floor mounted	EACH	22	<b>0.01455034</b>
b	Wall mounted	EACH	22	<b>0.02002846</b>
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, necessary C.P. connections etc all complete.	EACH	13	<b>0.00820681</b>
2206	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	45	<b>0.06455146</b>
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	35	<b>0.00126146</b>
b	110mm dia pipes	RM	35	<b>0.00168913</b>
c	160mm dia pipes	RM	35	<b>0.00261995</b>
d	200mm dia pipes	RM	35	<b>0.00322732</b>
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	20	<b>0.00164087</b>
b	300mm dia	RM	20	<b>0.00282993</b>
c	450mm dia	RM	20	<b>0.00472751</b>
d	600mm dia	RM	20	<b>0.00647312</b>
e	900mm dia	RM	15	<b>0.00854371</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
2300	<b>STRUCTURAL WORKS:</b> 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.			
2400	<b>ROAD WORKS:</b> Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge. (Cement shall be issued by BHEL free of cost as per TCC for fixing of tiles, manufacturing of block/tiles and concreeing work)			
2401	<b>Preparation of sub grade</b> by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	6105	0.04137393
2402	Supplying and <b>filling with selected good earth of approved quality</b> in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	2920	0.22757356
2403	Providing, <b>stacking &amp; laying granular morrum</b> for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	60	0.00906893

ST NO	Item Description	Unit	Qty	Weightage(%)
2404	Providing & laying <b>water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm</b> down size (IRC 19 - grading -1), stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	30	<b>0.00657991</b>
2405	Providing & laying <b>water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm</b> size(IRC 19 - grading -1), stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	1913	<b>0.51956253</b>
A2405	Providing & laying <b>Granular base/sub-base course in layers of required thickness with stone aggregate</b> size as per IRC 19 - grading-1 or 2, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	10	<b>0.00271596</b>
2406	Providing & Laying <b>water bound macadam base course with stone aggregate 50mm to 20mm size stone</b> (IRC 19 -grading -1) screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of blinding material moorum etc all complete.	CUM	20	<b>0.00543191</b>
2410	Providing, mixing & laying 25 mm compacted thick premix carpet in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all complete.	SQM		

ST NO	Item Description	Unit	Qty	Weightage(%)
A2410	A 40mm bitumen mastic wearing course over concrete pavement shall be provided with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen fine grained hard stone chipping of approved size at the rate of 0.005 precoated cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification). This 40mm bitumen mastic wearing course shall be laid after completion of construction activities i.e at the time of handover.	SQM	20000	0.52984260
2413	Supplying and laying <b>400mmx150mmx350mm deep precast concrete kerb stone of grade M-20</b> with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	3000	0.10698508
A2414	Providing & laying <b>edge protection</b> on edges with M-25 GRADE PCC BLOCKS etc all complete..	RM	100	0.00094468
B2414	Supply and laying <b>200 mm dia R.C.C NP-3 type Hume pipe</b> in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	10	0.00082043
2416	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadam course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	50	0.00056270
2418	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	1122	0.37316506

ST NO	Item Description	Unit	Qty	Weightage(%)
2419	Providing and laying cement concrete of <b>grade M35 using 20 mm nominal size stone aggregate</b> with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)	CUM	1594	<b>0.63489992</b>
2420	Supplying and filling sand for preparation of read sub-base/ sub-grade in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/ compaction by manual/ mechanical means, dressing, royalty (if any) etc all complete.	CUM	10	<b>0.00089231</b>
2421	Providing & laying dry lean cement concrete of <b>grade M15</b> with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	1080	<b>0.39279820</b>
2422	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of <b>mild steel reinforcements</b> including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	5	<b>0.04054733</b>
2423	Providing & installation of <b>bitumen impregnated fibre board</b> of specified thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.			
a	12 mm wide joints.	SQM	1	<b>0.00005976</b>
b	20 mm wide joints.	SQM	1	<b>0.00008841</b>
c	25 mm wide joints	SQM	1	<b>0.00010741</b>
c	25 mm wide joints	SQM	1	<b>0.00020660</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
2424	Providing and filling in position <b>hot applied bitumen sealing compound (Grade A)</b> of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.			
a	10mm X 40mm	RM	10	0.00004723
b	12mm X 25mm	RM	20	0.00008625
c	20mmX25mm	RM	20	0.00010474
2425	Providing and laying <b>debonding strip/tape</b> of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM		
a	12 mm wide joints.	RM	10	0.00004313
b	20 mm wide joints.	RM	20	0.00013143
c	25 mm wide joints	RM	20	0.00016635
d	50 mm wide joints	RM	10	0.00015916
2426	Providing & laying <b>75 mm thick precast interlocking concrete pavers</b> of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	3800	0.30435145
2427	Providing and laying <b>50mm thick sand layer</b> below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	3800	0.01728560
A2427	Providing and laying <b>100mm thick sand layer</b> below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	100	0.00090977
2428	Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.	SQM	3750	0.00770120

ST NO	Item Description	Unit	Qty	Weightage(%)
2429	Providing and laying <b>Inverted Choke with 25 mm course of screenings (Grading-B)</b> over prepared subgrade including compaction etc all complete as per specification, drawing and as directed by Engineer.	CUM	5	<b>0.00256707</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.			
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m 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	52600	<b>0.11882439</b>
2603	Earth work in excavation upto any depth below ground level in all types of soil including moorum, ash 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	249360	<b>2.25323576</b>

ST NO	Item Description	Unit	Qty	Weightage(%)
2604	Earth work in excavation upto any depth below ground level in soft rock (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	2100	0.03385448
2605	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) 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/statuatory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	588	0.01805285
A2608	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at 98% maximum dry density as per IS-2720 (Part-VIII) with sandy gravel or crushed rock as blanket material conforming to RDSO guidelines, specifications 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-in-charge.	CUM	45000	3.53410715

ST NO	Item Description	Unit	Qty	Weightage(%)
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock from compulsorily excavated earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, 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 for the following.	CUM	117149	1.27509230
2610	Extra over ST No. 2601 to 2609 for carriage of unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.			
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	134320	0.13792337
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	16368	0.01680710
A2612	Providing and laying <b>300mm thick stone pitching</b> including caulking with 1 cement: 4 sand mortar 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	755	0.19768982
3101	<b>GUNITING/SHOTCRETING</b>			
	Shotcreting (Gunniting) specified concrete surfaces as per the following specifications including all materials. Labour, tools and plants, scaffolding etc all complete as per the directions of Engineer in charge, :			
	i. Fabricating and fixing in position 6mm M S bars at 750mm c/c including connecting to the lugs for fastening			

ST NO	Item Description	Unit	Qty	Weightage(%)
	ii. Fixing wire fabric confirming to IS:1566 as reinforcement with 3mm diameter spaced at 50mm c/c both ways electrically cross welded including securely tying to the 6mm MS bars by maintaining 100mm overlap for adjacent sheets			
	iii. Fine aggregate shall consist of natural sand or crushed stone from a known source and shall be strong, hard, coarse, sharp, chemically inert, clean and free from any coating. It shall be free from clay, coal or coal residue, organic or any other impurities that may impair the strength or durability of the concrete and shall conform to IS: 383. The fineness modulus shall be preferably between 2.5 and 3.3. Any other value can be used, with prior approval of the Engineer. Fine aggregate (Sand) shall be well graded and particles shall range in size within limits. The Engineer may approve the use of any other grading as per requirement or as per IS: 9012.			
	iv. The surface after the placement of reinforcement and / or welded mesh and not more than six hours prior to the application of concrete, shall be thoroughly cleaned of all loose materials and dirt. The Contractor shall properly prepare the surfaces, reinforcement and / or welded mesh to receive the shotcrete. Cleaned surfaces shall be wetted not more than hour prior to shotcreting.			
	v. The mix as placed on surface shall be one part cement to three parts approved sand by mass. Cement and sand shall be dry mixed; no water shall be added after mixing and before using in the gun. The quantity of water when added shall be only that which is sufficient to hydrate the cement. For average atmospheric conditions, the water cement ratio for shotcrete in place shall be between 0.35 and 0.5 by mass. Suitable admixture shall be used wherever required.			
	vi. A uniform pressure of not less than 25 Kgf / cm <sup>2</sup> at the nozzle shall be maintained. Necessary adjustments shall be made to ensure this pressure, taking into account the length of hose and height of the place to be shotcreted, above location of the machine.			

ST NO	Item Description	Unit	Qty	Weightage(%)
	vii. The application shall proceed in an upward direction. Beams, stiffeners and intermediate walls, if any, shall be wrapped with wire fabric and completely covered with shotcreting. All rebound shall be removed from the area of application as the work progresses and such rebound material shall not be reused.			
	viii. As soon as the freshly shotcreted surface shows the first dry patches, a fine spray of water shall be applied to keep too moist. After the surface has hardened, it shall be kept continuously moist for minimum seven days. If there is extreme heat, especially when accompanied by hot winds, the shotcreted surface, immediately upon completion, shall be covered with burlap or similar covering, which must be kept continuously moist for 14 days after shotcreting. The temperature of the lining shall not be permitted to exceed 38oC during placing and curing.			
	<b>Note: 6mm MS Reinforcement and welded wire mesh as specified shall be used for thickness of Shotcreting above 50mm</b>			
	a. Shotcreting for <b>thickness 50mm and above</b> of with 6mm MS Reinforcement and welded wire mesh as specified	SQM	<b>4812</b>	<b>0.78464514</b>
	b. Shotcreting for thickness 25mm <u>without</u> 6mm MS Reinforcement and welded wire mesh as specified	SQM	<b>50</b>	<b>0.00592992</b>

There is no change in Instructions to Bidders

**EE) Revised Excel sheet for calculation Purpose is also being issued as part of this corrigendum.**

All other Terms and conditions of the Tender Specification shall remain unaltered unless expressly amended by BHEL in writing.

Bidders are requested to submit as a part of their offer, a copy of this corrigendum duly Digitally countersigned by the authorized signatory as a token of Bidder's unqualified acceptance of this corrigendum.

**BIDDERS MAY PLEASE NOTE THAT SUBJECT TENDER IS E-TENDER AND THE OFFER IS TO BE SUBMITTED ONLY IN E-PROCUREMENT PORTAL→ <https://eprocurebhel.co.in>**

**BIDDERS WHO HAVE ALREADY SUBMITTED THEIR OFFERS PRIOR TO ISSUANCE OF THIS CORRIGENDUM IN E-TENDER PORTAL ARE REQUIRED TO RE-SUBMIT THEIR OFFER AFTER TAKING COGNIZANCE OF THIS CORRIGENDUM.**

Thanking you,  
Yours Sincerely,

GM (Purchase)