

**ALL PROJECTS
– CIVIL WORKS**

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Framework Agreement (Rate Contract) for
Execution of Balance Civil, Structure and
Architecture Works at various project sites of
BHEL across India

Vol IA

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC)

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Chapter - I: PROJECT INFORMATION

1.0	INSTRUCTIONS TO BIDDERS
1.1	<p>BHEL is intended to finalize a Framework Agreement (Rate Contract) for <i>“Execution of Balance Civil, Structure and Architecture Works at various projects of BHEL across India on as-and-when-required basis”</i> as per BOQ Cum Rate Schedule and Technical Specification of tender for following BHEL project sites.</p> <p>The project sites with executing PS-Regions are envisaged as follows:</p> <p>PSNR</p> <ol style="list-style-type: none"> 1. 2X800 MW NTPC Singrauli Super Thermal Power Plant, Stage-III 2. 1X800 MW HPGCL Super Critical Expansion Unit of Deen Bandhu Chhotu Ram Thermal Power Plant, Yamuna Nagar 3. 1X660 MW MPPGCL Amarkantak TPS, Unit-6 <p>PSWR</p> <ol style="list-style-type: none"> 1. 1X800 MW GSECL Ukai Ultra Super Critical, Unit - 7 2. 2x660 MW CSPGCL Super Critical Thermal Power Project, HTPS, Korba West 3. 2X660 MW MAHAGENCO Koradi Thermal Power Station, Units – 11 & 12 (BTG Package) 4. 1X660 MW MPPGCL Satpura TPS, Unit-12 5. 2X660 MW NTPC Talcher Thermal Power Station 6. 3X800 MW NTPC Patratu Thermal Power Station 7. FGD Works of NSPCL Bhilai Thermal Power Station 8. FGD Works of NTPC Korba Thermal Power Station 9. FGD Works of NTPC Ramagundam Thermal Power Station 10. ESP R&M Works of NTPC Ramagundam Thermal Power Station 11. FGD Works of NTPC Mauda Thermal Power Station <p>PSER</p> <ol style="list-style-type: none"> 1. 2X800 MW NTPC Lara Super Thermal Power Station 2. 1X800 MW NTPC Sipat Super Thermal Power Project, Stage-III 3. 2X800 MW DVC Koderma Super Thermal Power Plant 4. 2X660 MW DVC Raghunathpur Thermal Power Station, Phase -II <p>PSSR</p> <ol style="list-style-type: none"> 1. 3X800 MW NLC Talabira Thermal Power Project 2. 1X800 MW SCCL Singareni Thermal Power Project, Stage-II 3. 1X800 MW NTPC Darlipali Super Thermal Power Project, Stage – II 4. 5X800 MW TGGENCO Yadadri Thermal Power Station

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	<p>5. FGD Works of TGGENCO Kothagudem Thermal Power Station</p> <p>6. 2X660 MW TNPGL Udangudi Thermal Power Plant</p> <p>7. 1X660 MW TNPGL Ennore Thermal Power Station</p> <p>In addition to the above projects, the scope of work may also be executed in any other project site under execution by BHEL across India, in near future within the original & extended Framework Agreement period.</p>
<p>1.2</p>	<p>Circumstances under which the rate contract shall be utilized:</p> <ol style="list-style-type: none"> 1. Due to descoping/short closure/termination of work from existing agency/agencies. 2. Specific work is not described or not covered under any existing contract or when it arises as an unforeseen requirement for the project. <p>Note:</p> <p>The rate contract agency and the existing agency from which the work is de-scoped, short-closed or terminated shall not be the same.</p>
<p>1.3</p>	<p>BHEL is presently executing multiple projects listed as above at various locations across India, wherein civil works of varying nature and quantities are required at different stages of project execution.</p> <p>The exact scope, quantities and construction schedule of such civil works cannot be accurately forecasted in advance, as these are dependent upon project progress, site readiness and customer requirements.</p> <p>The quantities mentioned in the 'BOQ cum rate schedule for the Framework Agreement' is tentative and may change to any extent (both in plus side and minus side). No compensation becomes payable for any variation of the final executed contract value.</p> <p>At the time of issuance of Work Order for a particular project, tentative quantity in 'BOQ cum rate schedule for the project' along with Completion Schedule and other details as per LOA shall be communicated to the agency, depending upon the site-specific requirement.</p> <p>Preferably, the minimum value of a Work Order shall be Rs. 2 Crore (Rupees Two Crore only) and the maximum value shall be Rs. 15 Crore (Rupees Fifteen Crore only).</p> <p>BHEL reserves the right to place the Work Order for any value within the aforesaid range and the bidder shall be deemed to have unconditionally accepted this condition.</p> <p>The minimum contract period shall be Four (04) months and the maximum contract period shall be Ten (10) months.</p> <p>For any Work Order value between Rs. 2 Crore and Rs. 15 Crore, BHEL at its sole discretion, shall decide the applicable contract period, which shall be within the range of Four (04) months to Ten (10) months, based on project requirements and assessed</p>

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	<p>scope of work. The contract period shall be clearly stipulated in the Work Order and shall be binding on the contractor.</p> <p>In certain cases, BHEL may place Work Order of value less than Rs. 2 Crores (Rupees Two Crore Only) and contract period less than Four (04) months with mutual consent of both parties.</p>
1.4	<p>Other contractors would be working in this area and their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors.</p>
1.5	<p>The information given herein is for general guidance and shall not be contractually binding on BHEL/Owner. All relevant site data /information as may be necessary shall have to be obtained /collected by the Bidder.</p>
1.6	<p>The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'Engineer' or his duly authorized representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.</p>
1.7	<p>No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.</p>
1.8	<p>Modality for Determination of Payable/Recoverable Cost Impact Arising from Variation in Rates of Major Construction Materials (Coarse Aggregate, Fine Aggregate, Boulders and Bricks) in Different Project Sites:</p>
1.8.1	<p>Average rates of the major construction materials (coarse aggregate, fine aggregate, boulders and bricks) of different project Sites has been considered in the estimated cost of the Packaged Tender.</p> <p>Project specific differential rate chart has been prepared for the major construction materials (coarse aggregate, fine aggregate, boulders and bricks) as compared to average rate (Project specific Rate “minus” Average rates considered in estimate) and is enclosed as Annexure-C.</p> <p>An undertaking from all bidders shall be obtained for acceptance of the project specific differential rate chart as per Annexure-C.</p>
1.8.2	<p>Additional cost either payable or recoverable shall be calculated based on actual consumed quantity (as per concrete mix design / coefficient specified in DSR) for major construction materials and the project specific differential rate chart.</p> <p>Illustrative Example:</p>

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Sample Calculation for M-30 Grade of Concrete:

Quantity as per concrete mix design for a particular project (say Koderma) are considered as below:

Fine Aggregate = 0.39 Cum per Cum of concrete

Coarse Aggregate 20mm = 0.52 Cum per Cum of concrete

Coarse Aggregate 10mm = 0.33 Cum per Cum of concrete

Differential rates for the particular project (say Koderma) as per Annexure-C:

Fine Aggregate = (+) 180/- per Cum

Coarse Aggregate 20mm = (+) 110/- per Cum

Coarse Aggregate 10mm = (-) 160/- per Cum

Additional Cost Payable (+) or Recoverable (-) per Cum of concrete would be:

$$= (0.39 \times 180) + (0.52 \times 110) - (0.33 \times 160) = 70.2 + 57.2 - 52.8 = \text{Rs. } 74.6$$

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Chapter – II: SCOPE OF WORKS

2.0	SCOPE OF WORKS:
2.1	Execution of Civil, Structure and Architecture Works at various projects of BHEL across India on as-and-when-required basis excluding supply of cement, reinforcement steel and structural steel which shall be issued by BHEL free of cost (unless other-wise specified in the BOQ Cum Rate Schedule).
2.2	Project specific Work Order shall be issued to the successful bidder which contains/includes area of work/ activities, BOQ Cum Rate Schedule, Time Schedule, other details as per LOA, etc.
2.3	<p>BOQ Cum Rate Schedule shall also include items for <i>“Providing T&Ps On Rental Hiring Basis”</i> and <i>“Providing Manpower for Miscellaneous Works at Project Sites on Request of BHEL Site-in-Charge”</i></p> <p>The engagement of Tools & Plants (T&Ps) and manpower for the activities covered under the awarded scope of work shall be deemed included and will not be paid separately. However, if during execution it becomes necessary to deploy T&Ps and manpower for additional work in other areas within the same premises, such deployment shall be carried out at the hiring rates specified in the Bill of Quantities (BOQ).</p>
2.4	The work under this contract shall be carried out as per BOQ Cum Rate Schedule and in compliance of tender conditions including technical specifications and approved drawings/ documents.
2.5	GENERAL
2.5.1	Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
2.5.2	Furnishing all labor, materials, supervision, construction plans, equipment, supplies, transport, to and fro the site, fuel, electricity, compressed air, water and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handing over the works in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.
2.5.3	Contractor is required to monitor the entry/ exit of its workforce/ labour. BHEL may provide labour attendance system (biometric based) for capturing the attendance details of all the labour on daily basis at fixed entry/ exit points. Contractor shall ensure that the labour enters/ exits the project location from the designated locations in order to map/ monitor the movement of the labour/ workers. Apart from the above, Contractor shall be responsible for monitoring labour movement and submitting daily labour reports in format specified by BHEL Site In charge.
2.5.4	The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials removed shall be burnt or otherwise disposed of as directed by the BHEL Engineer-in-Charge. No separate payment for these operations shall be

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	made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.
2.5.5	All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts. Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, and contractor's material storage area etc. at his cost.
2.5.6	Drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.
2.5.7	All necessary arrangement for safety like Hard Barricading around deep structures with scaffolding pipes and providing of safety net on the slope of excavated area is in contractor's scope. Contractor shall comply with all safety requirements as per statutes, BHEL and Customer specifications as applicable for execution of works. Safety rules and guidelines of BHEL and Customer are provided elsewhere. The contractor shall also deploy PVC/MS barricading with fluorescent stickers mentioning agency's name in addition to the hard barricading with proper signages as instructed by BHEL.
2.5.8	Customer may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.
2.5.9	Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
2.5.10	Royalty & other fees: Royalty challan and statutory documents shall be submitted along with RA Bills for processing of Bills. In the event of non-availability of royalty/statutory documents along with RA Bill, BHEL site at its discretion may opt to withhold relevant amount from the running RA Bills and process the bill further to maintain proper cash flow and continuity of work. The Contractor shall pay and indemnify the Employer against any default in payment of Royalties or Seignorage Fee or Cess or other charges by the Contractor or the agency from which the Contractor purchases soil/earth, sand, stone/aggregates, metals, minerals or minor minerals. In the event of there being a statutory increase in the rates of royalty charges/fresh levy of royalty on materials, the same shall be reimbursed to the Contractor upon submission of original challan by him of having made the payments at revised rates. In the event of there being a decrease in such rates, the same shall be recovered from the Contractor. The base date for calculating the increase or decrease shall be the rate as on seven (7) days prior to the date of Techno commercial bid opening. The total reimbursement (positive or negative) as specified above, to be paid or recovered, shall however be calculated on the quantity of materials actually accepted for payment), whichever is less, and on the basis of documentary evidence of Govt. Notification.

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	However, the Contractor will settle claims, if any, on account of over charge by the State Authorities.
2.5.11	Carrying out topographic survey of the entire work area and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identification works etc. The contractor shall provide the owner/BHEL such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.
2.5.12	Arranging for joint checking (with BHEL / BHEL's Customer / Consultant) of all site construction activities, Preparation of joint protocols for each & every activity and maintaining quality records for audit/inspection as per approved FQP by BHEL.
2.5.13	Medical/First aid center/medicine purchased for emergency purpose, Doctor along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed/ shared among the contractors working in Project site proportionately based on contract value (Refer HSE Plan for Calculation).
2.5.14	The complete works shall be carried out as per BOQ cum Rate schedule. If any work covered in the scope of contract cannot be executed using items available in BOQ, additional / extra items shall be made and rates for such items shall be worked out as per GCC clause 2.15.7. However, contractor shall be bound to execute all the works under the scope of the contract and decision whether an extra item is applicable or not, shall be taken by BHEL Engineer which will be binding on the contractor.
2.5.15	Any activity which is necessarily required for satisfactory execution of any item of BOQ in line with technical specifications shall be deemed to be included in BOQ item even if it is not described in the item description and no extra payment shall be made against such activity.
2.5.16	Contractor shall take up housekeeping activity on regular basis to keep the site clear of rubbish/ debris.
2.5.17	All necessary inputs with respect to all the changes carried out during the execution, for preparation of 'As built Drawings' to be submitted by Contractor to BHEL for submitting the 'As Built drawings' to BHEL's customer.
2.5.18	The necessary precautionary measures shall be adopted by the contractor to prevent water logging in the area, while carrying out the site works. Dewatering as required in the project area shall be done by the contractor.
2.5.19	Contractor shall ensure at all times that his work area & approach/ access roads are free from accumulation of water, so that the materials are safe and the erection/ progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL. Dewatering required for control of sub-soil water for construction of various foundations for the package shall be paid under relevant item(s) available in the BOQ

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	<p>cum rate schedule. Dewatering shall be planned and continued till backfilling is completed. For discharge of sub-soil water/ rain water, a suitable piping system with pumping arrangement shall be provided by the contractor with prior approval of BHEL/ Customer as per instruction of BHEL Engineer in-charge. Contractor has to deploy dewatering diesel driven pumps/ DG sets of suitable capacity to take care of any exigencies in case of power disruption to the electrical driven dewatering pumps.</p>
2.5.20	<p>Documentation and Reporting:</p> <p>The Contractor shall maintain accurate records of material supplies, including delivery challans, invoices, and stock registers. These records shall be submitted to BHEL on monthly basis maintaining proper format of records in consultation with BHEL site.</p>
2.5.21	<p>Quantity Assessment of Supply Items:</p> <p>Supply of BOI material shall be based on assessment of the project status/requirement and shall be done only after written clearance of BHEL’s Engineer-In-Charge. The supply quantities shall be calculated based on available drawings and work fronts.</p> <p>Contractor shall be the custodian of the BOI supplied items. In case, contractor fails to execute/install/fix/etc. the BOI items for recorded reasons, the contractor shall be liable to handover the materials in good usable condition to BHEL Stores. Further, if the contractor denies to/doesn’t handover the materials on the instruction of BHEL-In Charge, payment made against such supplies shall be recovered from the contractor.</p> <p>The decision of Engineer-In-Charge Shall be final and Binding to the contractor.</p>
2.5.22	<p>Reconciliation of Supply:</p> <p>The final quantities of BOI materials supplied shall be reconciled upon the final execution of the total scope of work. The measurement against supply portion shall be reconciled after final execution of total work and the actual executed quantities as per BOQ items shall be considered for final measurement for recording in measurement book.</p>
2.5.23	<p>The contractor has to intimate, share at least two months in advance regarding any quantity variation in BOQ items for review by BHEL.</p>
2.6	<p>Project Specific Tentative Technical Staff Requirement:</p>
2.6.1	<p><u>A – Civil Works</u></p> <ul style="list-style-type: none"> • Project-In-Charge - 01 Head with minimum 15 Years’ experience in Industrial Construction Projects Preferably in Power Plant Civil & Architectural Works etc. • Experienced Civil Engineers - 02 Heads • Experienced Foreman / Supervisors - 04 Heads • Planning & Billing Engineers - 01 Head • Stores, Gate Pass - 01 Head • Accounts & Administration - 01 Head • Quality Control Engineer of minimum 5 years of experience - 01 Head • Safety Engineer - As per HSE Plan

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- Surveyor – 01 head capable to handle total station
- Operator, Licensed Electrician, Mechanic - Minimum 2 Nos
- Security Guards (Round the Clock) – As per requirement.

B – Site Fabrication & Erection works:

- **Asst. Project Managers** – 01 Head with 12 Years’ experience in Industrial Building & Power Plant Civil / Structural Works
- Experienced Structural Fabrication Engineers – 01 head
- Experienced Structural Erection Engineers – 01 head
- Experienced Foreman / Supervisors – 02 heads
- Safety Engineer – As per HSE Plan

C – Tentative Breakup of Manpower Requirement for Civil & Structural Works:

Experienced Carpenters & Helpers	Approx. 35 Nos.
Experienced Mason, Bar Benders & Helpers	Approx. 35 Nos.
Experienced Erection Manpower including Fabricator, Rigger, Fitter & Helpers.	Approx. 25 Nos.
Other manpower like Painters, Supervisors, Operators, Helpers, etc.	Approx. 25 Nos.
Total	Approx. 120 Nos.

Note: -

Manpower requirement shown in the above-mentioned list is peak period suggestive requirement only. Deployment of manpower shall be progressive to meet the project schedule. However, manpower mobilization schedule as mutually agreed in Monthly Progress Review(F-14) at site, shall be decided(increased/decreased) based on front availability, drawing availability and erectable target completion to meet project milestones without additional financial implication to BHEL.

2.6.2	Deputation of above man-power shall be jointly decided at site in line with construction Schedule.
2.6.3	Engineer/ supervisor for other functions like store & purchase, material management, planning, finance, administration etc. are also to be provided as per site requirement.
2.6.4	BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.

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2.6.5	In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.
2.7	Void
2.8	Field Quality Assurance:
2.8.1	The contractor shall be responsible for day-to-day quality checks for civil, structural and architectural works including concrete and other building materials in line with approved Field Quality Plan (FQP) and Manufacturing Quality Plan (MQP) during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/CUSTOMER and as per FQP/MQP approved by BHEL/CUSTOMER.
2.8.2	<p>Setting Up of Laboratory Works: BHEL shall set up centralised civil quality laboratory in the close vicinity of the work site wherein routine test shall be performed by the service provider for all civil contractors working for the project. <i>The civil lab building and the testing equipment shall be excluded from the contractor's scope.</i></p> <p>Sampling of all construction materials, cube casting for concrete (required number of cubes to be arranged by contractor), etc. shall be carried out by contractor, transported to the laboratory and handed over to the service provider of the centralized laboratory for routine testing and documentation.</p> <p>All field test like slump test (at batching plant/ field), soil test for compaction (MDD), test for road work, etc. shall be carried out by the contractor without any extra cost to BHEL.</p> <p>In case, third party testing related to the scope of work is required to be conducted for any reason whatsoever, shall be arranged/conducted by the contractor without any extra cost to BHEL.</p> <p>Contractor shall depute their representative QA/QC Engineer and Supporting Staff at site/lab during testing and documentation, etc. for satisfactory conductance of the routine test.</p> <p>In view of above scope matrix for the routine testing, contractor does not absolve from their responsibility for satisfactory performance of the work done as per terms and conditions of the contract.</p>
2.8.3	VOID
2.8.4	Design Mix:
2.8.4.1	Mix Design for concreting shall be provide by BHEL and shall be followed by the bidder. Contractor has to ensure adding of high grade PCE based admixture to minimize the cement content in line with ASTM C 494 as advised by BHEL time to time without any additional cost.

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2.8.4.2	<p>The following specifications of PCE-type high performance super plasticizer shall be considered for concrete works as per BOQ item:</p> <p>High performance super plasticizer PCE-based water reducing admixture of Type-G/F as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30%.</p> <p>The performance compliance of the Super-plasticizer should be ensured based on the following tests:</p> <ol style="list-style-type: none"> a) Marsh cone test for optimum dosage of admixture with specific brand of cement. b) Slump retention test of concrete. c) Water reduction capability test by doing trial mix. d) Rheological properties of fresh concrete on trial mix.
2.8.4.3	All other tests related to MDD for backfilling, road sub-base, etc, slump, cube for concrete and mortar, water, etc have to be carried out by the contractor from above mentioned laboratories as advised by BHEL/Customer without any extra cost to BHEL.
2.8.4.4	In case ambient temperature is greater than 32 Degree Celsius, Placement temperature should be controlled with necessary temperature correction of concrete by introducing Chiller Plant along with Batching Plant or by adopting ice concrete. If ice is used, the ice water source test report shall be provided for review and approval of BHEL/Customer prior to use.
2.8.4.5	Before commencement of work, Contractor has to satisfy/ ensure the design mix proportions through conducting trial mix. Contractor shall not be absolved from the responsibility of quality of concrete works as per relevant specification, standard and to ensure satisfactory performance as per terms and conditions of contract. Any issue raised regarding design mix after successful completion of trial mix shall not be entertained and contractor shall not be entitled for any cost or damages.
2.9	HIERARCHY:
2.9.1	<p>In case of any conflict/ deviations amongst various documents, the order of precedence shall be as follows:</p> <ol style="list-style-type: none"> 1. Items Description in BOQ Cum Rate Schedule 2. Technical Conditions of Contract (TCC) 3. Customer Technical Specification for the specific project (which shall be provided along with Work Order) 4. BHEL's Standard Specification (Section-D) 5. IS Standard

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Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
3.1	Establishment:			
3.1.1	For Construction Purpose:			
a.	Open space for office (as per availability within project premises)	Yes		Location will be finalized after joint survey with owner
b.	Open space for storage (as per availability within project premises)	Yes		Location will be finalized after joint survey with owner
c.	Construction of contractor's office, canteen and storage building including supply of materials and other services		Yes	
d.	Contractor's all office equipment, office / store / canteen consumables		Yes	
e.	Canteen facilities for the contractor's staff, supervisors and engineers etc.		Yes	
f.	Firefighting equipment like buckets, extinguishers etc.		Yes	
g.	Fencing of storage area, office, canteen etc. of the bidder		Yes	
h.	Development of land provided for office, storage, fabrication yard, etc.		Yes	
3.1.2	For living purpose of the contractor:			
a.	Open space for labour colony		Yes	Refer Clause 3.10 of TCC
b.	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	Refer Clause 3.10 of TCC
3.2	Electricity:			
3.2.1	Electricity for construction purposes			Refer Clause 3.12 of TCC for details
a.	Single point source	Yes		Free of cost at one point near the site. Further distribution and Metering are in scope of bidder.
b.	Further distribution for the work to be done which include supply of materials and execution		Yes	At contractor's own cost

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Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
c.	Distribution of Electricity for the office, stores, canteen, of the contractor which include supply of materials and execution		Yes	At contractor's own cost
d.	Supply, installation and connection of energy meter including operation and maintenance		Yes	At contractor's own cost. Calibration certificate to be provided.
e.	Duties and deposits including statutory clearances for the above		Yes	At contractor's own cost
f.	Demobilization of all the facilities after completion of works		Yes	At contractor's own cost
3.2.2	Electricity for living accommodation for the contractor's staff, engineers, supervisors, labour Hutment etc.			Contractor has to make his own arrangements
a.	Single point source		Yes	At contractor's own cost
b.	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	At contractor's own cost
c.	Payment/Duties and deposits including statutory clearances if applicable		Yes	At contractor's own cost
3.3	Water Supply:			
3.3.1	For construction purposes:			
a.	Making the water available at single point	Yes		Free of cost at one point near the site. Further distribution and Metering are in scope of bidder. Refer Clause 3.13 of TCC for details.
b.	Further distribution as per the requirement of work including supply of materials and execution		Yes	At contractor's own cost
3.3.2	Water supply for contractor's office, stores, canteen etc.			Contractor has to make his own arrangement at his own cost.

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Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
a.	Making the water available at single point		Yes	At contractor's own cost
b.	Further distribution as per the requirement of work including supply of materials and execution		Yes	At contractor's own cost
3.3.3	Water supply for Living Purpose			Contractor has to make his own arrangement at his own cost.
a.	Making the water available at single point		Yes	At contractor's own cost
b.	Further distribution as per the requirement of work including supply of materials and execution		Yes	At contractor's own cost
3.4	Lighting			
a.	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	At contractor's own cost
b.	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	At contractor's own cost
c.	Providing the necessary consumables like bulbs, switches, etc. during the course of project work		Yes	At contractor's own cost
d.	Lighting for the living purposes of the contractor at the colony / quarters		Yes	At contractor's own cost
3.5	Communication facilities for site operations of the bidder			
a.	Téléphone, Fax, Internet, Intranet, E-mail, etc.		Yes	At contractor's own cost
3.6	Demobilization of all the above facilities		Yes	At contractor's own cost
3.7	Transportation			

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Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
a.	For site personnel of the bidder		Yes	
b.	For bidder's equipment and consumables (T&P, Consumables etc.)		Yes	
3.8	Fabrication & Erection Facilities			
3.8.1	Engineering works for construction:			
a.	Providing the erection/constructions drawings for all the scope/equipment covered under the scope of this tender	Yes		
b.	Drawings for construction methods	Yes	Yes	In consultation with BHEL
c.	As-built drawings where ever deviations observed and executed and also based on the decisions taken at site		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.
d.	Preparation of site execution schedules and other input requirements as per Form-14.	Yes	Yes	In consultation with BHEL
e.	Review of performance and revision of site execution schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
f.	Weekly construction / erection schedules based on Sl. No. d		Yes	In consultation with BHEL
g.	Daily work plan based on Sl. No. d		Yes	In consultation with BHEL
h.	Periodic visit of the senior official of the contractor to site to review the progress so that works is completed as per schedule. It is suggested this review by the senior official of the contractor should be done once in every two months.		Yes	

3.9	Land/Open Space:
3.9.1	Availability of land is very limited and the contractor has to plan and use the existing land considering the use of land by other Civil /mechanical/ electrical contractors and the storage of plant machineries and materials. The existing land shall be shared by all erection agencies. BHEL shall provide free of charge limited open space for office, storage shed, batching plant and laydown area as and where made available by Customer.

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	<p>It is the responsibility of the contractor to construct office, sheds, fabrication yard, establish batching plant, levelling and grading of the land, roads and drains (internal, approach), make necessary drainage arrangements, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work.</p> <p>It is contractor's responsibility to provide watch and ward, security (including fencing/boundary wall) for their equipment, material, stores etc. kept inside the land allotted for the scope of work under this tender.</p>
<p>3.10</p>	<p>Labour Colony:</p>
<p>3.10.1</p>	<p>The contractor shall construct one (01) labour hutment nearby project site within one (01) month from the date of commencement of work, at his own cost.</p> <p>The following shall be applicable for construction of labour shed:</p> <ol style="list-style-type: none"> a) All civil & architectural works, electrification works including lighting and fans, switches, sockets, etc., plumbing, sanitary, bed with mattress, finishing, etc. for labour sheds shall be in the scope of the contractor b) The bed shall be metal type of min size 6 feet by 3 feet with mattress (min 3-inch-thick) c) Windows shall be of metal make, openable window with 6 mm thick toughened glass. d) Roof shall be of metallic color coated profiled sheet (min 0.45mm thick) with proper under deck insulation & false ceiling (bottom of false ceiling shall be min 3m from floor level). e) The wall panel shall be Aerocon panel of min. 50mm thick. f) Doors shall be of metal door frame with solid core flush door shutter with all necessary fittings. <p>Till completion of the labour hutment, the contractor shall make alternate arrangements for accommodation of his workmen, either through rented accommodation or tie-up with existing facilities, at his own cost.</p> <p>Further, in case no space is available nearby project site for construction of labour hutment, the contractor shall accommodate the workmen in rented accommodation in the vicinity of the project site, at his own cost.</p> <p>BHEL may provide one (01) labour hutment for accommodation of approximately 120–125 workers, on chargeable basis @ Rs. 1,00,000/- (Rs. One Lakh Only) per Month per hutment (In case of partial accommodation pro-rata rate shall be charged), subject to availability and at the sole discretion of BHEL.</p> <p>In all cases, arrangement of transportation to and from the work site for workmen shall be the sole responsibility of the contractor, and no extra payment or compensation on this account shall be payable by BHEL.</p>
<p>3.10.2</p>	<p>Contractor shall ensure establishment & maintenance of workmen/labour colony in line with BHEL layout drawings & Guidelines (As per Annexure A - Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites)</p>

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Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

3.10.3	Development of contractor's temporary staff colony and labour colony having adequate no. of rest rooms along with toilets & fencing etc.
3.11	Construction Power:
3.12.1	<p>Construction power (three phases, 415 V/ 440 V) will be provided free of cost at one point near the site at a distance of approx. 500M. Further distribution shall be arranged by the contractor at his own cost and services.</p> <p>However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project at no extra cost to BHEL.</p> <p>If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor shall be responsible for fulfilment of all requirements including statutory requirements in this regard.</p>
3.12.2	Sufficient power factor compensation equipment like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.
3.12.3	Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/ erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.
3.12.4	<p>Distribution of supply shall be done by the contractor using underground cables. The contractor shall be responsible to provide complete LT distribution with Fuse less system including the supply of all materials like cables, necessary isolators/LCB, Switch boards, industrial receptacles/sockets, pipes, etc. observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements.</p> <p>All cables being used for construction power shall be armored only. Buried cable shall be suitably identified by the route markers.</p>
3.12.5	It shall be the responsibility of Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply with the appropriate statutory requirements in all respects. The installation and maintenance of this shall be done by licensed and experienced electrician.
3.12.6	The contractor shall also take the approval/ permission of statutory authorities for his DG set installation. The Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. Nothing extra shall be paid on this account of DG set up and running for construction and office, maintenance etc.
3.12.7	Contractor himself shall be responsible for any loss or damage to their equipment as a result of variations in voltage or frequency or interruptions in power supply.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

3.12.8	While reasonable efforts will be made to ensure continuous electric power supply, interruptions cannot be ruled out and no claim from the Contractor shall be entertained on this account such as idle labor, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.
3.12.9	Contractor shall be well equipped with back-up power supply arrangement like DG set and diesel operated welding machine etc. to tackle situations arising due to failure of supplied power, so as to ensure continuity and completion of critical processes like Operation of Batching Plant, Concreting, etc. that are underway at the time of power failure or important activities planned in immediate future.
3.12.10	The contractor will have to Procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.
3.12.11	Contractor is advised to maintain the calibrated energy measuring instruments and use their system as efficiently as possible to maintain the HT side input energy meter reading and LT side outgoing energy meter reading to sub-contractors as equal.
3.12.12	Contractor to arrange energy meter for office.
3.12.13	Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
3.12.14	Contractor has to make their own arrangements for electricity requirement for labour colony at his own cost within quoted price.
3.12	Construction Water:
3.13.1	Construction water will be provided free of cost at one point within the plant boundary. Contractor has to make arrangement of further distribution of water at his own cost. However, contractor shall make alternate arrangement of construction water till the same is made available by BHEL.
3.13.2	The Contractor should make arrangements for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use in batching plant and construction purposes.
3.13.3	Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.

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3.13.4	In case of non-availability of water, the contractor shall make his own arrangements of water suitable for construction purpose to have uninterrupted work. No separate payment shall be made for any contingency arrangement made by contractor.
3.13	RECORDS TO BE MAINTAINED AT SITE
3.13.5	Record of Quantity of free/Chargeable items issued by BHEL must be maintained during contract execution. Also, reconciliation statement to be prepared at regular intervals.
3.13.6	The below mentioned Records/ Log-books/ Registers applicable to be maintained. a) Hindrance Register b) Site Order Book. c) Test Check of measurements. d) Steel and Cement Supply and Consumption Daily Register e) Records of Test reports of Field tests. f) Records of manufacture's test certificates. g) Records of disposal of soil/ rock generated during and after the work completion. h) Records of disposal of scraps generated during and after the work completion. i) List of T&Ps and MMEs.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

4.0	Project Specific Tools and Plants:	
	Nos. of T&Ps to be deployed at the specific project site shall be decided w.r.t. monthly plan and review format (F-14) based on site requirement.	
	The Tools & Plants (T&Ps) indicated are tentative and for guidance only. The contractor may execute the work by hiring or through local tie-ups of suitable T&Ps instead of mobilizing major equipment such as mobile batching plants, transit mixers, boom placers, etc., subject to compliance with technical requirements and approval of the Engineer-in-Charge.	
	Below given Nos. are tentative for planning purposes by the contractor.	
Sl. No.	Description of T&P	Tentative Requirement
A	T&Ps for Civil Works	
1.	Mobile Batching Plant (10 Cum/Hr. to 25 Cum/Hr.)	01 No. (As & when required)
2.	Boom Placer (Min. 35m Long)	01 No. (As & when required)
3.	Concrete Pump (required capacity and sufficient lift)	01 No.
4.	Concrete Transit Mixer (min. 6 cum capacity)	03 Nos.
5.	Hydraulic Excavator /Poclain	01 No.
6.	Dumper/ Tipper (min. 16 cum capacity)	02 No.
7.	Dozer	01 No.
8.	Vibro Roller	01 No.
9.	Back Hoe Loader (JCB)	01 No.
10.	Concrete Vibrators with adequate needle (diesel/ electric)	05 Nos.
11.	Power driven earth rammer (Roller Type 1/2 T)	01 No.
12.	Earth Compactor- 3MT Capacity	As per requirement
13.	Tractor mounted grader/ loader	As per requirement

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14.	Pick & carry crane (10/12 T cap) *Note- Hydra is not allowed at project site	01 No.
15.	Trailer 15 MT or required capacity	01 No.
16.	Small trucks 2T/5T for shifting of reinforcement/cement/formwork etc. within site	As per requirement
17.	Trailer for shifting of crawler mounted equipment's like Poclain, Dozer, etc.	As per requirement
18.	Tractor with Trailer	As per requirement
19.	Scaffolding Pipes, Clamps / Swivel Couplers (One/Two Way), Props, Jacks, Screw Heads, MS Pipes, Wooden Battens, Planks, Bullies, H Frames, Tie Rods with Nuts, Adjustable Achro Span (Considering Individual Areas)	As per requirement
20.	Reinforcement bending machine	02 Nos.
21.	Reinforcement cutting machine	02 Nos.
22.	Adequate dewatering system with requisite number and capacity of dewatering pumps	As per requirement
23.	Well point dewatering arrangement	As per requirement
24.	Self-priming Dewatering pump of capacity (Diesel/ Electric) From 2 HP to 15 HP	03 Nos.
25.	Submersible/ mono-block electric pump 20 HP	01 Nos.
26.	Curing pump 1.5/ 2 HP	03 Nos.
27.	Concrete cutting power tools (DD2E of HILTI/BOSCH make)	01 No.
28.	Concrete coring machine for drilling in concrete upto 150 mm dia. along with diamond bits	As per requirement
29.	Pneumatic breaker with jack hammer	As per requirement
30.	Compression testing machine (200 T cap)	As per requirement
31.	Concrete cube moulds.	25 Nos.
32.	Total Station with adequate no. of Surveyors & support staff	02 Nos.

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33.	Theodolite	As per requirement
34.	Auto level & staff	02 Nos.
35.	Truck mounted Water Tanker with sprinkler attachment	01 No.
36.	Truck mounted DG Set of 125 KVA Capacity	01 No.
37.	Construction Cable and Water Pipe Line	As per requirement
38.	Building Hoist	As per requirement
39.	Fully mechanized paver fitted with electronic sensors	As per requirement
40.	Reinforcement scrap straightening machine	As per requirement
41.	Portable Welding machine	As per requirement
42.	Electric winch 5T capacity	As per requirement
43.	Movable tower crane	As per requirement
44.	Plate vibrators for slab concrete	01 Nos
B	T&Ps for Structural Fabrication & Erection works	
1.	75 MT Capacity Tyre mounted Crane	01 No. (As & when required)
2.	40/45 MT Capacity Tyre mounted Crane	01 No.
3.	Trailers with pulling unit_40 MT	01 No.
4.	Farana crane (Required Capacity) *Note- Hydra is not allowed at project site	01 No.
5.	Power/Hand winch	As per requirement
6.	Welding Machine	As per requirement
7.	Heating Oven	03 Nos.
8.	Portable Oven	As per requirement
9.	Portable grinding machine of various sizes	As per requirement

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10.	Calibrated Power driven bolt tightening machines	02 Nos.
11.	Manual Torque tightening machine	02 Nos.
12.	Torque calibrator	As per requirement
13.	Bolt Tension Calibrator	As per requirement
14.	Impact wrench with socket (Pneumatic)	As per requirement
15.	3-phase distribution board with complete set up for drawl of construction power	As per requirement
16.	Power cable for drawl of construction power	As per requirement
17.	Self-drilling cum tapping machine for screws	As per requirement
18.	UT Testing Machine	As per requirement
19.	Radiography arrangement with radioactive isotope source	As per requirement
20.	Pug Cutting machines	As per requirement
21.	Plasma Cutting Machine	As per requirement
22.	Rolling Machine	As per requirement
23.	Chain pulley blocks	As per requirement
24.	Turn Buckles and Huck-Chuks	As per requirement
25.	Scaffolding materials with clamps for cladding fixing, etc works	As per requirement
26.	Hoisting and pulley devices/pulleys	As per requirement
27.	SPANNERS / EYE BOLTS (OF ALL SIZES)	As per requirement
28.	Wooden/Concrete sleeper 1.5-2.0 Mtr length	As per requirement
29.	Sufficient quantity of steel ladders for approach up to the top of each erected column to be required during erection of columns.	As per requirement
30.	Suspended working platform Size :7mX1mX0.5m, Rated load 800 kg to 1000 Kg (For Cladding Fixing Works)	As per requirement
31.	Theodolite of required accuracy	As per requirement
32.	Air compressor/blower (electric/diesel operated)	As per requirement

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33.	Fill pump	As per requirement
34.	Hydraulic Test pumps/ Hand pumps Along with Suitable/ different ranges of calibrated Pr. gauges	As per requirement
35.	Shot Blasting Cleaning set up with copper slag	As per requirement
36.	Stud Welding Machine	As per requirement

Sl. No.	List of suggestive safety Equipment /PPEs to be included in List of minimum T&P:	Remarks
1.	<p>Safety Net (Conforming IS 11057:1984)</p> <p>Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175). Two meters length shall be provided at all four corners.</p>	As per requirement
2.	<p>Fall Arrester ‘Rope grab fall arrester’ & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope.</p> <p>Rope Grab fall arrester: Openable & Guided type Fall Arrester (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. Material: Nickel Chrome plated Steel</p> <p>Connector: Karbiner conforming to EN 362 (Minimum Strength 22 KN), material: Steel</p> <p>Retractable Fall arrester Block (Range 6 Mtr to 15 Mtr)</p>	As per requirement
3.	<p>Horizontal life line</p> <p>Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end).</p>	As per requirement
4.	<p>Ladders on column</p> <p>The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 16mm to 25 mm, and minimum clear length of rungs shall be 40.6 centimetres. The distance between rungs shall not exceed 30.5 centimetres. Each ladder shall have maximum height of 9.0 metre.</p>	As per requirement

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Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

	The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners.	
5.	Height Rescue Kit and Confined space rescue kit	As per requirement
6.	Lux Meter & Breathe Analyser	As per requirement
7.	Multi Gas Meter	As per requirement
8.	ELCB & RCCB Tester	As per requirement
9.	Earth Resistance meter	As per requirement
10.	Scaffolding materials as per EN 74 for hard barricading	As per requirement
11.	Oxygen Meter	As per requirement
12.	Fire Blanket	As per requirement
13.	Fire resistant tarpaulins	As per requirement
14.	Safety Posters as per BHEL Guidelines	As per requirement
15.	Fire Extinguishers: ABC – 6 Kg: 50 Nos, Co2 – 4.5 Kg: 20 Nos, Foam – 9 Kg: 5 Nos. Fire Bucket (set of ¾ buckets) with stand – 10 Nos	As per requirement
16.	Rubber Mat as per IS 15652	As per requirement
17.	Electrical rubber gloves	As per requirement
18.	Water Sprinkling tanker for dust suppression	As per requirement

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Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

4.2	Measuring and Monitoring Equipment (MMEs): To be finalized as per site requirement.
4.3	T&Ps shown in the above-mentioned list is suggestive requirement. However, mobilization schedule as mutually agreed at site for major T&Ps, have to be adhered to. Numbers/time of requirement will be reviewed from time to time at site and contractor will provide required T&Ps/equipment to ensure completion of entire work within schedule/ target date of completion without any additional financial implication to BHEL. Contractor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipment i.e. batching plant, boom placer, concrete pump, cranes etc. Also, on completion of the respective activity, demobilization of T&Ps in total or in part can be done with the due approval of BHEL Engineer-In-Charge. Retaining of the T&Ps during the contract period will be mutually agreed in line with construction requirement.
4.4	The contractor shall arrange crane operator, diesel, petrol and other consumables including electrical / water / air connections required for the tools and plants, equipment etc. Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay. Required number of experienced mechanics and helpers for routine maintenance of the above T&Ps shall be provided by the contractor within his quoted rate.
4.5	Contractor shall submit the T&P mobilization schedule indicating the quantity and duration of deployment on monthly basis for the entire contract period in mutual concurrence with BHEL Engineer at the time of commencement of work.
4.6	Other terms and conditions regarding T&Ps to be deployed by Contractor, shall be as per clause No. 4.2 of SCC

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – V: T&PS AND MMES TO BE PROVIDED BY BHEL

5.0	LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:			
5.1	SN	DESCRIPTION	QUANTITY	REMARKS
	1	CRAWLER/MOBILE CRANE OF CAPACITY 75 MT	Over and above quantity mentioned in Chapter – IV – (T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR.)	BASED ON WORK REQUIREMENT
	2	CRAWLER/MOBILE CRANE OF CAPACITY OVER AND ABOVE 150 MT CRANE	As per requirement	BASED ON WORK REQUIREMENT
5.2	<p>Note for Sl. No. 5.1 above:</p> <ol style="list-style-type: none"> 1. The contractor shall plan to execute the work by deploying cranes mentioned in Chapter-IV of TCC. However, BHEL at its discretion may provide additional cranes of capacity 75 MT and above to expedite the work. The decision of BHEL Site In-charge / Construction Manager in this regard shall be final. 2. The cranes may be BHEL owned or may be obtained on hiring basis including operating and maintenance crew. 3. Operator and O&M for BHEL owned crane will be provided by BHEL. 4. Operator and O&M for hired crane will be provided by the hiring agency. 5. Contractor shall provide the fuel for BHEL (Hired/owned) provided cranes for his use. 6. Contractor shall provide necessary manpower assistance for initial and final assembly & dismantling and for subsequent operations of boom extension and reduction during execution of work. Contractor shall also make necessary arrangements like laying of special sleeper beds and steel plates (material shall be provided by BHEL) for movement and operation of the crane (including initial movement/marching of crane within the plant premises). 			
5.3	Cranes provided by BHEL will be on sharing basis with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time and location within plant premises, as decided by BHEL for			

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Chapter – V: T&PS AND MMES TO BE PROVIDED BY BHEL

	suitable duration and intended purpose. Augmentation of BHEL T&P under special circumstances shall be discretion of BHEL.
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Chapter – VI: TIME SCHEDULE

6.0	<p>TIME SCHEDULE:</p> <p>Duration of Framework Agreement for “Execution of Balance Civil, Structure and Architecture Works at various projects of BHEL across India on as-and-when-required basis” shall be Twenty-Four (24) Months from date of issuance of LOA. However, this rate contract may further be extended for a maximum period of another 3 (three) months at the same rate, terms and conditions at the discretion of BHEL.</p>
6.1	<p>Initial Mobilization and Time Schedule:</p> <p>Based on LOA issued, project specific Work Order shall be issued. After issue of Work Order (though Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of Work Order and submit detailed mobilization plan to start work.</p> <p>The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period as mentioned in Work Order from the date of start of work in a manner required by BHEL to match with the project schedule.</p> <p>Date of Start of work shall be considered as 15 days after date of Work Order or as instructed by BHEL in writing.</p>
6.2	<p>Schedule of Completion:</p>
6.2.1	<p>The entire work under the scope of this contract shall be carried out in such a manner that the stipulated milestones as per Work Order are achieved as per completion schedule given against each activity & released for erection by other agency.</p>
6.2.2	<p>VOID</p>
6.2.3	<p>Detailed schedule:</p> <p>It shall be as per Work Order issued for a particular project.</p>
6.3	<p>The schedule mentioned in Work Order shall be advanced, if there are requirements to advance the project schedule and the civil works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.</p>
6.4	<p>In order to meet the schedule as per Work Order in general, and any other intermediate targets set, to meet customer/ project schedule requirements, Contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL Engineer.</p>
6.5	<p>The contractor shall submit a detailed area/ structure wise L3 schedule within 15 days from Work Order in consultation with BHEL based on tentative schedule of completion as indicated above in table. The major activities as mentioned in Work Order for schedule of completion of work are to be indicated in detailed schedule which will be</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: TIME SCHEDULE

	prepared by the contractor. The detailed L3 schedule shall be approved by BHEL and same shall be implemented. Bidder shall submit L3 schedule to meet the agreed project schedule covering various mile stone activities and their split-up details such as construction, procurement of materials, fabrication & erection activities. This schedule shall also clearly indicate the interface facilities/ inputs to be provided by BHEL/ Customer and the dates by which such facilities/ inputs are required. The schedule shall be acceptable to BHEL for meeting their mile stone targets/ schedule.
6.6	The schedule mentioned in Work Order is tentative and the completion schedule against each structure/ building is for entire completion and handing over the structure/ Building to BHEL. The foundations, pedestals, floors, and any structure, required for the start of structural erection work/ civil work/ mechanical equipment erection work, shall be handed over to BHEL progressively within the scheduled period given in the Work Order, as per the BHEL site requirement.
6.7	Void
6.8	COMPLETION OF WORK AND COMMENCEMENT OF GUARANTEE PERIOD
6.8.1	The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labor hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.
6.8.2	BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the remaining / pending works are executed to the satisfaction of Engineer.
6.8.3	The Engineer shall certify to the contractor the date on which the work is completed and the date thereof for commencement of Guarantee Period. Guarantee Period shall be as given in GCC.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.0	TERMS OF PAYMENT:
7.1	Progressive Payment/ Final Payment: The payments for works under the scope of this contract shall be as per clause no 2.6; 2.22; 2.23 of General Conditions of Contract and Volume-IB, Chapter-X of SCC.
7.1.1	<p><u>Documents required for RA Bill:</u></p> <ul style="list-style-type: none"> • GST Complied Invoice of the work done as per approved BBU. • WAM -6 for RA Bill. • Jointly signed Measurement sheet. • Power of Attorney before submission of Bill. • Validity of Bank Guarantees as applicable under the contract. • Certified quality documents as per approved FQP. • Royalty challan • HR/IR compliance documents: <ol style="list-style-type: none"> i. Wages payment sheet as per applicable minimum wages. ii. Proof of PF contribution submission. iii. Proof of ESI/ WC contribution submission iv. Proof of Bonus payment as per Bonus Act if applicable. v. Proof of EL payment if applicable. vi. Any other statutory document if applicable.
7.1.2	<p><u>Documents required for Final Bill:</u></p> <p>The final bill is drawn as soon as the entire work is completed. From the final amount due, all amounts already claimed up to the previous running account bill will be deducted. It should be ensured that in the final bill the following additional particulars have been provided:</p> <ul style="list-style-type: none"> • Final Bill in WAM-7 Format. • 'No claim' certificate from the contractor. • Clearance certificates where ever applicable viz. Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department, Mining Dept(if applicable), etc. • Final Material re-conciliation statement duly approved by BHEL. • Indemnity Bond as per prescribed format. • Deviation statement showing the difference between the actuals and as per the contract. • Final Delay Analysis.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.2

SECURED RECOVERABLE ADVANCES:

Interest Free Secured Mobilization Advance as per GCC Clause No. 2.13.1 will be payable under exceptional circumstances on certification of BHEL Construction Manager/Project Director at Site. Interest Free Mobilization Advance shall be disbursed for major resource mobilization as mentioned in the Work Order.

Note:

1. BHEL Site-CM/Project Director shall be the deciding authority for assessing the admissibility of advance payment to contractor.
2. In case contractor do not fulfil the agreed conditions of payment of 1st mobilization advance, BHEL Construction Manager will have the authority to not allow the 2nd mobilization advance to contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: TAXES AND DUTIES

8.0	TAXES & DUTIES
8.1	<p>The contractor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding GST on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses.</p>
8.2	GST (Goods and Services Tax)
8.2.1	GST as applicable on output supply (goods/services) are excluded from contractor's scope; therefore, contractor's price/rates shall be exclusive of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition.
8.2.2	The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL & its Contractor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL & its Contractor.
8.2.3	Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.
8.2.4	Contractor has to submit GST registration certificate of the concerned state. Contractor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period.
8.2.5	Contractor/Vendor has to issue Invoice/Debit Note/Credit Note indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder.
8.2.6	Vendor has to submit GST compliant invoice within the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts to enable BHEL to meet its GST related compliances. Special care should be taken in case of month end transactions.
8.2.7	Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: TAXES AND DUTIES

8.2.8	<p>Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor: -</p> <ol style="list-style-type: none">a. Supply of goods and/or services have been received by BHEL.b. Original Tax Invoice has been submitted to BHEL.c. Contractor/ Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.d. In cases where e-invoicing provision is applicable, vendor/contractor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.e. Contractor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.f. Respective invoice has appeared in BHEL’s GSTR - 2A for the month corresponding to the month of invoice and in GSTR-2B of the month in which such invoices has been reported by the contractor along with status of ITC availability as “YES” in GSTR-2B. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.g. Contractor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.
8.2.9	<p>Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from contractor’s bill or otherwise as deemed fit.</p>
8.2.10	<p>TDS as applicable under GST law shall be deducted from contractor’s bill.</p>
8.2.11	<p>Contractor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills, road permits etc. required for transportation of goods needs to be arranged by the contractor.</p>
8.2.12	<p>Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.</p>
8.2.13	<p>In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/alterd/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor’s due payment.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: TAXES AND DUTIES

8.2.14	Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.
8.2.15	In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL’s decision shall be final and binding on the contractor.
8.2.16	<p><u>Variation in Taxes & Duties:</u></p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its contactor only and within the contractual delivery period only.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder’s offer but before opening of the price Bid, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.</p>
8.3	<p><u>Income Tax:</u></p> <p>TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from contractor’s bill.</p>

8.4 BOCW Act & Cess Act

8.4.1 BOCW Cess is not to be borne by contractor. Refer Annexure-I for BOCW Act & Cess Act.

Annexure-I:

Bidder may please note that the sub-contractor/bidder of BHEL engaging building or construction worker in connection with building or other construction work, are required to follow the procedures enumerated below:

1.	It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder.
2.	It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: TAXES AND DUTIES

	Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.
3.	It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.
4.	It is responsibility of the contractor to register under the Building and other Construction Workers’ Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may, by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers’ Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager.
5.	It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996.
6.	It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder.
7.	It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees’ Compensation Act, 1923.
8.	<p>It shall be the responsibility of the sub-contractor as employer to make payment/deposit of applicable cess amount on the extent of work involving building or construction workers engaged by the sub-contractor within a period of one month from the receipt of payment. It shall also be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder along with following statistics:</p> <ul style="list-style-type: none"> i) Number of Building Workers employed during preceding one month. ii) Number of Building workers registered as Beneficiary during preceding one month. iii) Disbursement of Wages made to the Building Workers for preceding wage month. iv) Remittance of Contribution of Beneficiaries made during the preceding month

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: TAXES AND DUTIES

9.	BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.
10.	It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers’ Welfare Board in such manner as may be directed by the Board , within the fifteen days from such deduction.
11.	Bidders may please note that though the quoted price is exclusive of BOCW (which will be reimbursed by BHEL as per sub-clause 9 above) , however, If at any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to deduct the applicable cess (1%) on the contract value and penalty (if any, imposed by Cess Authorities) from the payables on account of non-compliance.
12.	The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder.

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Chapter-IX: MATERIALS

9.0	MATERIAL
9.1.	<p>Following Material shall be issued by BHEL (Free of Cost) unless otherwise specified in BOQ cum Rate Schedule:</p> <ol style="list-style-type: none"> a. Cement b. Reinforcement Steel (TMT) and MS Round Bar (Earthing Rod) c. Structural Steel
9.2.	All other materials required for proper completion of job shall be provided by the contractor and is deemed to be inclusive in the quoted price. Contractor's scope also includes following:
9.2.1.	<p>ACCEPTANCE CRITERIA FOR SUB VENDORS FOR ALL CIVIL ITEMS (Except for Cement, Reinforcement steel, Structural Steel materials)</p> <ol style="list-style-type: none"> a. It should confirm to relevant Indian/international Standards. b. It should be of reputed makes supplied to similar construction/ infrastructure projects. c. The Contractor should furnish documentary evidence to prove (a) and (b) above. d. For make / sub vendor for specific civil items, BHEL / Customer's approval shall be final and binding on contractor.
9.2.2.	Furnishing samples of all materials required by the BHEL Engineer for testing/ inspection and approval for use in the works. The samples may be retained by the Engineer for final incorporation in the works.
9.2.3.	Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the BHEL engineer.
9.2.4.	Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
9.2.5.	Contractor shall set up suitable storage facilities for Cement, sand, bolts, aggregate, reinforcement steel, structural steel, foundation bolts, shuttering item, inserts, water proofing material, admixture other BOI's etc. and all are stored properly as per IS recommendation/ technical specifications/ manufacturer recommendation. Wastage due to inadequate storage facilities will be on account of contractor and same shall be replaced by contractor at their own risk & cost without affecting the time schedule for completion of works.
9.2.6.	BHEL free supplies shall be provided only for incorporation in the permanent works of the project.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: MATERIALS

9.2.7.	<p>Embedments/ inserts required for the works in general shall be supplied by the contractor and payment shall be made as per corresponding item in BOQ.</p> <p>If BHEL provides Structural Steel for embedments/ inserts from scraps (if available), payment shall be made as per corresponding item in BOQ. Contractor shall use the scrap materials for embedment/inserts etc. after necessary store issue formalities and shall be accounted for in monthly reconciliation. If BHEL provides fabricated embedments/ inserts as supplied by BHEL manufacturing units, payment for fixing of those shall be made as per corresponding item in BOQ.</p>
9.2.8.	<p>In general, the steel will be issued to the agency in standard lengths. In any instance of supply of non-standard lengths of steel or supply of 8mm, 10mm & 12mm dia. Reinforcement steel in coil form, no extra claims will be entertained against any such issues of Non-standard lengths of steel and de coiling of 8mm, 10mm & 12mm dia. Steel.</p> <p>Areas of work requiring cut to length steel in order to minimize scrap generation and wastage, has to be specifically identified in consultation with BHEL site engineer and contractor shall furnish the requirement to BHEL well in advance of such requirement.</p>
9.2.9.	<p>If any matching sections of steel are not available with BHEL, contractor may arrange these sections from Customer approved suppliers and the landing cost of these sections at site will be reimbursed based on production of supporting documents like Tax invoice, MTC, etc. and any other billing documents as required by BHEL.</p> <p>This Clause shall be operated if required, at the discretion of BHEL.</p>
9.3.	<p>HANDLING OF MATERIAL ISSUED BY BHEL:</p> <p>Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC</p>
9.3.1.	<p>Cement and Steel required for the tender scope shall be procured by BHEL and issued to contractor free of cost as FOC item. However, unloading, handling/ storage of Cement and Reinforcement steel procured by BHEL for this tender scope at site, Contractor’s Stores, issuance of materials from BHEL Stores and further transportation from Stores to work area (including loading and unloading) will be in the scope of contractor. No Extra payment shall be made for this work.</p>
9.3.2.	<p>The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering.</p> <p>a.) The cement shall be provided normally in bulkers and shall be unloaded in the silos to be installed by the contractor nearer to their batching plants. In cement supplies in bags, Contractor shall construct waterproof cement store for storing and stacking of cement issued by BHEL. Cement has to be kept over wooden raised platform. Stacking of cement is to be done as per IS codes with proper illumination and locking arrangements.</p> <p>b.) All TMT shall be stacked diameter wise over sleepers</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: MATERIALS

	Clotting of cement and excessive rusting of steel must be avoided. In case, due to lack of preservation on the part of contractor, rusting of steel (issued by BHEL)/ clotting of cement (issued by BHEL) takes place rendering the same unusable, then cost of such quantity of steel/ cement shall be recovered from the interim payment at the penal rate specified in the tender.
9.3.3.	The contractor shall maintain proper store account for all the BHEL issued materials and shall give Three (03) copies of monthly-computerized reconciliation statement of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. Contractor shall also maintain Cement register and other free issue item register and update on daily basis and share with BHEL.
9.3.4.	The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However, in case of non-availability of any specific material / section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F14) and shall be considered for time extension of contract.
9.3.5.	Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.
9.3.6.	Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.
9.3.7.	The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.
9.3.8.	BHEL reserves the right to recover from the contractor any loss of material issued by BHEL arising out of damage/ theft or any other causes during verification/stacking or at any time under the custody of the contractor.
9.3.9.	BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.
9.4.	ISSUE OF CEMENT
9.4.1.	The cement issued by the BHEL shall be properly accounted (issue and reconciliation). Cement as received from the manufacturer/ stockiest will be issued free of cost to the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: MATERIALS

9.4.2.	The cement shall be provided normally in bulkers and shall be unloaded in the silos to be installed by the contractor nearer to their batching plants. Silos Capacities shall be finalized mutually. Cement unloading arrangements to silo or stores, in case of cement bags and necessary assistance & manpower support shall be provided by the contractor at his own cost.
9.4.3.	On advance request of the contractor, the cement shall be supplied in 50kg tamper proof sealed Bags for other than RCC works like masonry, flooring works, etc. The theoretical weight of each bag of cement for issued purposes will be considered as 50kg, the contractor shall be accountable for the cement issued to the contractor on this notional weight only. No claim whatsoever will be entertained because of difference between theoretical and actual weight of the bags of cement.
9.4.4.	The empty cement bags duly accounted for against issue shall be the contractor's property and the same shall be disposed as per statutory regulation prevailing in the project.
9.4.5.	The contractor shall satisfy himself of the quality and quantity of supplied cement at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
9.4.6.	Contractor will be responsible for sampling and testing of cement as per Indian Standard/ Specification/ approved quality plan in the testing laboratory established by the contractor.
9.4.7.	Contractor will be responsible for unloading the cement as soon as the storage of cement in the weather proof cement storage sheds/ Silo's having dense impervious bituminous or concrete floors which shall be kept swept clean at all times. The storage arrangements shall be fully completed and approved by the owner before any cement is delivered to site. The construction of cement storage sheds as per the requirement of BHEL, unloading of cement bags, stacking properly in the storage sheds, removal of the sheds after the completion of the work are in the scope of contractor. Though the cement is unloaded directly at the contractor storage shed, it will be deemed to be considered that the cement was issued from BHEL stores. Necessary documents are to be submitted by the contractor to the BHEL stores for having received cement.
9.4.8.	No cement will be issued on free basis for bought out item like Hume pipe, Interlocking Paver block, Fly ash brick etc. However, cement for mortar for fixing of these items if required will be issued on free basis.
9.4.9.	The contractor shall submit to the engineer, a statement indicating estimated quantity of cement required during a quarter, at least two months in advance of the quarter. In addition, the contractor shall also furnish the estimated requirement of cement during a month by the third week of the previous month indicating his requirement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: MATERIALS

9.4.10.	One month shall be the limit for the maximum quantity of BHEL issued cement that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).		
9.5.	Issue of Steel Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC		
9.6.	Return of Cement and Steel Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC		
9.7.	Consumption and Wastage of Cement and Steel Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC		
9.8.	Scrap & Serviceable Materials Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC		
9.9.	Reconciliation of Materials Refer Chapter-VI “Material Handling, Storage & Preservation” of SCC		
9.10.	Recovery of Materials (Penal Rates): If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA Bills as per following penal rates (excluding GST):		
9.10.1.	Sl. No.	Materials	Penal Rate (Rs.)
	1	Cement (PPC)	5,500/- per MT
	2	Cement (OPC)	6,500/- per MT
	3	Reinforcement Steel / Earthing Rod	60,000/- per MT
	4	Structural Steel (Plates, Rolled Sections etc.)	70,000/- per MT
	5	Anchor / Foundation Bolts	1,00,000/- per MT
9.10.2.	Penal Rate will be 1.05 times the actual cost to BHEL or Rate mentioned in above Table, whichever is higher, shall be imposed.		

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X: BILL OF QUANTITIES AND % WEIGHTAGE OF INDIVIDUAL ITEMS

10.0	BILL OF QUANTITIES AND % WEIGHTAGE OF INDIVIDUAL ITEMS	
10.1.	This Chapter consists of Part A & Part B of Volume II “Price bid”:	
	<u>CONTENTS</u>	
	Description	Remarks
	PART A: Instructions to the Bidders	Instructions
	PART B: % weightage for amount of individual items of Schedule of quantity	BOQ Cum Rate Schedule
	PART C: Total Price for entire scope of Work	This part is implanted in the E-Procurement portal entitled as “Part-C of Vol-II Price Bid”.

<u>Part A:</u>	<u>Instructions to the Bidders</u>
1.	<u>Bidders to quote Total Price for the entire scope of work in Rupees in VOL II PRICE BID at BHEL E-procurement Portal.</u> Any other entry elsewhere in the offer of the bidder shall be treated as Null and Void. The total value shall be automatically calculated on E-portal.
2.	BHEL has fixed the weightages as in “Part-B” for the amount of individual items of BOQ Cum Rate Schedule w.r.t. the total price of Price Bid Vol-II.
3.	Based on the pre-fixed weightages, amount of individual items shall be derived by BHEL. This amount shall not be rounded off.
4.	Based on the quantities of individual item and the amount arrived in Sl. No. 4 above, item rate of individual items shall be derived by BHEL. This item rate shall be rounded off up to three decimal places and shall be used to calculate the total amount of an item.
5.	Bidders to note that this is an ‘ <u>Item rate contract</u> ’. Payment shall be made for the actual quantities of work executed at the Unit rate arrived at as per serial no. 5 above.
<u>PART B:</u>	Weightage for amount of individual items of BOQ CUM RATE SCHEDULE w.r.t. the total price (as quoted by the bidder in “Part C of Vol-II-Price Bid”)- attached as Annexure A. Quantities w.r.t. Package I, Package II and Package III are attached as Annexure-B

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Chapter-XI: TECHNICAL SPECIFICATIONS AND DRAWINGS

11.0	<p>TECHNICAL SPECIFICATIONS AND DRAWINGS</p> <p>Following Technical Specifications shall be integral parts of this tender (attached separately):</p> <ul style="list-style-type: none">• Customer Technical Specification for the specific project shall be applicable and it shall be provided along with Work Order for that project.• SECTION-D: General Technical Specifications• HSE plan <p>NOTES:</p> <ul style="list-style-type: none">• Above documents have been uploaded Separately.
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TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-XII: ANNEXURES

12.0	<p>Following Annexures shall be integral parts of this tender (attached separately):</p> <ul style="list-style-type: none">• Annexure-A: Standard Guidelines for Worker’s Accommodation / Establishments at BHEL-Project Sites <p>NOTES:</p> <ul style="list-style-type: none">• Above documents have been uploaded Separately.
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Annexure A

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

Annexure A

PROJECT: Various project sites of BHEL across India						
BOQ CUM RATE SCHEDULE (PRICE BID)						
SCOPE OF WORK:-						
Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India						
ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.					
A101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	87500.00			0.5771479224
b	Depth exceeding 2 m but not exceeding 4 m	CUM	52500.00			0.4340784974
c	Depth exceeding 4 m but not exceeding 6 m	CUM	17500.00			0.1808642841
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10500.00			0.1357633704
e	Depth exceeding 8 m but not exceeding 10 m	CUM	3500.00			0.0543360567
f	Depth exceeding 10 m but not exceeding 15 m	CUM	3500.00			0.0624981256
A102	Extra over ST No. A101, A103, A105 & A106 for dewatering of ground water by sump pump method as per IS 9759.Ground water table shall be lowered up to 1 m below the founding level to make the site workable for foundation construction till backfilling up to ground level. Mode of measurement shall be the quantity of excavation of soil including ash below ground water table to founding level of the footing.	CUM	50000.00			0.7356050905
B102	Removal of slush / muck from excavated pit, trenches or foundations, including collection, loading, transportation, unloading and disposal of the same to designated disposal area within a lead upto 1Km, complete in all respects as per directions of Engineer-in-Charge.	CUM	5000.00			0.0695696232
A103	Earth work in excavation 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 including setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	10000.00			0.0978251684
b	Depth exceeding 2 m but not exceeding 4 m	CUM	30000.00			0.3521477124
c	Depth exceeding 4 m but not exceeding 6 m	CUM	20000.00			0.2817173670
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10000.00			0.1690321742
e	Depth exceeding 8 m but not exceeding 10 m	CUM	4000.00			0.0777540353
f	Depth exceeding 10 m but not exceeding 15 m	CUM	400.00			0.0085528873
A105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	1000.00			0.0323893546

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
b	Depth exceeding 2 m but not exceeding 4 m	CUM	5000.00			0.1944014516
c	Depth exceeding 4 m but not exceeding 6 m	CUM	7500.00			0.3437606400
d	Depth exceeding 6 m but not exceeding 8 m	CUM	5000.00			0.2749979632
e	Depth exceeding 8 m but not exceeding 10 m	CUM	2500.00			0.1580358162
A106	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, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1000.00			0.0484852487
d	Depth exceeding 6 m but not exceeding 8 m	CUM	500.00			0.0290912342
e	Depth exceeding 8 m but not exceeding 10 m	CUM	500.00			0.0334547364
f	Depth exceeding 10 m but not exceeding 15 m	CUM				
A107	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 250mm/300mm thickness 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 90% maximum dry density as per IS-2720 (Part-VII)	CUM	26250.00			0.1790821602
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	8750.00			0.0656634587
A108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250mm/300mm thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	39375.00			0.2283293590
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	26250.00			0.1674415299
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.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	52500.00			0.0456397067
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	45000.00			0.0391197486
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 available within a lead of 10 Kms (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorowed 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, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer. Note: carriage of borrowed soil shall be payable as per BOQ Item No. 109a beyond an initial lead of 10 km.	CUM	5000.00			0.1245056880

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 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	8750.00			1.2554221913
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Cement shall be issued by BHEL free of cost unless otherwise mentioned in the BOQ Cum Rate Schedule)					
A201	Providing, transportation and placing Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	4375.00			1.3986311157
B201	Transportation and Placing Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	1093.75			0.1048973337
A202	Providing, transportation and placing Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	1750.00			0.5594524463
B202	Transportation and Placing Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	437.50			0.0419589335
A203	Providing, transportation and placing Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors,plinth protection etc. complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	7000.00			2.2378097859
B203	Transportation and Placing Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors,plinth protection etc. complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	1750.00			0.1678357339

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
A204	Providng, transportation and placing Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224).	CUM	3500.00			1.1189048928
B204	Transportation and Placing Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224). NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	875.00			0.0839178670
A205	Providing, transportation and placing Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, trenches, under floors, duct banks etc for any shape, position or thickness etc complete all including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete complete as per specification & drawing below finished ground level upto a depth of 10m from FGL (For depths greater than 10m from FGL, extra over for additional depth to be paid in Item No A224), for the following.					
a	M 25 Grade	CUM	26250.00			8.6730382542
b	M 30 Grade	CUM	13125.00			4.3581714831
B205	Transportation and Placing Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, trenches, under floors, duct banks etc for any shape, position or thickness etc complete below finished ground level upto a depth of 10m from FGL including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depths greater than 10m from FGL, extra over for additional depth to be paid in Item No A224), for the following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	M 25 Grade	CUM	6562.50			0.6293840022
b	M 30 Grade	CUM	3281.25			0.3146920011
A206	Providing, transportation and placing Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing upto 10m level above finished floor level of ground floor (For height greater than 10m from FFL of ground floor, extra over for additional height to be paid in Item No A225), for the following.					
a	M 25 Grade	CUM	17500.00			5.9357372416
b	M 30 Grade	CUM	8750.00			2.9823035239

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
B206	Transportation and Placing Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete upto 10m level above finished floor level of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For height greater than 10m from FFL of ground floor, extra over for additional height to be paid in Item No A225), for the following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	M 25 Grade	CUM	4375.00			0.4451802931
b	M 30 Grade	CUM	2187.50			0.2225901466
A209	Extra over St. No. A205 & A206 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	1000.00			0.0962253254
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					
b	M 25	CUM	175.00			0.0559454554
A211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
b	M 25	CUM	43.75			0.0041958933
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following.					
a	0.043101852	CUM	1312.50			0.4195909155
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	0.043101852	CUM	350.00			0.0436372908
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 precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.					
b	M30	CUM	262.50			0.1430137421
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.					
b	M30	CUM	13125.00			4.6867213771

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.					
a	Plain cement concrete of all grades	CUM	100.00			0.0082845594
b	Reinforced cement concrete of all grades	CUM	100.00			0.0127306568
222	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	25.00			0.0001331743
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	100.00			0.0196514602
A224	Extra over item no. A201 to A205 and A214 for depth below FFL of ground floor (Finished Floor Level of ground floor) as per following:					
a	Depth exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	250.00			0.0059631273
A225	Extra over item no. A206 and A212 for height above FFL of ground floor (Finished Floor Level of ground floor) as per following:					
a	Height exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	1000.00			0.0298268644
b	Height exceeding 20m from FFL of ground floor but not exceeding 30m	CUM	1000.00			0.0536791730
c	Height exceeding 30m from FFL of ground floor but not exceeding 40m	CUM	1000.00			0.0715794080
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.					
A301	Fairface form work with good quality water proof ply wood with Filmface of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc. including chamfering of edges as per drawing, specification and instruction of engineer in charge.					
a	Upto Depth 10m From FGL	SQM	65625.00			3.0147474667
b	Depth exceeding 10m From FGL	SQM	437.50			0.0221210403
B301	Only Fixing of already manufactured Formwork: Fairface form work with good quality water proof ply wood with Filmface of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc. including chamfering of edges as per drawing, specification and instruction of engineer in charge. (The manufactured formwork shall be issued by BHEL free of cost and agency shall return the formwork(scrap plus usable material) to BHEL store after use)	SQM	500.00			0.0096501387
A302	Fairface form work with good quality water proof ply wood with Film face of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended/intermediate floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.					
a	For Height Upto 20m from FGL	SQM	83125.00			4.5894803593
b	For Height More Than 20m from FGL	SQM	4375.00			0.2677401678
B303	Removing formwork at all elevations for all structures including all labour, specifications and as per direction of engineer in charge	SQM	5000.00			0.0665346667

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
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	100.00			0.0016539081
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	50.00			0.0013574860
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	25.00			0.0011919851
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	25.00			0.0018501154
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	25.00			0.0026484560
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	25.00			0.0034906431
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.					
a	Extra for Curve Shuttering for Item No. 301	SQM	25.00			0.0002301428
b	Extra for Curve Shuttering for Item No. 302	SQM	25.00			0.0002758380
A305	Erecting, maintaining and dismantling scaffolding arrangement of required height and configuration using MS/GI pipes, couplers, clamps, joints, base plates, braces, planks, ladders, safety rails and all other necessary accessories, complete in all respects, to enable execution of civil works at site, as per drawings, specifications and directions of Engineer-in-Charge. (Ownership of scaffolding materials lies with contractor) Payment Breakup: a) Supply & Receipt of material at site - 50% b) Execution & Services Associated with the item - 40% c) Dismantling - 10%	Cum	5000.00			0.0678985070
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:					
401	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 & from stores etc. all complete as per specifications & drawings. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	25.00			0.1417918123
A403	Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer. (BHEL to issue steel free of cost)	MT	10500.00			8.3016784265
B403	Horizontal steel R/F or Stirrups are required to be fixed over already fixed Vertical R/F: Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer for the following. (BHEL to issue steel free of cost)					
a	Fixing and binding in position at any level of exposed vertical steel R/F already erected.	MT	250.00			0.0790636041
b	Fixing and binding in position at any level of Horizontal steel R/F or Stirrups.	MT	250.00			0.1976590102

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
C403	R/F Steel available in the form of Curtailed and Bended Conditions as per BBS at existing vendor works: Transportation, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from vendor stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer. (BHEL to issue the fabricated rebar R/F steel as per approved BBS free of cost)	MT	250.00			0.1284783566
D403	Dismantling of already fixed reinforcement steel in position, loading, transportation to designated scrap yard, unloading, etc. complete as per direction of engineer.	MT	250.00			0.0494147525
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. A403.					
a	12mm Reinforcement bar	Nos.	25.00			0.0010593470
b	16mm Reinforcement bar	Nos.	25.00			0.0017224920
c	20mm Reinforcement bar	Nos.	25.00			0.0024965274
d	25mm Reinforcement bar	Nos.	25.00			0.0033799432
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge.(Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same).					
511	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	2500.00			0.0409651358
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.					
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	12 mm wide joints.	SQM	100.00			0.0042351829
b	20 mm wide joints	SQM	500.00			0.0254002523
c	25 mm wide joints	SQM	500.00			0.0369353622
d	50 mm wide joints	SQM	100.00			0.0153829048
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	25mmX25mm	RM	100.00			0.0035410611
b	50mmX25mm	RM	100.00			0.0065286622
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.					

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ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
a	10mm X 40mm	RM	500.00			0.0022831612
b	12mm X 25mm	RM	500.00			0.0019838460
c	20mmX25mm	RM	500.00			0.0025855880
A605	Supply and installation of Polystyrene flexible board conforming to IS 4671 (type-1), 20 Kg/ Cum. as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /butimen etc. all complete.					
a	100 mm thick	SQM	1000.00			0.1531897630
A610	Providing and fixing ribbed PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
b	230 mm wide and 8 mm thick	RM	100.00			0.0033080021
Ab	230 mm wide and 10 mm thick	RM	100.00			0.0038041954
c	150 mm wide and 6 mm thick	RM	100.00			0.0015313743
d	230 mm wide and 6 mm thick	RM	100.00			0.0023360789
615	Providing and fixing 300 mm wide Stainless steel strips (Grade SS 316) over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.	Kg	150.00			0.0065568852
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
701	Supply, fabricating and fixing/erection of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	25.00			0.1822505805
702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	50.00			0.4494380019
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	25.00			0.0445816272
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	75.00			0.1402521514
704	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.					
a	MS pipes of all diameters	kg	175.00			0.0013028404
b	PVC pipes / conduits of all diameters	kg	550.00			0.0138045843
c	UPVC pipes / conduits of all diameters	kg	75.00			0.0023723048
d	Expansion anchor fasteners (galvanised) of HILTI make(HRD Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	8mm Dia	Nos	100.00			0.0003343742
ii	10mm Dia	Nos	100.00			0.0004302048
iii	12mm Dia	Nos	100.00			0.0005327000

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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	HST3 M8	Nos	10.00			0.0001838940
ii	HST3 M10	Nos	10.00			0.0002543317
iii	HST3 M12	Nos	10.00			0.0004580640
iv	HST3 M16	Nos	10.00			0.0008062445
v	HST3 M20	Nos	10.00			0.0014007251
vi	HST3 M24	Nos	10.00			0.0028012587
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	10.00			0.0003591005
ii	HAS-E5.8 M10	Nos	10.00			0.0004384505
iii	HAS-E5.8 M12	Nos	10.00			0.0005594917
iv	HAS-E5.8 M16	Nos	10.00			0.0009491241
v	HAS-E5.8 M20	Nos	10.00			0.0014836653
vi	HAS-E5.8 M24	Nos	10.00			0.0020440553
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.					
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	10.00			0.0005949527
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete.	CUM	10.00			0.0169258475
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	100.00			0.1680156148
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	200.00			0.6434429997
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 Conbextra GP-2 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	100.00			0.3266192448
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete. Payment shall be made as per the consumption of chemical grout.	Kg	100.00			0.0124212192
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

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902	Providing and fixing teak wood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	15.00			0.0082483200
903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00			0.0253065902
904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continuous pressed steel channel with min 18G, shop and final painting etc all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	150.00			0.1437703392
A904	Providing and fixing single or double steel door shutters with 35mm (min) thk flush design shutter comprising of two outer sheets of 16 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 18 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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	250.00			0.2393352912

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A905	<p>Providing and fixing electrically operated, self operable/closing 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 (Grade of Aluminium shall be Alloy 63400) and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures,Dorma, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. Weight of aluminium section only shall be measured. (Glazing shall be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	20.00			0.0212065302
A906	<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 2 mm wall thickness as per IS:1285, IS:733,(Grade of Aluminium shall be Alloy 63400) and anodized (15 micron coating thickness) and electro color dyed of required shade as per IS 1868 (minimum anodized coating of grade AC15) fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear toughened glass of 8/10 mm thickness including snap fit type beading, concealed screws, fixtures, Dorma,Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door - 25% c) Execution & Services Associated with the item - 25%</p>	KG	5000.00			0.2427168266
908	<p>Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting, glazing etc. all complete. (Glazing shall be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of steel section for making windows/ventilators - 25% c) Execution & Services Associated with the item - 25%</p>					
a	Openable type	SQM	200.00			0.0394053940
b	fixed type	SQM	150.00			0.0189381655

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A909	<p>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(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/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. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door frame, windows, ventilators, partitions, etc. - 25% c) Execution & Services Associated with the item - 25%</p>	Kg	25000.00			1.4259101972
B909	<p>Providing and fixing 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(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) powder coated to required shade (minimum thickness of powder coating 50 micron), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/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. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door frame, windows, ventilators, partitions, etc. - 25% c) Execution & Services Associated with the item - 25%</p>	Kg	20000.00			1.0370255980

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A910	<p>Providing, fabricating, designing, supplying and fixing of Aluminium composite panel cladding (ACP) in pan shape in solid or metallic colour, wooden colour, stone finish of approved shades made out of 4mm thick aluminium composite panel (weight of panel should be minimum 8.1 kg/sqmt) material consisting of 3mm thick FR grade Class A2 as per EN 13501, mineral core sandwiched between two Aluminium sheets (each 0.5mm thick BMT). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF conforming to AAMA 2605 or Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. The top coated surface of ACP shall comply with the "specification for coated coil for the exterior building application" issued by ECCA (European Coil Coating Association). The aluminium composite panel top and bottom skin should conform to Aluminium Alloy 5005 (AIMg 1) marine grade series and H 22/24 temper with mechanical properties confirming to EN 485-2 standard. The ACP product must conform to Class A2, s1,d0 as per EN-13501-1. The manufacturer must furnish the FPC and Certificate of conformity of EN13501-1 for Class A2, s1,d0 from the certifiers and Product must be supplied from the Certified Unit which has been mentioned on the FPC and COC. The panel shall be designed for 12mm groove in horizontal & in verticals with close joint system. Vertical & Horizontal groove shall be filled by non-staining high performance weather sealant. ACP panel shall have sub frame all around panel and aluminium stiffener profile as per structural requirements. The finished surface of ACP shall be protected with a self-adhesive (Rubber based) peel off foil with 70 microns thickness white or black, tested to withstand up to 6 months' exposure to local weather condition without losing the original peel off characteristic or causing stain or other damages on the coated surface of the aluminium composite panel. Installation of ACP Copping/ fascia at terrace level sealing the top gap of the parapet wall and ACP Panel shall have GI stiffeners below with required aluminium grid work with necessary MS HDG / aluminium alloy brackets & SS fasteners. 2nd barrier of 1mm thk GI sheet laid continuously below the copping to seal the parapet wall. Overlap of GI sheet shall be properly sealed with weather sealant, All shade shall be as per Architect's Approval. as per approved sample from Alucobond Plus, Aludecor, Alubond, Virgo or equivalent.</p>	SQM	10000.00			3.5165254266
A910 cont.	<p>The system shall be designed to withstand a wind pressure of 200kg/Sqm or as per design requirement and shall be fixed to the Masonry/RC walls or aluminium frame with necessary clamps, brackets and anchor fasteners etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any other festering straps, nuts, bolts, rivets, washers, etc. shall be in stainless steel SS316 grade. EPDM gaskets, open cell polyethylene backer rods, weather sealant etc. shall be provided as per requirement. Item shall include aluminium base frame with all fixing arrangements to wall/RC members, fastening material and hardware (festering straps, nuts, bolts, rivets, washers etc.), EPDM gaskets, open cell polyethylene backer rods, weather sealant, scaffolding, approach to all height, material handling, transportation, labour, T&P, preparation of working drawings etc. all complete as per drawing, specification & instructions of engineer in charge. Measurement of payment shall be outer finished area of ACP panel. The contractor shall provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturer of ACP.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>					
911	Providing and fixing of door closers as per IS 3564 .of approved make & quality all complete of following type :					
a	Over head hydraulic door closures	Each	50.00			0.0072030711
b	Floor mounted Hydraulic door closers	Each	50.00			0.0152043805

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A912	Providing and fixing pressed steel frames(complying general requirements of IS 4351) fabricated from 1.6 mm thick M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications. Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of steel section for making frames - 25% c) Execution & Services Associated with the item - 25%	Kg	10000.00			0.1290614677
A913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides of 75mm wide and 3mm thick(min.) and arrangements for inside and outside locking with push and pull operation including wire springs, top/hood cover 0.9mm thick (min.) , factory galvanized, primed & field painted, partly grilled (as required) with 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). Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	Mechanically Operated	SQM	250.00			0.0777442182
c	Electrically & Mechanically operated	SQM	1000.00			0.3981116676
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00			0.0098870552
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
Ab	4 mm thick plain or tinted float glass	SQM	50.00			0.0058447924
d	6 mm thick wired glass	SQM	1000.00			0.1373222459
Ae	3mm thick Polycarbonate sheet with profile matching with metal sheeting shall be provided. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 1000C. Suitable aluminium beading shall be used. The open ends of the sheet shall be sealed as per manufacturer's recommendations .	SQM	250.00			0.0361610623
Ag	6 mm thick tinted heat reflecting toughened type float glass	SQM	100.00			0.0154605406
h	6 mm thick clear toughened safety glass	SQM	100.00			0.0163743605
h(a)	6 mm thick clear reflective toughened safety glass of Saint Gobain(India) or Asahi (India) or equivalent make and should have solar factor 25% or less, Maximum U-value 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28),values varies as per manufacturer specifications.	SQM	1000.00			0.2038448515
Ah	6 mm thick clear toughened glass conforming to IS 2553.	SQM	2000.00			0.3271675472
AhB	8 mm thick clear toughened glass	SQM	250.00			0.0529996072
AhC	8 mm thick clear toughened fire resistant glass	SQM	175.00			0.1732856856

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	300.00			0.0841074982
I(a)	composite double glazing, 25 mm thick 2 hr fire rated, with one outer 6 mm thick tinted heat-reflecting type toughened glass and one inner 11mm thick clear toughened glass hermetically sealed and seperated by 8 mm thick gap for thermal insulation (only single elevation area to be measured) with suitable frame of min 1.6mm galvenised steel sheet. The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	100.00			0.1947401168
I(b)	composite double glazing of fire resistant glass MIN.30 mm thick Hermetically sealed double glazed unit of one Fire resistant glass of min.14mm thick (outer side) clear, toughened, interlayered glass with 120 minute fire rated for both integrity & radiation control (EW 120) with symmetrical (Bi-Directional) fire protection and 6 mm thick toughened tinted glass (Inner side) with 10 mm air gap etc all complete as per specification.	SQM	100.00			0.2046421471
I(c)	One outer 6mm thick tinted heat-reflecting toughened glass and one inner 6mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) ≥62 %, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) 0.2 ≤ 0.32 and U- Value 1.2 TO 2.5 W/MSq K,The properties of performance glass shall be as per detail design values as approved by engineer incharge.The glass to be used should be from the approved manufacturers of glass and should be free from distortion and thermal stress.	SQM	250.00			0.5356499567
I(d)	Fire rated glass min.14mm thick fire resistant clear, toughened, interlayered clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass complying to BS476 Part22 or (EN-1634-1 :1999) with a light transmission of 86% according to EN410 standards and sound reduction of >=37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4 The glass shall provide bidirectional (Symmetrical) fire protection. as per specification and instruction of engineer in charge.	SQM	350.00			0.7624570589
An	8 mm thick laminated toughened glass	SQM	150.00			0.0327422620
Aq	6mm thick laquered glass as per approved shade colour and design.	SQM	25.00			0.0048021970
Ar	Heat Strengthened Coloured tinted float glass 6mm thick substrate with reflective soft coating on outer face+12mm Airgap + 6mm Heat Strengthened clear Glass of approved make, having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 1.5 to 1.7W/ m2 degree K etc. The properties of performance glass may varies as per decided by technical sanctioning authority as per the site requirement.	SQM	50.00			0.0179444063
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	1050.00			0.1183337464
919	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	50.00			0.0187677716

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A920	Providing and erecting Roof skylight structure with 4mm thick embossed clear translucent polycarbonate IR sheet, both side UV coated, minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated Aluminium section with 60mm width top & bottom with EPDM rubber gasket in approved shape like dome, pyramidal etc, sealing of joints with sealent, screws with pvc cap, self tapping screws, EPDM rubber gasket etc as per drawing, standards, specification, instruction of engineer in charge etc all complete.(Structural Steel will be paid separately) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	500.00			0.0930261733
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.					
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	875.00			0.3948721356
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	3500.00			1.9936256480
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	175.00			0.0122217431
1014	Extra over item no. 1002 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	CUM	150.00			0.0085257198
b	Height exceeding 20m from FGL but not exceeding 30m	CUM	50.00			0.0051143152
c	Height exceeding 30m from FGL but not exceeding 40m	CUM	25.00			0.0034102948
1015	Extra over item no. 1003 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	SQM	100.00			0.0003677925
b	Height exceeding 20m from FGL but not exceeding 30m	SQM	50.00			0.0003310233
c	Height exceeding 30m from FGL but not exceeding 40m	SQM	25.00			0.0002206805
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					
1101	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	500.00			0.0147286892
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					

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1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	14000.00			0.4048165064
1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	26250.00			0.6361751918
1207	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	500.00			0.0013487689
1208	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (chicken wire mesh to be paid separately)	SQM	875.00			0.0417405108
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
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	200.00			0.0005572187
A1304	Two or more coats of Low VOC (volatile organic compound, less than 50g/L) acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge	SQM	12500.00			0.1025607955
1305	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	1500.00			0.0164454760
A1305	Providing and applying two or more coats of low VOC (volatile organic compound) acrylic emulsion paint as per IS 15489, relevant latest code 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. Note: The paint should have VOC content limit less than 50 grams per litre. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	5000.00			0.0579144996
A1306	Providing and applying 2 or more coats of oil resistant paint(epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	1500.00			0.0289362930
B1306	Providing and applying 2 or more coats of acid/alkali resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	1400.00			0.0360096090
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	100.00			0.0017620548

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1308	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, inclusive of intermediate coat of Titanium dioxide / micaeous iron oxide complete as per specifications.	SQM	100.00			0.0015674555
1309	Two or more coats of fire resistant transparent paint (@3.5 sqm per litre per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made seperately.	SQM	100.00			0.0034730755
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete. Note: The paint should have VOC content limit less than 150 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	100.00			0.0015001689
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	1250.00			0.0103093210
A1313	Providing and applying ready made Epoxy Paint over areas other than steel structure/flooring with suitable pigments of approved shade as per specification and direction of Engineer. Epoxy Painting shall be provided with surface preparation of concrete substrate with Captive Shot Blasting Machine OR Light Grinding to form the required anchor profile on the floor substrate followed by application of epoxy resin based moisture barrier underlay of 2 mm thickness including filling of saw cut joints with epoxy cementitious resin based moisture barrier underlay as per manufacturer specification. Application of self smoothing epoxy floor topping of epoxy based resin of 2 mm thickness over epoxy resin based moisture barrier underlay including application of solvent free epoxy resin based two component primer shall include application of PU Sealant at Expansion and Isolation Joint respectively including surface preparation of the joint, fixing of backup strip and application of sealant etc all complete as per specification. The epoxy coating shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 4 mm thickness.	SQM	500.00			0.0280969093
A1314	Providing and applying resin bonded granular textured finish,shall consist of crushed stone/special quality Silica quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, acrylic modified exterior adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film nominal thickness of 2.5 mm from approved manufacturer Asian ,Luxture, Berger or equivalent.The final finished coating shall be fungus resistant, UV resistant, water resistant & repellent and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	75.00			0.0065637630
A1315	Providing and applying three coats of Solvent based (100% pure acrylic co-polymer resin based) paint (shall not contain any water sensitive ingredients)of approved brand and manufacture and required shade over one coat of primer or one coat of cement paint after necessary cleaning/ washing, removing loose & flaking materials, removing mould, algae, organic growth & grease, preparing the surface using coir brush/ wire brush, sand paper, including all required tools, material, scaffolding and other painting accessories, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish. The final finished coating shall be fungus resistant, UV resistant, water resistant & repellent and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	75.00			0.0029688160

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A1317	Providing and applying 2 mm thick Acrylic wall putty punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	25000.00			0.2293102356
A1319	Providing and applying two or more coats of weather coat paint of Premium Acrylic Smooth Paint with Silicone additives, over and including Texture base coat, of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification. Textured base coat (Two or more coats applied @ 6.5Kg/10 sqm over and including priming coat of exterior primer applied @ 2.20Kg/10 sqm) of High Quality Exterior Acrylic Modified resin and special quality Silica Quartz with Trowel Texture (Asian / Dulux / Nerolac / Berger / Equivalent as per selection).	SQM	12500.00			0.1430228887
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2(1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges etc. all complete The ratio of approved quality metallic hardening compound and cement shall be 1:4.(Quoted item rate shall be inclusive of providing glass joint strips).	SQM	7500.00			0.3379332807
B1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with non- metallic hardener pigmented topping 12mm thick uniform graded hardener in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick hardener concrete of mix 1:2(1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including as per manufacturer specification, cement slurry, rounding off edges etc. all complete.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification. (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	15000.00			0.6758695725
A1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, etc. all complete as per specification.The ratio of approved quality metallic hardening compound and cement shall be 1: 4.	SQM	100.00			0.0037585361

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B1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with Non-metallic hardener pigmented topping of 10 mm thick uniform graded in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick with hardener concrete of mix 1:2 (1 cement hardner mix with approved quality hardening compound :2 stone aggregate 6mm nominal size) by volume as per manufacturer specification including,cement slurry, rounding off edges etc. all complete as per specification.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification.	SQM	500.00			0.0187926804
C1402	Providing and laying 25 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with 10 mm thick uniform graded particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick cement mortar 1:2 (1 cement :2 sand) by volume including cement slurry, rounding off edges etc. all complete as per specification.	SQM	100.00			0.0035705942
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum/quartz chips topping pigment content is 3.5 kg per 50 Kg of white Cement) of size 300X300X25mm thick of approved shade as per IS 1237, including minimum 20mm cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc.(inclusive of cost of cement for tiles manufacturing) all complete for following: Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	Laid in floors	SQM	2500.00			0.2366066687
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 20mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	80mm	SQM	2500.00			0.1801927012
1410	Marble stone Flooring laid in 50mm overall thickness with 18-20mm thick marble slabs (grade -1) with minium 30mm 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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00			0.0137619378

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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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	750.00			0.2224525555
A1412	Providing and laying 20mm thick Mirror polished (6 layers of polish)/Flame finish (making top surface rough by burning / shot blasting)Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 1.5 sand : 3 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, moulding, cornice, curing, grinding, granite polishing etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	250.00			0.0784470762
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	10mm thick tiles In flooring	SQM	300.00			0.0297260501
B1416	Providing and laying heavy duty Antiskid full body vitrified tiles 18-20 mm thick of size 600x600mm in flooring, of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent ,complete including underbed of cement mortar 1:3 minimum 30mm thick for flooring with neat cement slurry @3.3Kg/sqm etc.all complete. Full body Vitrified Tiles shall be laid on properly laid levelled floor, with joints 3 to 5mm wide & 8 to 10mm deep & shall be filled with approved Epoxy Grout mix of 0.70kg of organic coated filler of desired shade (0.10kg of hardener and 0.20kg of resin per kg). Full body Vitrified Tiles shall have water absorption less than 0.5%, Modulus of Rupture more than 38N/mm2, Breaking strength more than 7500N, Moh's scale more than 6, Abrasion resistance less than 144 mm3 and coefficient of friction more than 0.4. Vitrified Tiles shall generally conform to IS: 15622. All complete (including cost of epoxy grouting)as per engineer incharge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	3500.00			0.7175920771

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D1416	Providing and laying matt finish vitrified ceramic tiles of polished variety of size 600x600 / 800x800 of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo, Varmora or equivalent, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc., 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	9.0 mm (min.) thick tiles In flooring	SQM	1000.00			0.1003148291
b	9.0 mm (min.) thick tiles In dado	SQM	250.00			0.0262085056
1417	Providing and laying vitrified ceramic tiles of matt finish of size 600x600mm 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:- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
d	10mm thick tiles In skirting and dado upto specific height	SQM	75.00			0.0085406916
A1417	Providing and laying Digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer complete including minimum 40 mm thick underbed of cement mortar 1:4 for flooring and 12mm thick underbed of cement mortar 1:3 for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following:- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	9.00 mm (min.) thick tiles In flooring	SQM	2500.00			0.2665050666
d	9.00 mm (min.) thick tiles In skirting and dado upto specific height	SQM	100.00			0.0111300259
B1417	Providing and laying vitrified ceramic tiles of matt finish variety of size 1000X1000 from reputed / approved manufacturer, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	9.5 mm thick tiles In flooring	SQM	750.00			0.1089224069
C1417	Providing and laying vitrified ceramic tiles of matt finish polished variety of size 1000X1000 from reputed / approved manufacturer Simpolo, Varmora or equivalent, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4 mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	10 mm thick tiles In flooring	SQM	150.00			0.0220955831

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c	10 mm thick tiles In skirting and dado upto specific height	SQM	50.00			0.0077013245
A1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of approved manufacturer simpolo, varmora 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 :- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	600X600 mm	SQM	350.00			0.0392311636
1419	Providing and laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00			0.0186290657
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	300X300 mm	SQM	50.00			0.0038390746
A1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick Designer glazed/matt finish of reputed manufacturer Simpolo,varmora or equivalent of approved finish shade and colour on walls, skirting etc.including 20 mm underbed of cement mortar 1:4 in flooring and cement mortar of 1: 3 for skirting/dado with neat cement slurry etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	300X300 mm	SQM	250.00			0.0205913108
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles comply to IS:4457 and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied in flooring/Dado of reputed / approved manufacturer Simpolo,varmora,Naya Rangoli or equivalent of approved finish, shade and colour with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing, pointing joint of bedding 20mm deepx6mm wide with epoxy/Furane mortar etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	20mm thick	SQM	1000.00			0.2176674584

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B1424	<p>Providing & fixing chemical resistant (AR)(Acid / Alkali) tiles (75mm thick) conforming to IS:4457 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by min.12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR tiles shall be filled with resin type mortar of reputed / approved manufacturer Naya Rangoli,Berger or equivalent conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00			0.0466805752
C1424	<p>Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115 mm thick) conforming to IS:4860 in the walls of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type mortar of reputed / approved manufacturer Naya Rangoli,Berger or equivalent conforming to IS:4832, part II, of seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00			0.0599898469
A1425	<p>Providing and laying polished Marble slabs (rajnagar plain white or equivalent approved shade/color /design) 20 mm thk in staircase landing/skirting and corridors over minimum 30 mm thick underbed of 1 cement : 1.5 sand : 3 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded marbel nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00			0.1765839005
1426	<p>Providing and laying marble skirting /dado (Approved shade/color /design) equivalent of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed 20mm cement mortar 1:3, with thick cement slurry 3.3kg/sqm spread over the surface scaffolding etc. all complete.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	20.00			0.0065937921

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A1427	<p>Providing and fixing Designer digitally glazed ceramic tiles of approved color and design as per IS: 15622 of size 300x300mm / 300x450mm, 300X600 of reputed / approved manufacturer Simpolo, varmora or equivalent of approved finish, size in dado, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1 part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete as instructed by engineer incharge for following thicknesses.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>					
a	5mm thick	SQM	350.00			0.0263917847
b	7mm thick	SQM	350.00			0.0289432879
A1428	<p>Providing and laying 2mm thick heavy duty antistatic PVC(Virgin) tile in flooring / skirting of approved shade, from reputed / approved manufacturer Naya Rangoli, robina or equivalent as per IS:3462 and laying as per IS:5318 all complete as per specifications.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00			0.0047183025
A1429	<p>Providing and fixing Removable type flooring system (raised access floor) consisting of fire resistant Cementitious panels of 600 x 600x 35 mm and Laminated with 1.2 mm thick fire retardant food grade antistatic laminate top finish to ensure max bonding to the steel surface. Cementitious panels shall be steel welded construction, with an enclosed bottom pan of 64 hemispherical and top plain sheet which are fuse welded at multiple location to form a panel. The panel is coated with 40-60-micron epoxy coat after cleaning, de-greasing, phosphate by several tank processes & is heated to achieve max adhesion to the panel surface & corrosion resistance. The inner empty core of the panel is injected with a light weight fire retardant, non-combustible cementitious compound at high pressure to fill in all the crevices of the panel and ensures support of not less than 90% of the top surface area of the panel. Pedestal (300mm - 800 mm) must be 25mm dia. pipe with min.2.0 mm thickness with bottom plate of 100x100x min.2.0mm thick & top plate must be 75x75x3.0 mm. All pedestal shall be tightening to Stringer of 20x30x575x1.0 mm Rectangular tube. The system shall be design and taken approval for Uniformly distributed load (UDL) of 13 KN (1300 kg/ sqm), for the same all complete as per specification. Cavity area below the false flooring shall be made dust proof by using Polyurethane paint etc complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00			0.0464028379

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A1431	Providing and fixing, laying min.15mm woden panel flooring and skirting of pergo,Robina,greenlam or equivalent multi-layered engineered wooden planks treated with VOC free lacquers and stains to provide extra strengthening, longevity and durability to planks. In all planks each layers are arranged at cross grain to each other for provide the balancing and stability to all three layers. Top layer of flooring is made up of about 3.0 mm thick thermosetting re-polish able natural veneer setting on a core of about 10 mm thick pine wood that produce natural characteristic of wood with 2.0mm thick bottom ply based veneer balancing layer. The planks are joint to each other through plankloc system with glue less technology system and laid on 2mm thick dual barrier underlay protecting sheet having anti-bacterial, Anti-termite, fire-resistant, noise reduction, high wear and abrasion resistance, water resistant properties. The system includes all accessories like beading, Quadrant, Veneered/solid wood skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	150.00			0.0334281159
B1431	Providing and laying minimum 50 mm thick wooden flooring, consisting of 35 mm thick hardwood planks, finished with min. 15mm thick wooden flooring of greenlam, pergo or equivalent with min. plank size 193x1195mm (material class shall be 34 as per EN13329) of approved color and shade, over 2 mm expanded polystyrene foam and polythene sheet under laying all complete as per manufacturer specification. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00			0.0441526787
A1432	Providing and laying Decorative/designer pre-polished, plain and pigmented, high wearing resistance concrete tiles of 20mm thickness (minimum) in various non-standard interlocking patterns of approved color,shade all complete as per specification. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00			0.0055195846
A1433	Providing and laying Tactile, tac liner & tac button fully vitrified unglazed porcelain tile (for guiding band/s for visually impaired persons), size 300x300 15mm thick having Tile body 10mm thick plus profile 4.5mm thick. Low water absorption below 0.5%. MOR > 38NCM2, MOH Hardness >7 & Breaking strength > 4000 N. Tile confirming RNIB (The royal national institute for the blind, UK) , DETR (Department of the environment, transport and the regions, UK), & ADA (American With Disabilities Act, USA) , high stain and chemical resistance. Confirming IS 4457: 2007. Tile will be laid on 20mm thick cement & sand mortar with cement slurry having 4mm spacer & pointing with 3X4mm stainless epoxy grout / polymer based SP- 100 of Laticrete or approved equivalent in approved colour. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00			0.0101655651
A1434	Providing and fixing carpet flooring over cement concrete floor. The carpet shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with under lay of 10mm thick and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specification.(Cement concrete flooring to be paid separately)	SQM	100.00			0.0070302663

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A1435	<p>Providing and fixing Glass mosaic tiles at finished plain wall surface of size 24 mm x 24 mm x 3.8 mm thick (minimum) in decorative murals and pattern of approved colour, shade, design, fixing in customize design, as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the vertical wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00			0.0976436205
A1436	<p>Providing and fixing Rubber flooring over cement concrete floor min. 4mm thick conform to IS 809, consist of 100% virgin elastomer reinforcing agents, resins, curing agents, anti-oxidants and pigments. The rubber flooring shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with suitable under lay and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specifications. Rubber flooring shall have excellent abrasion resistance, comply to class-I fire rating, acid & alkali resistant and shall be of anti static grade. (Cement concrete flooring to be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00			0.0271507441
1500	<p>ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, lags, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.</p>					
A1504	<p>Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa complying AS1397 and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint of minimum dry film thickness (DFT) 20 microns(nominal) over suitable primer coat of 5mm DFT(nominal). Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 10 microns(nominal) over suitable primer of 5mm DFT(nominal). The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	4000.00			0.3813639898

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A1505	Designing, providing and fixing External/ Inner sheet of Permanent colour coated metal cladding / roofing with troughed M.S. sheets of minimum 0.5 mm bare metal thickness of min. grade G350 as per AS1397/grade SS340 class 4 or as per ASTM A792M/ grade S350 GD as per EN 10326 with zinc coating to class Z275 / aluminium zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, etc. all complete over columns, beams, bracings etc. at all levels. The exposed face the sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron and minimum 10 micron SMP or super polyester paint over primer coat of minimum 5 micron on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	25000.00			2.0011172453
1511	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a)	For insulation in Sandwich Cladding	SQM	850.00			0.0605575501
1512	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
c)	Mineral wool/rock wool insulation(density 48 kg/cum) bound in polythene bags laying on top of false ceiling panels at all height and levels as per instruction from engineer in-charge.	SQM	700.00			0.0587286551
A1514	Providing and fixing underdeck insulation with resin bonded rock wool /Mineral wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum with minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.6 mm dia and 25 mm mesh GI wire netting, fixed with 2mm wire ties at various elevations with rawl plugs including clips, etc complete as per specifications and instructions of the engineer incharge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	5000.00			0.3528800883
1517	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	325.00			0.0321004709

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A1519	<p>Designing, providing and fixing Factory made (Continuous Line) prefabricated sandwiched Permanent colour coated metal cladding comprising top sheet as troughed (minimum depth of trough shall be 30 mm) permanently colour coated sheet & bottom sheet as plain permanently colour coated for covering of exposed metal/concrete / brick surfaces with insulation shall be of Polyurethane type of minimum 50mm thick (excluding trough). The polyurethane shall be Chlorofluorocarbon (CFC) free and self-extinguishing and shall conform to IS 12436: 1988. It shall have Modular Density 40 +/- 2 Kg/m³ and Thermal Conductivity @ 10 Deg.C 0.017 - 0.020 W/M^{0k}, Water absorption (% by vol) 3.1, Critical Oxygen Index 23 and Compressive Strength 1.2 Kg/sq.cm, sandwiched between the two sheets, each sheet shall be high strength tensile steel sheet 0.5mm bare metal thickness (minimum) of YS350 as per IS 15961 / grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z 275 / aluminium-zinc alloy coating to class AZ150 on both sides, both sheet shall be permanently coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint of minimum 20 micron DFT on exposed surface on 5 microns (min.) epoxy primer/phosphate primer coat and 10 micron (min.) SMP on 5 micron (min.) epoxy primer/phosphate primer on other face, SMP paint system shall be of industrial finish of product type 4 of AS/NZS 2728, troughed sheet shall be of approved profile, sectional properties, (suitable for the specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, fixing insulated sandwiched metal sheet with the structural members below for supporting the sheeting system, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications. Sealant used for cladding shall be butyl based, two parts poly sulphide or equivalent approved, non stainless material and be flexible enough not to interface with fit of the sheets. Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. Overlap shall be min. 100 mm or as specified by manufacturer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60%</p>	SQM	2500.00			0.4838146629
1600	<p>FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.</p>					
1601	<p>Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>					
aa	<p>12.5mm thick GRG board conforming to IS: 2095 with galvanised light gauge steel load bearing supporting GI frame (minimum 0.8mm thk and grid size of 600x1200mm.) and finished flat (seamless).</p>	SQM	100.00			0.0082768160
b	<p>12 mm thick GRG board in profile (dome ,curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).</p>	SQM	100.00			0.0118262810

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A1601	<p>Providing and fixing 12.5 mm thick tapered/square edge glass fibre reinforced gypsum board conforming to IS:2095 having fine texture finish including providing and fixing of frame work at all levels, for all kind of work, consisting of light weight galvanised steel member (minimum 0.8 mm thick and galvanised as per IS : 277) having maximum grid size of 1200 mm x 600 mm for supporting panels of specified size, suspended from RCC slab/ structural steel or catwalkway grid above, with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm width along the perimeter of ceiling, supporting grid system (minimum 0.8 mm thick and galvanised as per IS : 277), expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00			0.0130088971
A1602	<p>Providing, fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required M.S. channel shall be measured & paid extra under respective item unit rate. (All mineral fiber board to be used should be with appropriate % of recycled content.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	2500.00			0.3702672044
A1603	<p>Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy panels of size 600 mm x 600 mm and min.0.6 mm thk. with clip on torsion spring system ,perforation patterns in combination with built in nonwoven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7 and installed with silhouette T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. The whole system shall be level adjusting arrangement and shall be suspended as per manufacturer. 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 D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	5000.00			1.7976772173

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B1603	<p>Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon 150C,300C, of Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy (grade 3105) panels of of minimum thickness 0.6mm with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.55. 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 D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00			0.1677822777
A1604	<p>Providing, fixing and laying permanently colour coated Designer metal aluminium false ceiling of approved colour with stove enamel finish of approved make of Luxalon Hunter douglas,Newage or approved equivalent in LINEAR, RECTANGULAR, SQUARE, CURVILINEAR , OPEN GRID type etc.as per detail engineering drawing , with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness 0.6mm,with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc.Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00			0.1569007602
B1604	<p>Providing, fixing and laying permanently colour coated Designer metal Batten panel aluminium false ceiling of colour with stove enamel finish of approved make of Luxalon Hunter douglas,Newage or approved equivalent in combination with demountable translucent stretch ceillign memebres etc.as per detail engineering drawing & manufacturer specification with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness MIN. 0.6mm. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc.Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00			0.0444160829
1605	<p>Providing, fixing and laying anodised natural colour matt finished aluminium false ceiling of Jindal/Hindalco make with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. shall also beprovided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00			0.0330286507

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
1606	<p>Providing and Fixing 12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm) of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufaturer's specification supported over movment platform.The work to be complete as per specifications, drawings and direction of engineer.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00			0.0110240472
1607	<p>Providing and Fixing 12mm thick Gypsum board plain/ mineral fibre based acoustic ceiling board in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufaturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00			0.0118158501
A1607	<p>Providing and Fixing 12mm thick Calcium silicate board of HILUX or equivalent in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufaturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ). Work shall include 25mm thick resin bonded mineral wool insulation (as per IS:8183) bound in polythene bags on top of ceiling. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00			0.0787587142

Annexure A

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1608	<p>Providing & fixing 12.5 mm thick glass fibre reinforced gypsum plastic board in plan curve or in elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete, as per architectural design and detail, metal suspension system as per ASTM C-635 shall be hot dipped MS galvanized (grade 180 as per IS:277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24 mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00			0.0122464547
A1608	<p>Providing and fixing Pre-Painted Coil coated Steel false ceiling system, at all level, for all kind of works, in approved pattern,consisting of 0.5 mm thick galvanized as per IS 277 including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. , along with galvanized supporting steel members exposed faces of galvanized member to be prepainted with regular modified polyester coating / super polyester coating minimum 20 DFT, to form panels of specified size for tile type panels and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalk way steel channel grid above with 4 mm (minimum) galvanized wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanized as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	1500.00			0.1767859269
A1609	<p>Providing and fixing stainless Steel false ceiling system in lineal/tile shape, approved colour Luxalon hunter douglas or approved equivalent, lineal pattern (closed type) of 100 mm nominal width , bright finish at all level, for all kind of works, consisting of 0.5 mm thick stainless steel sheet, along with galvanized supporting steel members exposed faces of galvanized member to be prepainted with regular modified polyester coating / super polyester coating minimum 20 DFT and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalkway steel channel grid above with 4 mm (minimum) galvanized wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanized as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00			0.0352679852
1700	<p>RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.</p>					

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
A1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	2000.00			0.2730754698
B1704	Providing and fixing galvanised MS down take pipes of 200 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	200.00			0.0415243883
C1704	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239 (part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over a coat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	10.00			0.0010167510
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	50.00			0.0031801683
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	5.00			0.0004324232
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.					
A1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum/non expansive soil and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	10000.00			2.0867826978

Annexure A

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B1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of 40 mm size rammed,consolidated in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected fine sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	1500.00			0.3130098771
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	500.00			0.1312984141
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	150.00			0.0430420061
A1804	Providing and fixing weep holes in drains consisting of 75 mm dia HDPE pipe sleeves including sand (250sq x 150 mm thick), aggregates (250sq x 150 mm thick), 200mm dia geo-textiles (pasted on concrete surface) etc. all complete as per specifications, drawings and guided by engineer-in-charge. (item is inclusive the cost of materials like HDPE pipe, sand, aggregates, etc.).	EACH	1500.00			0.0242417465
1807	Anti termite chemical treatment of soil with Chlorpyrifos/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). Drilling 12mm dia hole @300 c/c using material one liter per hole.	SQM	2750.00			0.0508779147
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	200.00			0.2128781853
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	50.00			0.0429219585
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	50.00			0.0324917338
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)	NO	50.00			0.0028419066
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	NO	50.00			0.0023550150
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	NO	50.00			0.1270636187
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	NO	50.00			0.0737260343
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	25.00			0.0002256959
A1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 610 g/sqm etc. all complete.	Kg	250.00			0.0020312428
1821	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust supression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	1350.00			0.0985344337
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	25.00			0.0029154500

Annexure A

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1827	Anti weed chemical treatment of soil with suitable chemical etc all complete.	SQM	20000.00			0.0053497092
1849	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	100.00			0.0045949964
1850	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	100.00			0.0048247281
1851	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	25.00			0.0004435849
1852	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	50.00			0.0020173159
1853	Providing, laying and fixing rails and guide rails in concrete for transformer, rail track(52 kg/m) including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	50.00			0.3533470512
A1860	Providing and installation of Bio-Toilet near all the modular worker's sheds/accommodation etc all complete as per specification.	Nos	10.00			0.0366920223
A1862	Supplying and installation of pipes in concrete / Duct bank for all kind of works, including setting material in concrete, layout, cutting, forming, grinding, jointing etc. all complete as per specification and as guided by engineer-in-charge for the following: (Concrete, Reinf. paid separately)					
a	200 mm dia HDPE Pipes	RM	1000.00			0.1316052555
b	200 mm dia PVC pipe ISI mark 6 Kg/cm2	RM	200.00			0.0182573232

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A1864	<p>Providing and fixing Semi Unitised STRUCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium sections of grade 63400 WP IS: 733 and IS: 1285 pure polyester powder coated 50- 60 microns make; Akzo Nobel applicator only in approved colour with mullion fixed to beams / columns through adequately designed MS powder coated. The member and bracket shall be fixed with appropriate bolts and expansion fasteners, so as to withstand the dead load of the structural glazing as well as stresses due to wind pressure. The Structural glazing system shall be designed as per BIS code for required wind pressure IS: 875 part III (the system must passed the proof test at 1.5 times design Wind pressure without any failure), with as per the prevailing site conditions and building profiles, including functional design of the aluminium sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation& drainage and protection against fire hazard including, Fabrication and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon seperator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers and use of aluminium section alloy as per IS : 8147. System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement, submit the calculation for review and approval of shop / fabrication/shop drgs, cutting plan, from BHEL.Silicon sealant structural grade and weather grade shall be GE/Dow corning or Equivalent.The contractor shall submit structural stability report of the structural glazing system from a consultant to be get approved by the engineer incharge.Providing and fixing G.I. flashing at soffit level /sill level made out of 1.5mm thick G.I. Sheet with powder coated bent to required profile and shape to seal the soffit area.Openable glazing panel where ever required shall be with two point locking with friction stays, as per detail design requirement,provided with approved hardware of Dorma/Gieeze or equivalent make, all</p>	KG	200.00			0.0140328146
A1865	<p>Providing, fixing and Fabricating shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi -rigid, inorganic, non-combustible fibre glass wool insulation 50 mm thick,conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5 mm and nominal mass not less than 60 gm /sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including fixing 1.5mm thick solid aluminum sheet backing using, 6 mm thick cement board including SS rivets, nuts, bolts, washers etc complete.</p>	SQM	200.00			0.0288842727
2000	<p>FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.</p>					

Annexure A

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A2001	Supplying and erecting in position 1.95 m high PVC coated gavanised chain linked fencing of minimum 4 mm (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge.The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. GI barbed wire fencing of height of 450 mm conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under item A2008). Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	2500.00			0.4727565561
A2003	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. Concertina of height of 600 mm at top of chain link fencing shall be provided and fixed with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. A2008) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	1250.00			0.2496244707
A2008	Supply, fabrication and fixing of mild steel posts for fencing including painting with chlorinated rubber paint over a suitable primer etc all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	75.00			0.5809851885
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, 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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	30.00			0.2615764757
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks with flow rate less than 5 LPM (litres per minute) at 45 psi, including sockets, union, nuts etc all complete -15mm nominal bore.(Note: Flow rate of all faucets at 45 psi should be less than 5 lpm. The contractor should submit the cutsheets/ declaration from the manufacturers mentioning the same to Engineer in charge.)	NOS	75.00			0.0054517784

Annexure A

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2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	75.00			0.0048449208
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	50.00			0.0036345189
b	50mm nominal bore.	NOS	50.00			0.0052495025
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	125.00			0.0041878059
b	20 mm nominal bore.	RM	50.00			0.0018378632
c	25 mm nominal bore.	RM	50.00			0.0021778118
d	50 mm nominal bore.	RM	25.00			0.0014594799
B2104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, confirming to IS 15778, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings shall be concealed, complete for internal works with sockets, unions, elbows, tees, nipples etc of approved manufacturer supreme,prakash,ajay pipes or equivalent and clamps including cutting and making good the walls etc all complete for following sizes:					
a	15 mm nominal bore.	RM	100.00			0.0033289288
b	20 mm nominal bore.	RM	50.00			0.0017975344
Ac	32mm nominal bore	RM	25.00			0.0012359706
d	50 mm nominal bore.	RM	20.00			0.0015449663
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	75.00			0.0019242634
b	20 mm nominal bore.	RM	40.00			0.0011555592
c	25 mm nominal bore.	RM	40.00			0.0014284023
d	50 mm nominal bore.	RM	20.00			0.0010106679
A2106	Providing and fixing 600mm x 900mm x 6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws , edge mounting with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	40.00			0.0056087075
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	40.00			0.0036984353
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	75.00			0.0043382698
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	75.00			0.0035241477
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.	NOS	35.00			0.0019199993
A2113	Providing and fixing rotating type chromium plated brass shower rose with 15 or 20 mm inlet all complete.	NOS	25.00			0.0013123706
B2113	Providing and fixing rotating type Emergency safety shower,conforming to IS 10592 latest code, head with water column of height 210 to 240 cm is provided from the standing level.water column provided with a minimum spray pattern diameter of 50 cm at 150 cm height from standing level and the centre of the spray pattern shall be located at least 40 cm from any obstruction or emergency. Shower head shall be so designed that it produces a straight water column. Emergency shower head shall deliver a minimum of 76 l/min of water and substantially dispersed throughout the pattern,complete with installation,with accessories etc all complete.	NOS.	5.00			0.0154976292

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
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	10.00			0.0055370494
b	1000 litres capacity	NOS	15.00			0.0166111543
c	2000 litres capacity	NOS	15.00			0.0332223085
d	5000 litres capacity	NOS	10.00			0.0553705100
2115	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	NOS	15.00			0.0814745125
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	15.00			0.0009739636
A2117	Providing and fixing metal storing cabinets 4(Four) Drawer Metal File Storage Cabinet with Central Locking System, Powder Coated (Approx size 54" X 18.5" X 27" Inch, Grey) all complete	EACH	15.00			0.0155007440
A2118	Providing and fixing electric operated hand dryer with photo voltaic control.etc all complete..	EACH	15.00			0.0051672621
A2120	Providing and fixing stainless steel (SS304) Grab bars min.32mm dia, min.38 inches long, U-Shaped, swing type adjusts both horizontally and vertically, barrier-free access for disabled, appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	75.00			0.0103334788
2200	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.					
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 mounted over 18 to 20 mm thk granite beveled edge counter. The Basin shall be fitted with approved shape bib cock, photo-voltic control system for water control with flow rate less than 5 LPM (litres per minute) at 45 psi,CP brass chain with rubber plug, 40mm CP brass waste and bottle trap as per IS: 2556 with angle valve,taps,32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required,necessary union including cutting of notch in granite counter slab etc.all complete as per specification	EACH	100.00			0.1030926441
A2202	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 heavy duty CP brass waste bottle trap and 15mm CP brass pillar tap (hot and cold dual function) with elbow,operated level ISI marked, with necessaary union,elbow,angle valve,tees, junctions,extension pipes complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	5.00			0.0034131535
A2203	Providing and fixing stainless steel kitchen sink of size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, hot and cold water mixer, conforming to IS: 13983 including all fittings, necessaary union,elbow,angle valve,tees, junctions,extension pipes etc. all complete.	EACH	5.00			0.0030718796
B2203	Providing and fixing stainless steel Eye wash sink of size size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, water mixer, conforming to IS 10592 latest code including all fittings, necessaary union,elbow,angle valve,tees, junctions,extension pipes etc. all complete.	EACH	4.00			0.0022931638
A2204	Providing and fixing colour glazed vitreous china European type water closet of approved make 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,dual flushing system) with valveless fittings,2 way angle valve, with health faucet necessary C.P connections, water faucet etc all complete.					
a	Floor mounted	EACH	7.00			0.0051929589
b	Wall mounted	EACH	60.00			0.0718243645

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2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.	EACH	60.00			0.0350511929
A2205	Providing and fixing colour glazed vitreous china 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 having flow rate of 6/3 LPF (litres per flush) or less at 45 psi.	EACH	100.00			0.0613395927
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 610x375x390mm with photo voltaic control flushing systems of approved manufacturer simpolo, varmora or equivalent per IS: 2556(pt-6 sec-1) with flush pipes, lead pipes, gratings, traps and necessary C.P fitting etc. all complete as per specification having flow rate of 2 LPF (litres per flush) or less at 45 psi.	EACH	100.00			0.1697233056
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	125.00			0.0037756443
b	110mm dia pipes	RM	150.00			0.0071872238
c	160mm dia pipes	RM	75.00			0.0049562501
d	200mm dia pipes	RM	100.00			0.0096518813
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. Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	200mm dia	RM	200.00			0.0175560338
b	300mm dia	RM	1500.00			0.2118657885
c	450mm dia	RM	650.00			0.1169690228
d	600mm dia	RM	50.00			0.0110729091
e	900mm dia	RM	25.00			0.0074615355
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following. Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	150mm dia	RM	375.00			0.0253894060
b	250mm dia	RM	50.00			0.0043497127
c	300mm dia	RM	50.00			0.0049073258
d	450mm dia	RM	25.00			0.0034422356
e	500mm dia	RM	25.00			0.0040520461
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following: Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	450mm dia	RM	50.00			0.0103078576
b	600mm dia	RM	20.00			0.0049886488
c	900mm dia	RM	20.00			0.0067356557
A2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx600mm including frame from reputed manufacture confirming to IS:4111 etc all complete as per specification.	EACH	50.00			0.0607654375
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	50.00			0.0597282468

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2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:					
a	100x100mm P or S Type.	EACH	30.00			0.0051015072
b	150x100mm P or S Type.	EACH	20.00			0.0037124688
c	150x150mm P or S Type.	EACH	20.00			0.0042109804
A2214	Providing and fixing Heavy duty CP brass floor traps size 100mm with stainless steel grating etc all complete.	EACH	50.00			0.0080690754
A2216	Providing and installing approved brand single tap water efficient water cooler of 50 L cooling capacity all complete.	EACH	5.00			0.0145513764
B2216	Providing and installing approved brand single tap water efficient water cooler of 80 L cooling capacity all complete.	EACH	5.00			0.0194018348
A2217	Providing and installing approved brand single tap water efficient water cooler of 150 L cooling capacity all complete.	EACH	5.00			0.0270661140
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	2.00			0.0012813005
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	20.00			0.0283169979
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)					
b	100mm dia	RM	50.00			0.0061100238
c	150mm dia	RM	110.00			0.0209471605
d	200mm dia	RM	200.00			0.0550621659
e	250mm dia	RM	25.00			0.0111318318
f	300mm dia	RM	25.00			0.0134583161
2222	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.					
a	Upto 75 mm dia	RM	10.00			0.0003548719
b	100 mm dia	RM	10.00			0.0004317760
c	150 mm dia	RM	30.00			0.0026795893
d	200 mm dia	RM	10.00			0.0013160526
2223	Providing and fixing vertical wall mounted water geysers/heaters(minimum 5 star rating) of required capacity including all connections & fittings(angular stop cock and brass connection pipes, etc.) all complete as per specification.					
a	15 Litres	Each	5.00			0.0045286817
b	25 Litres	Each	8.00			0.0093991872
A2224	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 50 mm domestic water inlet pipe	NOS.	7.00			0.0052464180
A2225	Supply, laying and jointing sand cast iron pipe conforming to IS: 1729 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	110mm dia pipes	RM	10.00			0.0009680832
b	160mm dia pipes	RM	50.00			0.0071411634
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

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ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
D2301	<p>Fabrication(Site Welded as per specification), transportation from fabrication yard and erection of Mild structural steel (Grade designation E250) with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete.(Rate shall be exclusive of surface preparation and primer).</p> <p>Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%</p>	MT	250.00			0.5685608306
F2301	<p>Erection of shop fabricated (field connections will be welded type) Mild structural steel (Grade designation E250), Medium and High Tensile structural steel (Grade designation E350 or higher) with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including loading,transportation,unloading,collection of steel from stores, machining,welding, electrodes and other consumables, alignment, true to line, level, plumb & dimension,erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating,testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete as per approved drawing, specification and approval of engineer in charge.</p> <p>Payment Breakup:- 1) On Completion of erection-60% 2) Balance on completion of alignment,welding etc.-40%</p>	MT	100.00			0.1304008122

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A2302	Extra over ST NO. D2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/- 2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	MT	250.00			0.0750787718
A2305	Providing and applying (with airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT to be applied after an interval of minimum 24 hours (from the application of primer coat by airless spray technique.) and of approved make including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	250.00			0.0443566833
B2305	Providing and applying Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT shall be applied after an interval of minimum 10 hours (from the application of sealer coat), Colour and shade of the coat shall be as approved by the Employer) over steel sections already having intermediate coats including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	250.00			0.0443566833
A2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel conforming to IS:2062 having hot dip galvanisation,surface preparation of shot blast cleaned to Sa 2 ½ finish or cleaned by acid pickling as per ISO 8501-1, in flooring, platforms, drain and trench covers, walkways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%					
a	Minimum galvanisation of 610 g/sqm	MT	50.00			0.4214291435
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C` as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	100.00			0.0009699948
2312	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C` as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8` as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	5000.00			0.0569411088
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	20.00			0.0150155618

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2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:					
a	In erected position	MT	20.00			0.0382513645
b	In fabrication yard	MT	20.00			0.0317950057
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	20.00			0.0241582510
2321	Supply, fabrication and fixing of MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	5.00			0.0439508263
A2322	Supply, fabrication and fixing of galvanised MS pipe hand railing (Min. 1000 mm high) of 32mm/40mm/50mm dia (Medium Class) including transportation, loading/unloading, painting etc. all complete. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	25.00			0.2388226031
2400	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.					
2401	Preparation of sub grade 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	1500.00			0.0072240949
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, teting etc all complete.	CUM	500.00			0.0130655506
A2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using excavated soil within a lead upto 1km soil 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, teting etc all complete.	CUM	1000.00			0.0075577625
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	150.00			0.0091226727

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A2404	Providing & laying granular sub-base using close graded material conforming to specification, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	CUM	1500.00			0.3064780441
A2406	Providing & Laying water bound macadam sub base/base course with stone aggregate 53 mm to 22.4 mm size stone conforming to MORTH specification (Table 400-9) (IRC 19 -grading -3) mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	500.00			0.1075681358
A2410	Providing & laying 40mm bitumen mastic wearing course over concrete pavement 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 as per specification, drawings and as per direction of engineer-in-charge. (Considering bitumen using 10.2% as per MORTH specification).	SQM	5000.00			0.3885718856
A2413	Supplying and laying 450mmx250mmx500mm deep precast concrete kerb stone of grade M25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	1000.00			0.0677717905
B2413	Supplying and laying 300mmx250mmx150mm deep precast concrete kerb stone of grade M-25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	1000.00			0.0372863739
A2415	Supply and laying 200mm dia R.C.C NP3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	250.00			0.0219508134
A2419	Providing and laying cement concrete of grade M35/M40 using 20 mm nominal size stone aggregate with including addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent, 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	1000.00			0.3320511606
A2421	Providing & laying dry lean cement concrete of grade M10 with 20 mm nominal size graded stone aggregate over a prepared sub-base including compaction, finishing, curing etc all complete	CUM	750.00			0.2397662374
B2421	Providing and laying of plain cement concrete of grade M15 using 40 mm graded stone aggregate including providing and fixing formwork, compaction etc. all complete	CUM	350.00			0.1118909108
REINFORCEMENT						
A2423	Providing and fixing in position MS dowel bar reinforcement including surface painted with epoxy, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	10.00			0.0564009303
A2424	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	1.00			0.0056400930
MISCELLANEOUS						

Annexure A

ST NO	ITEM DESCRIPTION	UOM	QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	% WEIGHTAGE (UPTO 10 DECIMAL POINT)
A2425	Providing & installation of bitumen impregnated fibre board of 20mm thickness conforming 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.	RM	50.00			0.0007048473
A2426	Providing and filling in position hot applied bitumen sealing compound (Grade A) of 20 mm thick conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	400.00			0.0020685507
A2427	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM	1000.00			0.0036515638
A2428	Providing & laying 75 mm thick precast interlocking concrete pavers of grade M35 of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	1500.00			0.1008926528
A2429	Providing and laying 20mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	1500.00			0.0049240427
A2430	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	3000.00			0.0032940374
A2431	Supplying, fixing and removing formwork for concrete road pavement complete as per specification and as directed by the engineer-in-charge.	SQM	100.00			0.0036757591
	PROVIDING T&Ps ON RENTAL HIRING BASIS (CONSIDER WORKING TIME - 8 HOUR PER DAY)					
T&P-1	Hiring of Poclain 200 having bucket capacity of 1 Cum with diesel and operator	Day	312.00			0.3911712779
T&P-2	Hiring of JCB 4Dx with diesel and operator	Day	312.00			0.2074279816
T&P-3	Hiring of Dumper having approx. 16 Cum of Capacity with diesel and operator	Day	624.00			0.4588014427
T&P-4	Hiring of Vibro Roller having approx. 12 Tonne Capacity with diesel and operator	Day	312.00			0.2538106069
T&P-5	Hiring of Dozer 80D with diesel and operator	Day	312.00			0.5243312663
T&P-6	Hiring of Boom Placer having 30 Cum Capacity with diesel and operator	Day	156.00			0.4657907685
T&P-7	Hiring of Farana having 14 MT Capacity with diesel and operator	Day	312.00			0.1714161072
	PROVIDING MANPOWER FOR MISCELANEOUS WORKS AT PROJECT SITES ON REQUEST OF BHEL SITE-IN-CHARGE (CONSIDER WORKING TIME - 8 HOUR PER MANDAY)					
MP-1	Deployment of experienced skilled manpower like Carpenter, Bar Bender/Binder, Mason, Painter, Fabricator, Fitter, Rigger, etc.	Manday	6240.00			0.4580701261
MP-2	Deployment of experienced un-skilled manpower for supporting above skilled manpower	Manday	12480.00			0.6525338589
	TOTAL AMOUNT					100

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.					
A101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	87500.00	43750.00	26250.00	17500.00
b	Depth exceeding 2 m but not exceeding 4 m	CUM	52500.00	26250.00	15750.00	10500.00
c	Depth exceeding 4 m but not exceeding 6 m	CUM	17500.00	8750.00	5250.00	3500.00
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10500.00	5250.00	3150.00	2100.00
e	Depth exceeding 8 m but not exceeding 10 m	CUM	3500.00	1750.00	1050.00	700.00
f	Depth exceeding 10 m but not exceeding 15 m	CUM	3500.00	1750.00	1050.00	700.00
A102	Extra over ST No. A101, A103, A105 & A106 for dewatering of ground water by sump pump method as per IS 9759.Ground water table shall be lowered up to 1 m below the founding level to make the site workable for foundation construction till backfilling up to ground level. Mode of measurement shall be the quantity of excavation of soil including ash below ground water table to founding level of the footing.	CUM	50000.00	25000.00	15000.00	10000.00
B102	Removal of slush / muck from excavated pit, trenches or foundations, including collection, loading, transportation, unloading and disposal of the same to designated disposal area within a lead upto 1Km, complete in all respects as per directions of Engineer-in-Charge.	CUM	5000.00	2500.00	1500.00	1000.00
A103	Earth work in excavation 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 including setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	10000.00	5000.00	3000.00	2000.00
b	Depth exceeding 2 m but not exceeding 4 m	CUM	30000.00	15000.00	9000.00	6000.00
c	Depth exceeding 4 m but not exceeding 6 m	CUM	20000.00	10000.00	6000.00	4000.00
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10000.00	5000.00	3000.00	2000.00
e	Depth exceeding 8 m but not exceeding 10 m	CUM	4000.00	2000.00	1200.00	800.00
f	Depth exceeding 10 m but not exceeding 15 m	CUM	400.00	200.00	120.00	80.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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	1000.00	500.00	300.00	200.00
b	Depth exceeding 2 m but not exceeding 4 m	CUM	5000.00	2500.00	1500.00	1000.00
c	Depth exceeding 4 m but not exceeding 6 m	CUM	7500.00	3750.00	2250.00	1500.00
d	Depth exceeding 6 m but not exceeding 8 m	CUM	5000.00	2500.00	1500.00	1000.00
e	Depth exceeding 8 m but not exceeding 10 m	CUM	2500.00	1250.00	750.00	500.00
A106	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, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, 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				
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1000.00	500.00	300.00	200.00
d	Depth exceeding 6 m but not exceeding 8 m	CUM	500.00	250.00	150.00	100.00
e	Depth exceeding 8 m but not exceeding 10 m	CUM	500.00	250.00	150.00	100.00
f	Depth exceeding 10 m but not exceeding 15 m	CUM				
A107	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 250mm/300mm thickness 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 90% maximum dry density as per IS-2720 (Part-VII)	CUM	26250.00	13125.00	7875.00	5250.00
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	8750.00	4375.00	2625.00	1750.00
A108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250mm/300mm thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.					
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	39375.00	19687.50	11812.50	7875.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	26250.00	13125.00	7875.00	5250.00
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.					
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	52500.00	26250.00	15750.00	10500.00
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	45000.00	22500.00	13500.00	9000.00
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 available within a lead of 10 Kms (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorowed 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, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer. Note: carriage of borrowed soil shall be payable as per BOQ Item No. 109a beyond an initial lead of 10 km.	CUM	5000.00	2500.00	1500.00	1000.00
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 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	8750.00	4375.00	2625.00	1750.00
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (Cement shall be issued by BHEL free of cost unless otherwise mentioned in the BOQ Cum Rate Schedule)					
A201	Providing, transportation and placing Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	4375.00	2187.50	1312.50	875.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B201	Transportation and Placing Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	1093.75	546.88	328.13	218.75
A202	Providing, transportation and placing Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	1750.00	875.00	525.00	350.00
B202	Transportation and Placing Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	437.50	218.75	131.25	87.50
A203	Providing, transportation and placing Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors, plinth protection etc. complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	7000.00	3500.00	2100.00	1400.00
B203	Transportation and Placing Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors, plinth protection etc. complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224) NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	1750.00	875.00	525.00	350.00
A204	Providing, transportation and placing Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224).	CUM	3500.00	1750.00	1050.00	700.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B204	Transportation and Placing Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224). NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.	CUM	875.00	437.50	262.50	175.00
A205	Providing, transportation and placing Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, trenches, under floors, duct banks etc for any shape, position or thickness etc complete all including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete complete as per specification & drawing below finished ground level upto a depth of 10m from FGL (For depths greater than 10m from FGL, extra over for additional depth to be paid in Item No A224), for the following.					
a	M 25 Grade	CUM	26250.00	13125.00	7875.00	5250.00
b	M 30 Grade	CUM	13125.00	6562.50	3937.50	2625.00
B205	Transportation and Placing Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, trenches, under floors, duct banks etc for any shape, position or thickness etc complete below finished ground level upto a depth of 10m from FGL including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For depths greater than 10m from FGL, extra over for additional depth to be paid in Item No A224), for the following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	M 25 Grade	CUM	6562.50	3281.25	1968.75	1312.50
b	M 30 Grade	CUM	3281.25	1640.63	984.38	656.25
A206	Providing, transportation and placing Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing upto 10m level above finished floor level of ground floor (For height greater than 10m from FFL of ground floor, extra over for additional height to be paid in Item No A225), for the following.					
a	M 25 Grade	CUM	17500.00	8750.00	5250.00	3500.00
b	M 30 Grade	CUM	8750.00	4375.00	2625.00	1750.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B206	Transportation and Placing Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete upto 10m level above finished floor level of ground floor including cost of labour for pouring, vibrating and curing, etc. complete as per drawing, specifications and as per direction of engineer in charge. (For height greater than 10m from FFL of ground floor, extra over for additional height to be paid in Item No A225), for the following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	M 25 Grade	CUM	4375.00	2187.50	1312.50	875.00
b	M 30 Grade	CUM	2187.50	1093.75	656.25	437.50
A209	Extra over St. No. A205 & A206 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	1000.00	500.00	300.00	200.00
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					
b	M 25	CUM	175.00	87.50	52.50	35.00
A211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
b	M 25	CUM	43.75	21.88	13.13	8.75
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following.					
a	0.043101852	CUM	1312.50	656.25	393.75	262.50
A212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following. NOTE: Ready Mix Concrete shall be issued at Batching Plant of other contractor.					
a	0.043101852	CUM	350.00	175.00	105.00	70.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
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 precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.					
b	M30	CUM	262.50	131.25	78.75	52.50
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.					
b	M30	CUM	13125.00	6562.50	3937.50	2625.00
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.					
a	Plain cement concrete of all grades	CUM	100.00	50.00	30.00	20.00
b	Reinforced cement concrete of all grades	CUM	100.00	50.00	30.00	20.00
222	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	25.00	12.50	7.50	5.00
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	100.00	50.00	30.00	20.00
A224	Extra over item no. A201 to A205 and A214 for depth below FFL of ground floor (Finished Floor Level of ground floor) as per following:					
a	Depth exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	250.00	125.00	75.00	50.00
A225	Extra over item no. A206 and A212 for height above FFL of ground floor (Finished Floor Level of ground floor) as per following:					
a	Height exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	1000.00	500.00	300.00	200.00
b	Height exceeding 20m from FFL of ground floor but not exceeding 30m	CUM	1000.00	500.00	300.00	200.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
c	Height exceeding 30m from FFL of ground floor but not exceeding 40m	CUM	1000.00	500.00	300.00	200.00
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.					
A301	Fairface form work with good quality water proof ply wood with Filmface of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc. including chamfering of edges as per drawing, specification and instruction of engineer in charge.					
a	Upto Depth 10m From FGL	SQM	65625.00	32812.50	19687.50	13125.00
b	Depth exceeding 10m From FGL	SQM	437.50	218.75	131.25	87.50
B301	Only Fixing of already manufactured Formwork: Fairface form work with good quality water proof ply wood with Filmface of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs (for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc. including chamfering of edges as per drawing, specification and instruction of engineer in charge. (The manufactured formwork shall be issued by BHEL free of cost and agency shall return the formwork (scrap plus usable material) to BHEL store after use)	SQM	500.00	250.00	150.00	100.00
A302	Fairface form work with good quality water proof ply wood with Film face of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended/intermediate floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing for all heights as per specification, drawing and instruction of engineer in charge.					
a	For Height Upto 20m from FGL	SQM	83125.00	41562.50	24937.50	16625.00
b	For Height More Than 20m from FGL	SQM	4375.00	2187.50	1312.50	875.00
B303	Removing formwork at all elevations for all structures including all labour, specifications and as per direction of engineer in charge	SQM	5000.00	2500.00	1500.00	1000.00
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	100.00	50.00	30.00	20.00
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	50.00	25.00	15.00	10.00
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	25.00	12.00	8.00	5.00
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	25.00	12.00	8.00	5.00
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	25.00	12.00	8.00	5.00
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	25.00	12.00	8.00	5.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.					
a	Extra for Curve Shuttering for Item No. 301	SQM	25.00	12.50	7.50	5.00
b	Extra for Curve Shuttering for Item No. 302	SQM	25.00	12.50	7.50	5.00
A305	Erecting, maintaining and dismantling scaffolding arrangement of required height and configuration using MS/GI pipes, couplers, clamps, joints, base plates, sole plates, braces, planks, ladders, safety rails and all other necessary accessories, complete in all respects, to enable execution of civil works at site, as per drawings, specifications and directions of Engineer-in-Charge. (Ownership of scaffolding materials lies with contractor) Payment Breakup: a) Supply & Receipt of material at site - 50% b) Execution & Services Associated with the item - 40% c) Dismantling - 10%	Cum	5000.00	2500.00	1500.00	1000.00
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:					
401	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 & from stores etc. all complete as per specifications & drawings. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	25.00	12.50	7.50	5.00
A403	Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer. (BHEL to issue steel free of cost)	MT	10500.00	5250.00	3150.00	2100.00
B403	Horizontal steel R/F or Stirrups are required to be fixed over already fixed Vertical R/F: Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer for the following. (BHEL to issue steel free of cost)					
a	Fixing and binding in position at any level of exposed vertical steel R/F already erected.	MT	250.00	125.00	75.00	50.00
b	Fixing and binding in position at any level of Horizontal steel R/F or Stirrups.	MT	250.00	125.00	75.00	50.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
C403	R/F Steel available in the form of Curtailed and Bended Conditions as per BBS at existing vendor works: Transportation, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from vendor stores, loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer. (BHEL to issue the fabricated rebar R/F steel as per approved BBS free of cost)	MT	250.00	125.00	75.00	50.00
D403	Dismantling of already fixed reinforcement steel in position, loading, transportation to designated scrap yard, unloading, etc. complete as per direction of engineer.	MT	250.00	125.00	75.00	50.00
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. A403.					
a	12mm Reinforcement bar	Nos.	25.00	12.00	8.00	5.00
b	16mm Reinforcement bar	Nos.	25.00	12.00	8.00	5.00
c	20mm Reinforcement bar	Nos.	25.00	12.00	8.00	5.00
d	25mm Reinforcement bar	Nos.	25.00	12.00	8.00	5.00
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge.(Material used for roof treatment shall be CFC & HCFC free. The contractor shall submit documentary proof to GRIHA consultant in support of same).					
511	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	2500.00	1250.00	750.00	500.00
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.					
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	12 mm wide joints.	SQM	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
b	20 mm wide joints	SQM	500.00	250.00	150.00	100.00
c	25 mm wide joints	SQM	500.00	250.00	150.00	100.00
d	50 mm wide joints	SQM	100.00	50.00	30.00	20.00
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	25mmX25mm	RM	100.00	50.00	30.00	20.00
b	50mmX25mm	RM	100.00	50.00	30.00	20.00
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming 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	500.00	250.00	150.00	100.00
b	12mm X 25mm	RM	500.00	250.00	150.00	100.00
c	20mmX25mm	RM	500.00	250.00	150.00	100.00
A605	Supply and installation of Polystyrene flexible board conforming to IS 4671 (type-1), 20 Kg/ Cum. as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /butimen etc. all complete.					
a	100 mm thick	SQM	1000.00	500.00	300.00	200.00
A610	Providing and fixing ribbed PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
b	230 mm wide and 8 mm thick	RM	100.00	50.00	30.00	20.00
Ab	230 mm wide and 10 mm thick	RM	100.00	50.00	30.00	20.00
c	150 mm wide and 6 mm thick	RM	100.00	50.00	30.00	20.00
d	230 mm wide and 6 mm thick	RM	100.00	50.00	30.00	20.00
615	Providing and fixing 300 mm wide Stainless steel strips (Grade SS 316) over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.	Kg	150.00	75.00	45.00	30.00
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
701	Supply, fabricating and fixing/erection of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	25.00	12.50	7.50	5.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	50.00	25.00	15.00	10.00
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	25.00	12.50	7.50	5.00
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	75.00	37.50	22.50	15.00
704	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.					
a	MS pipes of all diameters	kg	175.00	87.50	52.50	35.00
b	PVC pipes / conduits of all diameters	kg	550.00	275.00	165.00	110.00
c	UPVC pipes / conduits of all diameters	kg	75.00	37.50	22.50	15.00
d	Expansion anchor fasteners (galvanised) of HILTI make (HRD Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	8mm Dia	Nos	100.00	50.00	30.00	20.00
ii	10mm Dia	Nos	100.00	50.00	30.00	20.00
iii	12mm Dia	Nos	100.00	50.00	30.00	20.00
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	HST3 M8	Nos	10.00	5.00	3.00	2.00
ii	HST3 M10	Nos	10.00	5.00	3.00	2.00
iii	HST3 M12	Nos	10.00	5.00	3.00	2.00
iv	HST3 M16	Nos	10.00	5.00	3.00	2.00
v	HST3 M20	Nos	10.00	5.00	3.00	2.00
vi	HST3 M24	Nos	10.00	5.00	3.00	2.00
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	10.00	5.00	3.00	2.00
ii	HAS-E5.8 M10	Nos	10.00	5.00	3.00	2.00
iii	HAS-E5.8 M12	Nos	10.00	5.00	3.00	2.00
iv	HAS-E5.8 M16	Nos	10.00	5.00	3.00	2.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
v	HAS-E5.8 M20	Nos	10.00	5.00	3.00	2.00
vi	HAS-E5.8 M24	Nos	10.00	5.00	3.00	2.00
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.					
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	10.00	5.00	3.00	2.00
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete.	CUM	10.00	5.00	3.00	2.00
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	100.00	50.00	30.00	20.00
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	200.00	100.00	60.00	40.00
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 Conbextra GP-2 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	100.00	50.00	30.00	20.00
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete. Payment shall be made as per the consumption of chemical grout.	Kg	100.00	50.00	30.00	20.00
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
902	<p>Providing and fixing teak wood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	15.00	7.50	4.50	3.00
903	<p>Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	50.00	25.00	15.00	10.00
904	<p>Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continuous pressed steel channel with min 18G, shop and final painting etc all complete.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00	75.00	45.00	30.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A904	<p>Providing and fixing single or double steel door shutters with 35mm (min) thk flush design shutter comprising of two outer sheets of 16 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 18 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>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	250.00	125.00	75.00	50.00
A905	<p>Providing and fixing electrically operated, self operable/closing 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 (Grade of Aluminium shall be Alloy 63400) and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures,Dorma, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. Weight of aluminium section only shall be measured. (Glazing shall be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	20.00	10.00	6.00	4.00
A906	<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 2 mm wall thickness as per IS:1285, IS:733,(Grade of Aluminium shall be Alloy 63400) and anodized (15 micron coating thickness) and electro color dyed of required shade as per IS 1868 (minimum anodized coating of grade AC15) fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear toughened glass of 8/10 mm thickness including snap fit type beading, concealed screws, fixtures, Dorma,Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door - 25% c) Execution & Services Associated with the item - 25%</p>	KG	5000.00	2500.00	1500.00	1000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting, glazing etc. all complete. (Glazing shall be paid separately) Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of steel section for making windows/ventilators - 25% c) Execution & Services Associated with the item - 25%					
a	Openable type	SQM	200.00	100.00	60.00	40.00
b	fixed type	SQM	150.00	75.00	45.00	30.00
A909	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(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/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. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured. Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door frame, windows, ventilators, partitions, etc. - 25% c) Execution & Services Associated with the item - 25%	Kg	25000.00	12500.00	7500.00	5000.00

Annexure B

PROJECT: Various project sites of BHEL across India

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Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B909	<p>Providing and fixing 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(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) powder coated to required shade (minimum thickness of powder coating 50 micron), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/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. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of aluminium section for making door frame, windows, ventilators, partitions, etc. - 25% c) Execution & Services Associated with the item - 25%</p>	Kg	20000.00	10000.00	6000.00	4000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A910	<p>Providing, fabricating, designing, supplying and fixing of Aluminium composite panel cladding (ACP) in pan shape in solid or metallic colour, wooden colour, stone finish of approved shades made out of 4mm thick aluminium composite panel (weight of panel should be minimum 8.1 kg/sqmt) material consisting of 3mm thick FR grade Class A2 as per EN 13501, mineral core sandwiched between two Aluminium sheets (each 0.5mm thick BMT). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF conforming to AAMA 2605 or Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. The top coated surface of ACP shall comply with the "specification for coated coil for the exterior building application" issued by ECCA (European Coil Coating Association). The aluminium composite panel top and bottom skin should conform to Aluminium Alloy 5005 (AlMg 1) marine grade series and H 22/24 temper with mechanical properties confirming to EN 485-2 standard. The ACP product must conform to Class A2, s1,d0 as per EN-13501-1. The manufacturer must furnish the FPC and Certificate of conformity of EN13501-1 for Class A2, s1,d0 from the certifiers and Product must be supplied from the Certified Unit which has been mentioned on the FPC and COC. The panel shall be designed for 12mm groove in horizontal & in verticals with close joint system. Vertical & Horizontal groove shall be filled by non-staining high performance weather sealant. ACP panel shall have sub frame all around panel and aluminium stiffener profile as per structural requirements. The finished surface of ACP shall be protected with a self-adhesive (Rubber based) peel off foil with 70 microns thickness white or black, tested to withstand up to 6 months' exposure to local weather condition without losing the original peel off characteristic or causing stain or other damages on the coated surface of the aluminium composite panel. Installation of ACP Coping/facia at terrace level sealing the top gap of the parapet wall and ACP Panel shall have GI stiffeners below with required aluminium grid work with necessary MS HDG / aluminium alloy brackets & SS fasteners. 2nd barrier of 1mm thk GI sheet laid continuously below the copping to seal the parapet wall. Overlap of GI sheet shall be properly sealed with weather sealant, All shade shall be as per Architect's Approval. as per approved sample from Alucobond Plus, Aludecor, Alubond, Virgo or equivalent.</p>	SQM	10000.00	5000.00	3000.00	2000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A910 cont..	The system shall be designed to withstand a wind pressure of 200kg/Sqm or as per design requirement and shall be fixed to the Masonry/RC walls or aluminium frame with necessary clamps, brackets and anchor fasteners etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any other festering straps, nuts, bolts, rivets, washers, etc. shall be in stainless steel SS316 grade. EPDM gaskets, open cell polyethylene backer rods, weather sealant etc. shall be provided as per requirement. Item shall include aluminium base frame with all fixing arrangements to wall/RC members, fastening material and hardware(festering straps, nuts, bolts, rivets, washers etc.), EPDM gaskets, open cell polyethylene backer rods, weather sealant, scaffolding, approach to all height, material handling, transportation, labour, T&P, preparation of working drawings etc.all complete as per drawing, specification & instructions of engineer in charge. Measurement of payment shall be outer finished area of ACP panel.The contractor shall provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in manufacturer of ACP. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
911	Providing and fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :					
a	Over head hydraulic door closures	Each	50.00	25.00	15.00	10.00
b	Floor mounted Hydraulic door closers	Each	50.00	25.00	15.00	10.00
A912	Providing and fixing pressed steel frames(complying general requirements of IS 4351) fabricated from 1.6 mm thick M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications. Payment Breakup: a) Supply & Receipt of material at site - 50% b) Fabrication of steel section for making frames - 25% c) Execution & Services Associated with the item - 25%	Kg	10000.00	5000.00	3000.00	2000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides of 75mm wide and 3mm thick(min.) and arrangements for inside and outside locking with push and pull operation including wire springs, top/hood cover 0.9mm thick (min.) , factory galvanized, primed & field painted, partly grilled (as required) with 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). Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	Mechanically Operated	SQM	250.00	125.00	75.00	50.00
c	Electrically & Mechanically operated	SQM	1000.00	500.00	300.00	200.00
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00	25.00	15.00	10.00
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
Ab	4 mm thick plain or tinted float glass	SQM	50.00	25.00	15.00	10.00
d	6 mm thick wired glass	SQM	1000.00	500.00	300.00	200.00
Ae	3mm thick Polycarbonate sheet with profile matching with metal sheeting shall be provided. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 1000C. Suitable aluminium beading shall be used. The open ends of the sheet shall be sealed as per manufacturer's recommendations .	SQM	250.00	125.00	75.00	50.00
Ag	6 mm thick tinted heat reflecting toughened type float glass	SQM	100.00	50.00	30.00	20.00
h	6 mm thick clear toughened safety glass	SQM	100.00	50.00	30.00	20.00
h(a)	6 mm thick clear reflective toughened safety glass of Saint Gobain(India) or Asahi (India) or equivalent make and should have solar factor 25% or less, Maximum U-value 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28),values varies as per manufacturer specifications.	SQM	1000.00	500.00	300.00	200.00
Ah	6 mm thick clear toughened glass conforming to IS 2553.	SQM	2000.00	1000.00	600.00	400.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
AhB	8 mm thick clear toughened glass	SQM	250.00	125.00	75.00	50.00
AhC	8 mm thick clear toughened fire resistant glass	SQM	175.00	87.50	52.50	35.00
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	300.00	150.00	90.00	60.00
I(a)	composite double glazing, 25 mm thick 2 hr fire rated, with one outer 6 mm thick tinted heat-reflecting type toughened glass and one inner 11mm thick clear toughened glass hermetically sealed and seperated by 8 mm thick gap for thermal insulation (only single elevation area to be measured) with suitable frame of min 1.6mm galvenised steel sheet. The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	100.00	50.00	30.00	20.00
I(b)	composite double glazing of fire resistant glass MIN.30 mm thick Hermetically sealed double glazed unit of one Fire resistant glass of min.14mm thick (outer side) clear, toughened, interlayered glass with 120 minute fire rated for both integrity & radiation control (EW 120) with symmetrical (Bi-Directional) fire protection and 6 mm thick toughened tinted glass (Inner side) with 10 mm air gap etc all complete as per specification.	SQM	100.00	50.00	30.00	20.00
I(c)	One outer 6mm thick tinted heat-reflecting toughened glass and one inner 6mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) ≥62 %, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) $0.2 \leq 0.32$ and U- Value 1.2 TO 2.5 W/MSq K,The properties of performance glass shall be as per detail design values as approved by engineer incharge.The glass to be used should be from the approved manufacturers of glass and should be free from distortion and thermal stress.	SQM	250.00	125.00	75.00	50.00
I(d)	Fire rated glass min.14mm thick fire resistant clear, toughened, interlayered clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass complying to BS476 Part22 or (EN-1634-1 :1999) with a light transmission of 86% according to EN410 standards and sound reduction of >=37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4 The glass shall provide bidirectional (Symmetrical) fire protection. as per specification and instruction of engineer in charge.	SQM	350.00	175.00	105.00	70.00
An	8 mm thick laminated toughened glass	SQM	150.00	75.00	45.00	30.00
Aq	6mm thick laquered glass as per approved shade colour and design.	SQM	25.00	12.50	7.50	5.00
Ar	Heat Strengthened Coloured tinted float glass 6mm thick substrate with reflective soft coating on outer face+12mm Airgap + 6mm Heat Strengthened clear Glass of approved make, having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 1.5 to 1.7W/ m2 degree K etc. The properties of performance glass may varies as per decided by technical sanctioning authority as per the site requirement.	SQM	50.00	25.00	15.00	10.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
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	1050.00	525.00	315.00	210.00
919	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	50.00	25.00	15.00	10.00
A920	Providing and erecting Roof skylight structure with 4mm thick embossed clear translucent polycarbonate IR sheet, both side UV coated, minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated Aluminium section with 60mm width top & bottom with EPDM rubber gasket in approved shape like dome, pyramidal etc, sealing of joints with sealent, screws with pvc cap, self tapping screws, EPDM rubber gasket.etc as per drawing, standards, specification, instruction of engineer in charge etc all complete.(Structural Steel will be paid separately) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	500.00	250.00	150.00	100.00
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.					
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	875.00	437.50	262.50	175.00
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	3500.00	1750.00	1050.00	700.00
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.					
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	175.00	87.50	52.50	35.00
1014	Extra over item no. 1002 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	CUM	150.00	75.00	45.00	30.00
b	Height exceeding 20m from FGL but not exceeding 30m	CUM	50.00	25.00	15.00	10.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
c	Height exceeding 30m from FGL but not exceeding 40m	CUM	25.00	12.50	7.50	5.00
1015	Extra over item no. 1003 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	SQM	100.00	50.00	30.00	20.00
b	Height exceeding 20m from FGL but not exceeding 30m	SQM	50.00	25.00	15.00	10.00
c	Height exceeding 30m from FGL but not exceeding 40m	SQM	25.00	12.50	7.50	5.00
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					
1101	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	500.00	250.00	150.00	100.00
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	14000.00	7000.00	4200.00	2800.00
1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	26250.00	13125.00	7875.00	5250.00
1207	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	500.00	250.00	150.00	100.00
1208	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (chicken wire mesh to be paid separately)	SQM	875.00	437.50	262.50	175.00
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
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	200.00	100.00	60.00	40.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1304	Two or more coats of Low VOC (volatile organic compound, less than 50g/L) acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge	SQM	12500.00	6250.00	3750.00	2500.00
1305	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	1500.00	750.00	450.00	300.00
A1305	Providing and applying two or more coats of low VOC (volatile organic compound) acrylic emulsion paint as per IS 15489, relevant latest code 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. Note: The paint should have VOC content limit less than 50 grams per litre. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	5000.00	2500.00	1500.00	1000.00
A1306	Providing and applying 2 or more coats of oil resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	1500.00	750.00	450.00	300.00
B1306	Providing and applying 2 or more coats of acid/alkali resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	1400.00	700.00	420.00	280.00
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	100.00	50.00	30.00	20.00
1308	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, inclusive of intermediate coat of Titanium dioxide / micaceous iron oxide complete as per specifications.	SQM	100.00	50.00	30.00	20.00
1309	Two or more coats of fire resistant transparent paint (@3.5 sqm per litre per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made seperately.	SQM	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete. Note: The paint should have VOC content limit less than 150 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	100.00	50.00	30.00	20.00
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	1250.00	625.00	375.00	250.00
A1313	Providing and applying ready made Epoxy Paint over areas other than steel structure/flooring with suitable pigments of approved shade as per specification and direction of Engineer. Epoxy Painting shall be provided with surface preparation of concrete substrate with Captive Shot Blasting Machine OR Light Grinding to form the required anchor profile on the floor substrate followed by application of epoxy resin based moisture barrier underlay of 2 mm thickness including filling of saw cut joints with epoxy cementitious resin based moisture barrier underlay as per manufacturer specification. Application of self smoothing epoxy floor topping of epoxy based resin of 2 mm thickness over epoxy resin based moisture barrier underlay including application of solvent free epoxy resin based two component primer shall include application of PU Sealant at Expansion and Isolation Joint respectively including surface preparation of the joint, fixing of backup strip and application of sealant etc all complete as per specification. The epoxy coating shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 4 mm thickness.	SQM	500.00	250.00	150.00	100.00
A1314	Providing and applying resin bonded granular textured finish,shall consist of crushed stone/special quality Silica quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, acrylic modified exterior adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film nominal thickness of 2.5 mm from approved manufacturer Asian ,Luxture, Berger or equivalent.The final finished coating shall be fungus resistant, UV resistant, water resistant & repellent and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	75.00	37.50	22.50	15.00
A1315	Providing and applying three coats of Solvent based (100% pure acrylic co-polymer resin based) paint (shall not contain any water sensitive ingredients)of approved brand and manufacture and required shade over one coat of primer or one coat of cement paint after necessary cleaning/ washing, removing loose & flaking materials, removing mould, algae, organic growth & grease, preparing the surface using coir brush/ wire brush, sand paper, including all required tools, material, scaffolding and other painting accessories, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish. The final finished coating shall be fungus resistant, UV resistant, water resistant & repellent and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	75.00	37.50	22.50	15.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1317	Providing and applying 2 mm thick Acrylic wall putty punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	25000.00	12500.00	7500.00	5000.00
A1319	Providing and applying two or more coats of weather coat paint of Premium Acrylic Smooth Paint with Silicone additives, over and including Texture base coat, of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellent and extremely durable with color fastness as per specification. Textured base coat (Two or more coats applied @ 6.5Kg/10 sqm over and including priming coat of exterior primer applied @ 2.20Kg/10 sqm) of High Quality Exterior Acrylic Modified resin and special quality Silica Quartz with Trowel Texture (Asian / Dulux / Nerolac / Berger / Equivalent as per selection).	SQM	12500.00	6250.00	3750.00	2500.00
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2(1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges etc. all complete The ratio of approved quality metallic hardening compound and cement shall be 1:4.(Quoted item rate shall be inclusive of providing glass joint strips).	SQM	7500.00	3750.00	2250.00	1500.00
B1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with non- metallic hardener pigmented topping 12mm thick uniform graded hardener in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick hardener concrete of mix 1:2(1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including as per manufacturer specification, cement slurry, rounding off edges etc. all complete.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification. (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	15000.00	7500.00	4500.00	3000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, etc. all complete as per specification.The ratio of approved quality metallic hardening compound and cement shall be 1: 4.	SQM	100.00	50.00	30.00	20.00
B1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with Non-metallic hardener pigmented topping of 10 mm thick uniform graded in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick with hardener concrete of mix 1:2 (1 cement hardner mix with approved quality hardening compound :2 stone aggregate 6mm nominal size) by volume as per manufacturer specification including,cement slurry, rounding off edges etc. all complete as per specification.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification.	SQM	500.00	250.00	150.00	100.00
C1402	Providing and laying 25 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with 10 mm thick uniform graded particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick cement mortar 1:2 (1 cement :2 sand) by volume including cement slurry, rounding off edges etc. all complete as per specification.	SQM	100.00	50.00	30.00	20.00
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum/quartz chips topping pigment content is 3.5 kg per 50 Kg of white Cement) of size 300X300X25mm thick of approved shade as per IS 1237, including minimum 20mm cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc.(inclusive of cost of cement for tiles manufacturing) all complete for following: Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	Laid in floors	SQM	2500.00	1250.00	750.00	500.00
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 20mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing) Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
b	80mm	SQM	2500.00	1250.00	750.00	500.00
1410	Marble stone Flooring laid in 50mm overall thickness with 18-20mm thick marble slabs (grade -1) with minium 30mm 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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00	25.00	15.00	10.00
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	750.00	375.00	225.00	150.00
A1412	Providing and laying 20mm thick Mirror polished (6 layers of polish)/Flame finish (making top surface rough by burning / shot blasting)Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 1.5 sand : 3 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, moulding, cornice, curing, grinding, granite polishing etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	250.00	125.00	75.00	50.00
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	10mm thick tiles In flooring	SQM	300.00	150.00	90.00	60.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B1416	Providing and laying heavy duty Antiskid full body vitrified tiles 18-20 mm thick of size 600x600mm in flooring, of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent ,complete including underbed of cement mortar 1:3 minimum 30mm thick for flooring with neat cement slurry @3.3Kg/sqm etc.all complete. Full body Vitrified Tiles shall be laid on properly laid levelled floor, with joints 3 to 5mm wide & 8 to 10mm deep & shall be filled with approved Epoxy Grout mix of 0.70kg of organic coated filler of desired shade (0.10kg of hardener and 0.20kg of resin per kg). Full body Vitrified Tiles shall have water absorption less than 0.5%, Modulus of Rupture more than 38N/mm2, Breaking strength more than 7500N, Moh's scale more than 6, Abrasion resistance less than 144 mm3 and coefficient of friction more than 0.4. Vitrified Tiles shall generally conform to IS: 15622. All complete (including cost of epoxy grouting)as per engineer incharge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	3500.00	1750.00	1050.00	700.00
D1416	Providing and laying matt finish vitrified ceramic tiles of polished variety of size 600x600 / 800x800 of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent , complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc.,3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	9.0 mm (min.) thick tiles In flooring	SQM	1000.00	500.00	300.00	200.00
b	9.0 mm (min.) thick tiles In dado	SQM	250.00	125.00	75.00	50.00
1417	Providing and laying vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturercomplete 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:- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
d	10mm thick tiles In skirting and dado upto specific height	SQM	75.00	37.50	22.50	15.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1417	Providing and laying Digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer Smpolo, varmora or equivalent complete including minimum 40 mm thick underbed of cement mortar 1:4 for flooring and 12mm thick underbed of cement mortar 1:3 for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following:- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	9.00 mm (min.) thick tiles In flooring	SQM	2500.00	1250.00	750.00	500.00
d	9.00 mm (min.) thick tiles In skirting and dado upto specific height	SQM	100.00	50.00	30.00	20.00
B1417	Providing and laying vitrified ceramic tiles of matt finish variety of size 1000X1000 from reputed / approved manufacturer, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete,Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	9.5 mm thick tiles In flooring	SQM	750.00	375.00	225.00	150.00
C1417	Providing and laying vitrified ceramic tiles of matt finish polished variety of size 1000X1000 from reputed / approved manufacturer Smpolo,varmora or equivalent, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4 mm stainless epoxy grout SP- 100 of Laticrete,Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	10 mm thick tiles In flooring	SQM	150.00	75.00	45.00	30.00
c	10 mm thick tiles In skirting and dado upto specific height	SQM	50.00	25.00	15.00	10.00
A1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of approved manufacturer simpolo, varmora 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 :- Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
b	600X600 mm	SQM	350.00	175.00	105.00	70.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1419	Providing and laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	50.00	25.00	15.00	10.00
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. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	300X300 mm	SQM	50.00	25.00	15.00	10.00
A1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick Designer glazed/matt finish of reputed manufacturer Simpolor, varmora or equivalent of approved finish shade and colour on walls, skirting etc.including 20 mm underbed of cement mortar 1:4 in flooring and cement mortar of 1: 3 for skirting/dado with neat cement slurry etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	300X300 mm	SQM	250.00	125.00	75.00	50.00
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles comply to IS:4457 and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied in flooring/Dado of reputed / approved manufacturer Simpolor, varmora, Naya Rangoli or equivalent of approved finish, shade and colour with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing, pointing joint of bedding 20mm deepx6mm wide with epoxy/Furane mortar etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	20mm thick	SQM	1000.00	500.00	300.00	200.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B1424	<p>Providing & fixing chemical resistant (AR)(Acid / Alkali) tiles (75mm thick) conforming to IS:4457 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by min.12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR tiles shall be filled with resin type mortar of reputed / approved manufacturer Naya Rangoli,Berger or equivalent conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00	75.00	45.00	30.00
C1424	<p>Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115 mm thick) conforming to IS:4860 in the walls of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type mortar of reputed / approved manufacturer Naya Rangoli,Berger or equivalent conforming to IS:4832, part II, of seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00	75.00	45.00	30.00
A1425	<p>Providing and laying polished Marble slabs (rajnagar plain white or equivalent approved shade/color /design) 20 mm thk in staircase landing/skirting and corridors over minimum 30 mm thick underbed of 1 cement : 1.5 sand : 3 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded marbel nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00	250.00	150.00	100.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1426	Providing and laying marble skirting /dado (Approved shade/color /design) equivalent of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed 20mm cement mortar 1:3, with thick cement slurry 3.3kg/sqm spread over the surface scaffolding etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	20.00	10.00	6.00	4.00
A1427	Providing and fixing Designer digitally glazed ceramic tiles of approved color and design as per IS: 15622 of size 300x300mm / 300x450mm, 300X600 of reputed / approved manufacturer Simpolo, varmora or equivalent of approved finish, size in dado, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete as instructed by engineer incharge for following thicknesses. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a	5mm thick	SQM	350.00	175.00	105.00	70.00
b	7mm thick	SQM	350.00	175.00	105.00	70.00
A1428	Providing and laying 2mm thick heavy duty antistatic PVC(Virgin) tile in flooring / skirting of approved shade, from reputed / approved manufacturer Naya Rangoli, robina or equivalent as per IS:3462 and laying as per IS:5318 all complete as per specifications. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1429	<p>Providing and fixing Removable type flooring system (raised access floor) consisting of of fire resistant Cementitious panels of 600 x 600x 35 mm and Laminated with 1.2 mm thick fire retardant food grade antistatic laminate top finish to ensure max bonding to the steel surface. Cementitious panels shall be steel welded construction, with an enclosed bottom pan of 64 hemispherical and top plain sheet which are fuse welded at multiple location to form a panel. The panel is coated with 40-60-micron epoxy coat after cleaning, de-greasing, phosphate by several tank processes & is heated to achieve max adhesion to the panel surface & corrosion resistance. The inner empty core of the panel is injected with a light weight fire retardant, non-combustible cementitious compound at high pressure to fill in all the crevices of the panel and ensures support of not less than 90% of the top surface area of the panel. Pedestal (300mm – 800 mm) must be 25mm dia. pipe with min.2.0 mm thickness with bottom plate of 100x100x min.2.0mm thick & top plate must be 75x75x3.0 mm. All pedestal shall be tightening to Stringer of 20x30x575x1.0 mm Rectangular tube. The system shall be design and taken approval for Uniformly distributed load (UDL) of 13 KN (1300 kg/ sqm), for the same all complete as per specification. Cavity area below the false flooring shall be made dust proof by using Polyurethane paint etc complete as per specification.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00	50.00	30.00	20.00
A1431	<p>Providing and fixing, laying min.15mm wodden panel flooring and skirting of pergo,Robina,greenlam or equivalent multi-layered engineered wooden planks treated with VOC free lacquers and stains to provide extra strengthening, longevity and durability to planks. In all planks each layers are arranged at cross grain to each other for provide the balancing and stability to all three layers. Top layer of flooring is made up of about 3.0 mm thick thermosetting re-polish able natural veneer setting on a core of about 10 mm thick pine wood that produce natural characteristic of wood with 2.0mm thick bottom ply based veneer balancing layer. The planks are joint to each other through plankloc system with glue less technology system and laid on 2mm thick dual barrier underlay protecting sheet having anti-bacterial, Anti-termite, fire-resistant, noise reduction, high wear and abrasion resistance, water resistant properties. The system includes all accessories like beading, Quadrant, Veneered/solid wood skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00	75.00	45.00	30.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B1431	Providing and laying minimum 50 mm thick wooden flooring, consisting of 35 mm thick hardwood planks, finished with min. 15mm thick wooden flooring of greenlam, pergo or equivalent with min. plank size 193x1195mm (material class shall be 34 as per EN13329) of approved color and shade, over 2 mm expanded polystyrene foam and polythene sheet under laying all complete as per manufacturer specification. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00	50.00	30.00	20.00
A1432	Providing and laying Decorative/designer pre-polished, plain and pigmented, high wearing resistance concrete tiles of 20mm thickness (minimum) in various non-standard interlocking patterns of approved color,shade all complete as per specification. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00	50.00	30.00	20.00
A1433	Providing and laying Tactile, tac liner & tac button fully vitrified unglazed porcelain tile (for guiding band/s for visually impaired persons), size 300x300 15mm thick having Tile body 10mm thick plus profile 4.5mm thick. Low water absorption below 0.5%. MOR > 38NCM2, MOH Hardness >7 & Breaking strength > 4000 N. Tile confirming RNIB (The royal national institute for the blind, UK) , DETR (Department of the environment, transport and the regions, UK), & ADA (American With Disabilities Act, USA) , high stain and chemical resistance. Confirming IS 4457: 2007. Tile will be laid on 20mm thick cement & sand mortar with cement slurry having 4mm spacer & pointing with 3X4mm stainless epoxy grout / polymer based SP- 100 of Laticrete or approved equivalent in approved colour. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	100.00	50.00	30.00	20.00
A1434	Providing and fixing carpet flooring over cement concrete floor. The carpet shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with under lay of 10mm thick and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specification.(Cement concrete flooring to be paid separately)	SQM	100.00	50.00	30.00	20.00
A1435	Providing and fixing Glass mosaic tiles at finished plain wall surface of size 24 mm x 24 mm x 3.8 mm thick (minimum) in in decorative murals and pattern of approved colour, shade, design , fixing in customize design, as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the vertical wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	500.00	250.00	150.00	100.00

Annexure B

PROJECT: Various project sites of BHEL across India

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SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1436	<p>Providing and fixing Rubber flooring over cement concrete floor min. 4mm thick conform to IS 809, consist of 100% virgin elastomer reinforcing agents, resins, curing agents, anti-oxidants and pigments. The rubber flooring shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with suitable under lay and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specifications. Rubber flooring shall have excellent abrasion resistance, comply to class-I fire rating, acid & alkali resistant and shall be of anti static grade. (Cement concrete flooring to be paid separately)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	150.00	75.00	45.00	30.00
1500	<p>ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, lags, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.</p>					
A1504	<p>Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa complying AS1397 and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint of minimum dry film thickness (DFT) 20 microns (nominal) over suitable primer coat of 5mm DFT (nominal). Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 10 microns (nominal) over suitable primer of 5mm DFT (nominal). The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	4000.00	2000.00	1200.00	800.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1505	Designing, providing and fixing External/ Inner sheet of Permanent colour coated metal cladding / roofing with troughed M.S. sheets of minimum 0.5 mm bare metal thickness of min. grade G350 as per AS1397/grade SS340 class 4 or as per ASTM A792M/ grade S350 GD as per EN 10326 with zinc coating to class Z275 / aluminium zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, etc. all complete over columns, beams, bracings etc. at all levels. The exposed face the sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron and minum 10 micron SMP or super polyester paint over primer coat of minimum 5 micron on other face. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	25000.00	12500.00	7500.00	5000.00
1511	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
a)	For insulation in Sandwich Cladding	SQM	850.00	425.00	255.00	170.00
1512	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%					
c)	Mineral wool/rock wool insulation(density 48 kg/cum) bound in polythene bags laying on top of false ceiling panels at all height and levels as per instruction from engineer in-charge.	SQM	700.00	350.00	210.00	140.00
A1514	Providing and fixing underdeck insulation with resin bonded rock wool /Mineral wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum with minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.6 mm dia and 25 mm mesh GI wire netting, fixed with 2mm wire ties at various elevations with rawl plugs including clips, etc complete as per specifications and instructions of the engineer incharge. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	5000.00	2500.00	1500.00	1000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1517	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	SQM	325.00	162.50	97.50	65.00
A1519	Designing, providing and fixing Factory made (Continuous Line) prefabricated sandwiched Permanent colour coated metal cladding comprising top sheet as troughed(minimum depth of trough shall be 30 mm) permanently colour coated sheet & bottom sheet as plain permanently colour coated for covering of exposed metal/concrete / brick surfaces with insulation shall be of Polyurethane type of minimum 50mm thick (excluding trough). The polyurethane shall be Chlorofluorocarbon (CFC) free and self-extinguishing and shall conform to IS 12436: 1988. It shall have Modular Density 40 +/- 2 Kg/m3 and Thermal Conductivity @ 10 Deg.C 0.017 - 0.020 W/M Ok, Water absorption (% by vol) 3.1, Critical Oxygen Index 23 and Compressive Strength 1.2 Kg/sq.cm, sandwiched between the two sheets, each sheet shall be high strength tensile steel sheet 0.5mm bare metal thickness (minimum) of YS350 as per IS 15961 /grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z 275 / aluminium-zinc alloy coating to class AZ150 on both sides, both sheet shall be permanently coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint of minimum 20 micron DFT on exposed surface on 5 microns (min.) epoxy primer/phosphate primer coat and 10 micron (min.) SMP on 5 micron (min.) epoxy primer/phosphate primer on other face, SMP paint system shall be of industrial finish of product type 4 of AS/NZS 2728, troughed sheet shall be of approved profile, sectional properties, (suitable for the specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, fixing insulated sandwiched metal sheet with the structural members below for supporting the sheeting system, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications. Sealant used for cladding shall be butyl based, two parts poly sulphide or equivalent approved, non stainless material and be flexible enough not to interface with fit of the sheets. Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. Overlap shall be min. 100 mm or as specified by manufacturer. Payment Breakup: a) Supply & Receipt of material at site - 60%	SQM	2500.00	1250.00	750.00	500.00
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.					

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1601	<p>Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preperation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>					
aa	12.5mm thick GRG board conforming to IS: 2095 with galvanised light gauge steel load bearing supporting GI frame (minimum 0.8mm thk and grid size of 600x1200mm.) and finished flat (seamless).	SQM	100.00	50.00	30.00	20.00
b	12 mm thick GRG board in profile (dome ,curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).	SQM	100.00	50.00	30.00	20.00
A1601	<p>Providing and fixing 12.5 mm thick tapered/square edge glass fibre reinforced gypsum board conforming to IS:2095 having fine texture finish including providing and fixing of frame work at all levels, for all kind of work, consisting of light weight galvanised steel member (minimum 0.8 mm thick and galvanised as per IS : 277) having maximum grid size of 1200 mm x 600 mm for supporting panels of specified size, suspended from RCC slab/ structural steel or catwalkway grid above, with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm width along the perimeter of ceiling, supporting grid system (minimum 0.8 mm thick and galvanised as per IS : 277), expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1602	<p>Providing, fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required M.S. channel shall be measured & paid extra under respective item unit rate. (All mineral fiber board to be used should be with appropriate % of recycled content.)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	2500.00	1250.00	750.00	500.00
A1603	<p>Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy panels of size 600 mm x 600 mm and min. 0.6 mm thk. with clip on torsion spring system, perforation patterns in combination with built in nonwoven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7 and installed with silhouette T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. The whole system shall be level adjusting arrangement and shall be suspended as per manufacturer. 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 D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	5000.00	2500.00	1500.00	1000.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B1603	<p>Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon 150C,300C, of Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy (grade 3105) panels of minimum thickness 0.6mm with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.55. 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 D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00	250.00	150.00	100.00
A1604	<p>Providing, fixing and laying permanently colour coated Designer metal aluminium false ceiling of approved colour with stove enamel finish of approved make of Luxalon Hunter douglas,Newage or approved equivalent in LINEAR, RECTANGULAR, SQUARE, CURVILINEAR , OPEN GRID type etc.as per detail engineering drawing , with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness 0.6mm,with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc.Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00	250.00	150.00	100.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B1604	<p>Providing, fixing and laying permanently colour coated Designer metal Batten panel aluminium false ceiling of colour with stove enamel finish of approved make of Luxalon Hunter douglas, Newage or approved equivalent in combination with demountable translucent stretch ceiling members etc. as per detail engineering drawing & manufacturer specification with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness MIN. 0.6mm. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00	60.00	36.00	24.00
1605	<p>Providing, fixing and laying anodised natural colour matt finished aluminium false ceiling of Jindal/Hindalco make with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc. shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00	60.00	36.00	24.00
1606	<p>Providing and Fixing 12mm thick Gypsum board plain/perforated false ceiling tiles (600x600mm) of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. metal suspension system as per ASTM C-635 shall be hot dipped M.S. galvanized (grade 180 as per IS : 277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. suspension system shall be as per manufacturer's specification supported over movement platform. The work to be complete as per specifications, drawings and direction of engineer. (Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00	60.00	36.00	24.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1607	<p>Providing and Fixing 12mm thick Gypsum board plain/ mineral fibre based acoustic ceiling board in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00	60.00	36.00	24.00
A1607	<p>Providing and Fixing 12mm thick Calcium silicate board of HILUX or equivalent in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ). Work shall include 25mm thick resin bonded mineral wool insulation (as per IS:8183) bound in polythene bags on top of ceiling. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	500.00	250.00	150.00	100.00
1608	<p>Providing & fixing 12.5 mm thick glass fibre reinforced gypsum plastic board in plan curve or in elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete, as per architectural design and detail, metal suspension system as per ASTM C-635 shall be hot dipped MS galvanized (grade 180 as per IS:277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24 mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	120.00	60.00	36.00	24.00

Annexure B

PROJECT: Various project sites of BHEL across India

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SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1608	<p>Providing and fixing Pre-Painted Coil coated Steel false ceiling system, at all level, for all kind of works, in approved pattern,consisting of 0.5 mm thick galvanised as per IS 277 including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. , along with galvanised supporting steel members exposed faces of galvanised member to be prepainted with regular modified polyester coating / super polyester coating minimum 20 DFT, to form panels of specified size for tile type panels and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalk way steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	1500.00	750.00	450.00	300.00
A1609	<p>Providing and fixing stainless Steel false ceiling system in lineal/tile shape, approved colour Luxalon hunter douglas or approved equivalent, lineal pattern (closed type) of 100 mm nominal width , bright finish at all level, for all kind of works, consisting of 0.5 mm thick stainless steel sheet, along with galvanised supporting steel members exposed faces of galvanised member to be prepainted with regular modified polyester coating / super polyester coating minimum 20 DFT and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalkway steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	SQM	100.00	50.00	30.00	20.00
1700	<p>RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.</p>					

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	2000.00	1000.00	600.00	400.00
B1704	Providing and fixing galvanised MS down take pipes of 200 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	200.00	100.00	60.00	40.00
C1704	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239 (part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over a coat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	10.00	5.00	3.00	2.00
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	50.00	25.00	15.00	10.00
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	5.00	2.50	1.50	1.00

Annexure B

PROJECT: Various project sites of BHEL across India

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Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.					
A1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum/non expansive soil and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	10000.00	5000.00	3000.00	2000.00
B1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of 40 mm size rammed, consolidated in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected fine sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	1500.00	750.00	450.00	300.00
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	500.00	250.00	150.00	100.00
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	150.00	75.00	45.00	30.00
A1804	Providing and fixing weep holes in drains consisting of 75 mm dia HDPE pipe sleeves including sand (250sq x 150 mm thick), aggregates (250sq x 150 mm thick), 200mm dia geo-textiles (pasted on concrete surface) etc. all complete as per specifications, drawings and guided by engineer-in-charge. (item is inclusive the cost of materials like HDPE pipe, sand, aggregates, etc.).	EACH	1500.00	750.00	450.00	300.00
1807	Anti termite chemical treatment of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment). Drilling 12mm dia hole @300 c/c using material one liter per hole.	SQM	2750.00	1375.00	825.00	550.00
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	200.00	100.00	60.00	40.00
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	50.00	25.00	15.00	10.00
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	50.00	25.00	15.00	10.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)	NO	50.00	25.00	15.00	10.00
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	NO	50.00	25.00	15.00	10.00
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	NO	50.00	25.00	15.00	10.00
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	NO	50.00	25.00	15.00	10.00
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	25.00	12.50	7.50	5.00
A1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 610 g/sqm etc. all complete.	Kg	250.00	125.00	75.00	50.00
1821	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust supression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	1350.00	675.00	405.00	270.00
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	25.00	12.50	7.50	5.00
1827	Anti weed chemical treatment of soil with suitable chemical etc all complete.	SQM	20000.00	10000.00	6000.00	4000.00
1849	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	100.00	50.00	30.00	20.00
1850	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	100.00	50.00	30.00	20.00
1851	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	25.00	12.50	7.50	5.00
1852	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	50.00	25.00	15.00	10.00
1853	Providing, laying and fixing rails and guide rails in concrete for transformer, rail track(52 kg/m) including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	MT	50.00	25.00	15.00	10.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1860	Providing and installation of Bio-Toilet near all the modular worker's sheds/accommodation etc all complete as per specification.	Nos	10.00	5.00	3.00	2.00
A1862	Supplying and installation of pipes in concrete / Duct bank for all kind of works, including setting material in concrete, layout, cutting, forming, grinding, jointing etc. all complete as per specification and as guided by engineer-in-charge for the following: (Concrete, Reinf. paid separately)					
a	200 mm dia HDPE Pipes	RM	1000.00	500.00	300.00	200.00
b	200 mm dia PVC pipe ISI mark 6 Kg/cm2	RM	200.00	100.00	60.00	40.00
A1864	Providing and fixing Semi Unitised STRUCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium sections of grade 63400 WP IS: 733 and IS: 1285 pure polyester powder coated 50- 60 microns make; Akzo Nobel applicator only in approved colour with mullion fixed to beams / columns through adequately designed MS powder coated. The member and bracket shall be fixed with appropriate bolts and expansion fasteners, so as to withstand the dead load of the structural glazing as well as stresses due to wind pressure. The Structural glazing system shall be designed as per BIS code for required wind pressure IS: 875 part III (the system must passed the proof test at 1.5 times design Wind pressure without any failure), with as per the prevailing site conditions and building profiles, including functional design of the aluminium sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)- cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation & drainage and protection against fire hazard including, Fabrication and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers and use of aluminium section alloy as per IS : 8147. System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement, submit the calculation for review and approval of shop / fabrication/shop drgs, cutting plan, from BHEL. Silicon sealant structural grade and weather grade shall be GE/Dow corning or Equivalent. The contractor shall submit structural stability report of the structural glazing system from a consultant to be get approved by the engineer incharge. Providing and fixing G.I. flashing at soffit level /sill level made out of 1.5mm thick G.I. Sheet with powder coated bent to required profile and shape to seal the soffit area. Openable glazing panel where ever required shall be with two point locking with friction stays, as per detail design requirement, provided with approved hardware of Dorma/Gieeze or equivalent make, all	KG	200.00	100.00	60.00	40.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A1865	Providing, fixing and Fabricating shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi -rigid, inorganic, non-combustible fibre glass wool insulation 50 mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5 mm and nominal mass not less than 60 gm /sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including fixing 1.5mm thick solid aluminum sheet backing using, 6 mm thick cement board including SS rivets, nuts, bolts, washers etc complete.	SQM	200.00	100.00	60.00	40.00
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.					
A2001	Supplying and erecting in position 1.95 m high PVC coated gavanised chain linked fencing of minimum 4 mm (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. GI barbed wire fencing of height of 450 mm conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under item A2008). Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%	RM	2500.00	1250.00	750.00	500.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A2003	<p>Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. Concertina of height of 600 mm at top of chain link fencing shall be provided and fixed with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. A2008)</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	RM	1250.00	625.00	375.00	250.00
A2008	<p>Supply, fabrication and fixing of mild steel posts for fencing including painting with chlorinated rubber paint over a suitable primer etc all complete.</p> <p>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	MT	75.00	37.50	22.50	15.00
2009	<p>Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, 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>Payment Breakup: a) Supply & Receipt of material at site - 60% b) Execution & Services Associated with the item - 40%</p>	MT	30.00	15.00	9.00	6.00
2100	<p>WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.</p>					
A2101	<p>Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks with flow rate less than 5 LPM (litres per minute) at 45 psi, including sockets, union, nuts etc all complete -15mm nominal bore.(Note: Flow rate of all faucets at 45 psi should be less than 5 lpm. The contractor should submit the cutsheets/ declaration from the manufacturers mentioning the same to Engineer in charge.)</p>	NOS	75.00	37.00	23.00	15.00
2102	<p>Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.</p>	NOS	75.00	37.00	23.00	15.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
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	50.00	25.00	15.00	10.00
b	50mm nominal bore.	NOS	50.00	25.00	15.00	10.00
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	125.00	62.50	37.50	25.00
b	20 mm nominal bore.	RM	50.00	25.00	15.00	10.00
c	25 mm nominal bore.	RM	50.00	25.00	15.00	10.00
d	50 mm nominal bore.	RM	25.00	12.50	7.50	5.00
B2104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, confirming to IS 15778, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings shall be concealed, complete for internal works with sockets, unions, elbows, tees, nipples etc of approved manufacturer supreme,prakash,ajay pipes or equivalent and clamps including cutting and making good the walls etc all complete for following sizes:					
a	15 mm nominal bore.	RM	100.00	50.00	30.00	20.00
b	20 mm nominal bore.	RM	50.00	25.00	15.00	10.00
Ac	32mm nominal bore	RM	25.00	12.50	7.50	5.00
d	50 mm nominal bore.	RM	20.00	10.00	6.00	4.00
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	75.00	37.50	22.50	15.00
b	20 mm nominal bore.	RM	40.00	20.00	12.00	8.00
c	25 mm nominal bore.	RM	40.00	20.00	12.00	8.00
d	50 mm nominal bore.	RM	20.00	10.00	6.00	4.00
A2106	Providing and fixing 600mm x 900mm x 6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws , edge mounting with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	40.00	20.00	12.00	8.00
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	40.00	20.00	12.00	8.00
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	75.00	37.00	23.00	15.00
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	75.00	37.00	23.00	15.00
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.	NOS	35.00	17.00	11.00	7.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A2113	Providing and fixing rotating type chromium plated brass shower rose with 15 or 20 mm inlet all complete.	NOS	25.00	12.00	8.00	5.00
B2113	Providing and fixing rotating type Emergency safety shower,conforming to IS 10592 latest code, head with water column of height 210 to 240 cm is provided from the standing level.water column provided with a minimum spray pattern diameter of 50 cm at 150 cm height from standing level and the centre of the spray pattern shall be located at least 40 cm from any obstruction or emergency. Shower head shall be so designed that it produces a straight water column. Emergency shower head shall deliver a minimum of 76 l/min of water and substantially dispersed throughout the pattern,complete with installation,with accessories etc all complete.	NOS.	5.00	3.00	1.00	1.00
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	10.00	5.00	3.00	2.00
b	1000 litres capacity	NOS	15.00	7.00	5.00	3.00
c	2000 litres capacity	NOS	15.00	7.00	5.00	3.00
d	5000 litres capacity	NOS	10.00	5.00	3.00	2.00
2115	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	NOS	15.00	7.00	5.00	3.00
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	15.00	7.00	5.00	3.00
A2117	Providing and fixing metal storing cabinets 4(Four) Drawer Metal File Storage Cabinet with Central Locking System, Powder Coated (Approx size 54" X 18.5" X 27" Inch, Grey) all complete	EACH	15.00	7.00	5.00	3.00
A2118	Providing and fixing electric operated hand dryer with photo voltaic control.etc all complete..	EACH	15.00	7.00	5.00	3.00
A2120	Providing and fixing stainless steel (SS304) Grab bars min.32mm dia, min.38 inches long, U-Shaped, swing type adjusts both horizontally and vertically, barrier-free access for disabled, appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	75.00	37.00	23.00	15.00
2200	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.					
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 mounted over 18 to 20 mm thk granite beveled edge counter. The Basin shall be fitted with approved shape bib cock, photo-voltic control system for water control with flow rate less than 5 LPM (litres per minute) at 45 psi,CP brass chain with rubber plug, 40mm CP brass waste and bottle trap as per IS: 2556 with angle valve,taps,32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required,necessary union including cutting of notch in granite counter slab etc.all complete as per specification	EACH	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A2202	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 heavy duty CP brass waste bottle trap and 15mm CP brass pillar tap (hot and cold dual function) with elbow, operated level ISI marked, with necessary union, elbow, angle valve, tees, junctions, extension pipes complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	5.00	3.00	1.00	1.00
A2203	Providing and fixing stainless steel kitchen sink of size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, hot and cold water mixer, conforming to IS: 13983 including all fittings, necessary union, elbow, angle valve, tees, junctions, extension pipes etc. all complete.	EACH	5.00	3.00	1.00	1.00
B2203	Providing and fixing stainless steel Eye wash sink of size size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, water mixer, conforming to IS 10592 latest code including all fittings, necessary union, elbow, angle valve, tees, junctions, extension pipes etc. all complete.	EACH	4.00	2.00	1.00	1.00
A2204	Providing and fixing colour glazed vitreous china European type water closet of approved make 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, dual flushing system) with valveless fittings, 2 way angle valve, with health faucet necessary C.P connections, water faucet etc all complete.					
a	Floor mounted	EACH	7.00	4.00	2.00	1.00
b	Wall mounted	EACH	60.00	30.00	18.00	12.00
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.	EACH	60.00	30.00	18.00	12.00
A2205	Providing and fixing colour glazed vitreous china 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 having flow rate of 6/3 LPF (litres per flush) or less at 45 psi.	EACH	100.00	50.00	30.00	20.00
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 610x375x390mm with photo voltaic control flushing systems of approved manufacturer simpolo, varmora or equivalent per IS: 2556(pt-6 sec-1) with flush pipes, lead pipes, gratings, traps and necessary C.P fitting etc. all complete as per specification having flow rate of 2 LPF (litres per flush) or less at 45 psi.	EACH	100.00	50.00	30.00	20.00
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	125.00	62.50	37.50	25.00
b	110mm dia pipes	RM	150.00	75.00	45.00	30.00
c	160mm dia pipes	RM	75.00	37.50	22.50	15.00
d	200mm dia pipes	RM	100.00	50.00	30.00	20.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
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. Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	200mm dia	RM	200.00	100.00	60.00	40.00
b	300mm dia	RM	1500.00	750.00	450.00	300.00
c	450mm dia	RM	650.00	325.00	195.00	130.00
d	600mm dia	RM	50.00	25.00	15.00	10.00
e	900mm dia	RM	25.00	12.50	7.50	5.00
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following. Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	150mm dia	RM	375.00	187.50	112.50	75.00
b	250mm dia	RM	50.00	25.00	15.00	10.00
c	300mm dia	RM	50.00	25.00	15.00	10.00
d	450mm dia	RM	25.00	12.50	7.50	5.00
e	500mm dia	RM	25.00	12.50	7.50	5.00
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following: Payment Breakup: a) On Supply & receipt of material site - 50% b) On complete execution as per item description - 50%					
a	450mm dia	RM	50.00	25.00	15.00	10.00
b	600mm dia	RM	20.00	10.00	6.00	4.00
c	900mm dia	RM	20.00	10.00	6.00	4.00
A2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx600mm including frame from reputed manufacture confirming to IS:4111 etc all complete as per specification.	EACH	50.00	25.00	15.00	10.00
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	50.00	25.00	15.00	10.00
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:					
a	100x100mm P or S Type.	EACH	30.00	15.00	9.00	6.00
b	150x100mm P or S Type.	EACH	20.00	10.00	6.00	4.00
c	150x150mm P or S Type.	EACH	20.00	10.00	6.00	4.00
A2214	Providing and fixing Heavy duty CP brass floor traps size 100mm with stainless steel grating etc all complete.	EACH	50.00	25.00	15.00	10.00
A2216	Providing and installing approved brand single tap water efficient water cooler of 50 L cooling capacity all complete.	EACH	5.00	3.00	1.00	1.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B2216	Providing and installing approved brand single tap water efficient water cooler of 80 L cooling capacity all complete.	EACH	5.00	3.00	1.00	1.00
A2217	Providing and installing approved brand single tap water efficient water cooler of 150 L cooling capacity all complete.	EACH	5.00	3.00	1.00	1.00
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	2.00	1.00	1.00	
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	20.00	10.00	6.00	4.00
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)					
b	100mm dia	RM	50.00	25.00	15.00	10.00
c	150mm dia	RM	110.00	55.00	33.00	22.00
d	200mm dia	RM	200.00	100.00	60.00	40.00
e	250mm dia	RM	25.00	12.50	7.50	5.00
f	300mm dia	RM	25.00	12.50	7.50	5.00
2222	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.					
a	Upto 75 mm dia	RM	10.00	5.00	3.00	2.00
b	100 mm dia	RM	10.00	5.00	3.00	2.00
c	150 mm dia	RM	30.00	15.00	9.00	6.00
d	200 mm dia	RM	10.00	5.00	3.00	2.00
2223	Providing and fixing vertical wall mounted water geysers/heaters(minimum 5 star rating) of required capacity including all connections & fittings(angular stop cock and brass connection pipes, etc.) all complete as per specification.					
a	15 Litres	Each	5.00	3.00	1.00	1.00
b	25 Litres	Each	8.00	4.00	2.00	2.00
A2224	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 50 mm domestic water inlet pipe	NOS.	7.00	4.00	2.00	1.00
A2225	Supply, laying and jointing sand cast iron pipe conforming to IS: 1729 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	110mm dia pipes	RM	10.00	5.00	3.00	2.00
b	160mm dia pipes	RM	50.00	25.00	15.00	10.00
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
D2301	<p>Fabrication(Site Welded as per specification), transportation from fabrication yard and erection of Mild structural steel (Grade designation E250) with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete.(Rate shall be exclusive of surface preparation and primer).</p> <p>Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%</p>	MT	250.00	125.00	75.00	50.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
F2301	Erection of shop fabricated (field connections will be welded type) Mild structural steel (Grade designation E250), Medium and High Tensile structural steel (Grade designation E350 or higher) with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including loading,transportation,unloading,collection of steel from stores, machining,welding, electrodes and other consumables, alignment, true to line, level, plumb & dimension,erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating,testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete as per approved drawing, specification and approval of engineer in charge. Payment Breakup:- 1) On Completion of erection-60% 2) Balance on completion of alignment,welding etc.-40%	MT	100.00	50.00	30.00	20.00
A2302	Extra over ST NO. D2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/- 2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	MT	250.00	125.00	75.00	50.00
A2305	Providing and applying (with airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT to be applied after an interval of minimum 24 hours (from the application of primer coat by airless spray technique.) and of approved make including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	250.00	125.00	75.00	50.00

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Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
B2305	Providing and applying Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT shall be applied after an interval of minimum 10 hours (from the application of sealer coat), Colour and shade of the coat shall be as approved by the Employer) over steel sections already having intermediate coats including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	250.00	125.00	75.00	50.00
A2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel conforming to IS:2062 having hot dip galvanisation, surface preparation of shot blast cleaned to Sa 2 ½ finish or cleaned by acid pickling as per ISO 8501-1, in flooring, platforms, drain and trench covers, walkways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%					
a	Minimum galvanisation of 610 g/sqm	MT	50.00	25.00	15.00	10.00
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	100.00	50.00	30.00	20.00
2312	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of material at site - 60% b) On completion of alignment, fixing, etc. complete as per description/specification - 40%	KG	5000.00	2500.00	1500.00	1000.00
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	20.00	10.00	6.00	4.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:					
a	In erected position	MT	20.00	10.00	6.00	4.00
b	In fabrication yard	MT	20.00	10.00	6.00	4.00
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	20.00	10.00	6.00	4.00
2321	Supply, fabrication and fixing of MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	5.00	2.50	1.50	1.00
A2322	Supply, fabrication and fixing of galvanised MS pipe hand railing (Min. 1000 mm high) of 32mm/40mm/50mm dia (Medium Class) including transportation, loading/unloading, painting etc. all complete. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	25.00	12.50	7.50	5.00
2400	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.					
2401	Preparation of sub grade 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	1500.00	750.00	450.00	300.00

Annexure B

PROJECT: Various project sites of BHEL across India

Package Wise Quantities

SCOPE OF WORK:-

Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	500.00	250.00	150.00	100.00
A2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using excavated soil within a lead upto1km soil 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	1000.00	500.00	300.00	200.00
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	150.00	75.00	45.00	30.00
A2404	Providing & laying granular sub-base using close graded material conforming to specification, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	CUM	1500.00	750.00	450.00	300.00
A2406	Providing & Laying water bound macadam sub base/base course with stone aggregate 53 mm to 22.4 mm size stone conforming to MORTH specification (Table 400-9) (IRC 19 -grading -3) mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	500.00	250.00	150.00	100.00

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ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A2410	Providing & laying 40mm bitumen mastic wearing course over concrete pavement 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 as per specification, drawings and as per direction of engineer-in-charge. (Considering bitumen using 10.2% as per MORTH specification).	SQM	5000.00	2500.00	1500.00	1000.00
A2413	Supplying and laying 450mmx250mmx500mm deep precast concrete kerb stone of grade M25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	1000.00	500.00	300.00	200.00
B2413	Supplying and laying 300mmx250mmx150mm deep precast concrete kerb stone of grade M-25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	1000.00	500.00	300.00	200.00
A2415	Supply and laying 200mm dia R.C.C NP3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	250.00	125.00	75.00	50.00
A2419	Providing and laying cement concrete of grade M35/M40 using 20 mm nominal size stone aggregate with including addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent, 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	1000.00	500.00	300.00	200.00
A2421	Providing & laying dry lean cement concrete of grade M10 with 20 mm nominal size graded stone aggregate over a prepared sub-base including compaction, finishing, curing etc all complete	CUM	750.00	375.00	225.00	150.00
B2421	Providing and laying of plain cement concrete of grade M15 using 40 mm graded stone aggregate including providing and fixing formwork, compaction etc. all complete	CUM	350.00	175.00	105.00	70.00
	REINFORCEMENT					
A2423	Providing and fixing in position MS dowel bar reinforcement including surface painted with epoxy, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	10.00	5.00	3.00	2.00

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Framework Agreement (Rate Contract) for Execution of Balance Civil, Structure and Architecture Works at various project sites of BHEL across India

ST NO	ITEM DESCRIPTION	UOM	Total Qty	Package-I Qty	Package-II Qty	Package-III Qty
A2424	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	1.00	0.50	0.30	0.20
	MISCELLANEOUS					
A2425	Providing & installation of bitumen impregnated fibre board of 20mm thickness conforming 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.	RM	50.00	25.00	15.00	10.00
A2426	Providing and filling in position hot applied bitumen sealing compound (Grade A) of 20 mm thick conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	400.00	200.00	120.00	80.00
A2427	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM	1000.00	500.00	300.00	200.00
A2428	Providing & laying 75 mm thick precast interlocking concrete pavers of grade M35 of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	1500.00	750.00	450.00	300.00
A2429	Providing and laying 20mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	1500.00	750.00	450.00	300.00
A2430	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	3000.00	1500.00	900.00	600.00
A2431	Supplying, fixing and removing formwork for concrete road pavement complete as per specification and as directed by the engineer-in-charge.	SQM	100.00	50.00	30.00	20.00
	PROVIDING T&Ps ON RENTAL HIRING BASIS (CONSIDER WORKING TIME - 8 HOUR PER DAY)					
T&P-1	Hiring of Poclain 200 having bucket capacity of 1 Cum with diesel and operator	Day	312.00	156.00	93.60	62.40
T&P-2	Hiring of JCB 4Dx with diesel and operator	Day	312.00	156.00	93.60	62.40
T&P-3	Hiring of Dumper having approx. 16 Cum of Capacity with diesel and operator	Day	624.00	312.00	187.20	124.80
T&P-4	Hiring of Vibro Roller having approx. 12 Tonne Capacity with diesel and operator	Day	312.00	156.00	93.60	62.40
T&P-5	Hiring of Dozer 80D with diesel and operator	Day	312.00	156.00	93.60	62.40
T&P-6	Hiring of Boom Placer having 30 Cum Capacity with diesel and operator	Day	156.00	78.00	46.80	31.20
T&P-7	Hiring of Farana having 14 MT Capacity with diesel and operator	Day	312.00	156.00	93.60	62.40
	PROVIDING MANPOWER FOR MISCELLANEOUS WORKS AT PROJECT SITES ON REQUEST OF BHEL SITE-IN-CHARGE (CONSIDER WORKING TIME - 8 HOUR PER MANDAY)					
MP-1	Deployment of experienced skilled manpower like Carpenter, Bar Bender/Binder, Mason, Painter, Fabricator, Fitter, Rigger, etc.	Manday	6240.00	3120.00	1872.00	1248.00
MP-2	Deployment of experienced un-skilled manpower for supporting above skilled manpower	Manday	12480.00	6240.00	3744.00	2496.00