

Corrigendum - 2 dated 24/05/2024 to CPC Tender No. BHEL/CPC/LRA/TG FDN/25/010

Corrigendum - 2 dated 24/05/2024 To CPC Tender No. BHEL/CPC/LRA/TG FDN/25/010 for the work of “CIVIL AND ARCHITECTURAL WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT # 1 AND UNIT # 2 - EXCLUDING SUPPLY OF CEMENT & REINFORCEMENT STEEL (TMT) AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA”.

A) Time Extension: Clause No. 1.0 Salient Features of NIT in NOTICE INVITING TENDER is revised as below:

Sl. No.	Clause No.	Existing in Tender	Revised As
1	Sl. No. v) DUE DATE & TIME OF OFFER SUBMISSION.	Date: 24/05/2024, Time: 10:00 Hrs	Date: 28/05/2024, Time: 10:00 Hrs
2	Sl. No. vi) OPENING OF TENDER	Date: 24/05/2024, Time: 16:30 Hrs	Date: 28/05/2024, Time: 16:30 Hrs

B) The following clauses of Technical Conditions of Contract (TCC) are revised as below;

Sl. No.	Reference clause of Tender Document	Existing Clause	Revised Clause
1	Clause 3.12.1 of TCC	Construction water shall be arranged by bidder. Bidder has to make arrangement of further distribution of water at his own cost. No extra payment shall be made under this account.	Case-I: NTPC will provide construction water on chargeable basis at single point. Please refer the clause no. 3.12 of TCC regarding Construction Water. However, in case bidder drawn water from BHEL water storage reservoir on chargeable basis which is approximately 1000mm – 1200mm from Main Power House / TG Foundation / Transformer Yard, then necessary cost of laying water pipe line from NTPC water point to BHEL storage reservoir and construction cost of water reservoir shall be proportionately recovered from bidder. It is also to be noted that further distribution line from BHEL water storage reservoir to bidder’s batching plant / actual construction site shall be constructed by bidder at their own. Case-II: NTPC will not provide construction water; Bidder to arrange construction water at their own.

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Sl. No.	Reference clause of Tender Document	Existing Clause	Revised Clause
2	PART B of Chapter-X: BILL OF QUANTITIES AND % WEIGHTAGE OF INDIVIDUAL ITEMS of TCC	BOQ Cum Rate Schedule	Revised BOQ cum Rate Schedule is attached as Annexure – 1.

C) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are furnished below:

Sl. No.	Reference clause of Tender Document	Existing Clause	Bidder's Query	BHEL's Response
1	Tech. Specification Section VI part B /8.02.03.f	As per Tech. Spec. The UPV test to be done on TG top deck, TG column , BFP top deck	As Per BOQ you have included TG top deck UPV in TG deck Concreting item. For BFP top deck you have consider it in separate item. But for TG Column no such UPV test item is provided. Kindly clarify	In case, UPV test is conducted in TG Column then it shall be measured under BOQ item no. 210
2	Tech. Specification Section VI part B	The Design mix for M50 grade concrete is to be done with OPC43 and in case of failure OPC53 shall also be used. Do we have to carry design mix with OPC 43 and OPC 53 both. The cement shall be provided by BHEL for this .	Kindly Clarify	OPC-43 grade cement as per IS-269: 2015 is preferred for Design mix concrete of grade M50. In case the required strength of concrete (M50 grade) is not able to achieve with OPC-43 grade cement considering maximum permissible limit of cement content per Cum of concrete as per IS-456: 2000 (Clause No. 8.2.4.2) then, supplementary cementitious material like Micro Silica shall be allowed to use as per approved design mix of

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				concrete for M50 grade submitted by the contractor. The Micro Silica shall be issued by BHEL free of cost.
3		Do we have to do the Petrographic test and test for residual expansion on aggregate or it is done already for source		It is not required.
4		Steel reconciliation and wastage Limit	Since it a specialised area work only the control on Steel cannot be possible. Kindly make provision for steel wastage according to approved BBS with respect to issued steel	Scrap generated for higher dia TMT (>=25mm dia) may be allowed to use for making chairs with necessary welding. Other condition under this clause shall remain unchanged.
5	Pg No: 17 and Cls No:3.11.1	Construction Power:.....	Tariff rate for construction power may please be indicated.	It shall be as per prevalent rate of DISCOM and type of connection used.
6	Pg No: 13 and Cls No:3.3	Water Supply:.....	BHEL may consider to supply water either free or on chargeable basis. If in the scope of bidder, BHEL to indicate the source of water for the construction work.	Clarifications issued as per Sl. No. B). 1 above (Clause 3.12.1 of TCC has been revised).
7	CI No 2.13.3 of GCC	SECURED ADVANCE AGAINST MATERIAL BROUGHT TO SITE.....	Please clarify - exceptional circumstances for extending secured mobilisation advance. Construction Materials like sand, aggregate etc. will be supplied as per requirement at site, in such case how it will be assessed for payment of secured advance.	Secured advance will not be applicable for Construction Materials like sand, aggregate etc.
8	CI No 2.13.3 of GCC	SECURED ADVANCE AGAINST MATERIAL BROUGHT TO SITE.....	Secured Advance against materials brought to site –This advance shall be paid within how many days of	Tender Conditions shall prevail.

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			procurement on request for payment of advance.	
9	2.17of GCC	PRICE VARIATION COMPENSATION:.....	Applicable date of PVC.	Refer Clause 2.17.6 of GCC: Base date shall be calendar month of the 'last date of submission of Tender'.
10	Cl No 6.4.4.4 of SCC		Since this tender is mainly for TG Foundation, restricting the wastage percentage to 3% may not be feasible as reinforcement arrangement will not have any flexibility to give laps. This is based on our past experience in other projects of BHEL. This clause needs to reviewed and suitably modified.	Scrap generated for higher dia TMT (>=25mm dia) may be allowed to use for making chairs with necessary welding as per IS-275 (Latest). Other condition under this clause shall remain unchanged.
11	CL No 2.2 of TCC	Brief scope of work.....	Please give details of other Facilities as mentioned at Sl-5 of the scope of work	It will be provided during execution.
12			Please clarify the worker shed BOQ item or not	There is no such BOQ items however, bidder to take note of Clause 3.9 of TCC.
13			One of the bidder has asked clarification in the Pre-bid meeting that under which BOQ items cement shall be issued by BHEL free of cost.	Clarifications issued as per Sl. No. B). 2 above (Revised BOQ cum Rate Schedule is attached as Annexure – 1).

Note:

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

Encl: Annexure – 1: Revised BOQ cum Rate Schedule

for BHARAT HEAVY ELECTRICALS LTD
AGM / SCT- CPC

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (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.					
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.					
a	Depth from ground level but not exceeding 2 m	CUM	32101			0.9158596334
b	Depth exceeding 2 m but not exceeding 4 m	CUM	18117			0.6474155571
c	Depth exceeding 4 m but not exceeding 6 m	CUM	3200			0.1429410073
d	Depth exceeding 6 m but not exceeding 8 m	CUM	3000			0.1677251335
103	Earth work in excavation in soft rock including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50			0.0025418139
c	Depth exceeding 4 m but not exceeding 6 m	CUM	250			0.0152508833
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 300mm compacted 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	at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	37765			0.8735743596
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	3000			0.0103747505
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	6453			0.0223160884

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 300mm compacted 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	1338			0.7593648791
B111	Supplying and filling clean and well graded sand (conforming to IS 383 with grading zone I to III) upto any depth under floors, around foundations, plinths, paving, tank foundations, etc. in layers not exceeding 300mm compacted 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	7248			4.6276989717
112	Extra over item no. 101 for shoring and strutting in trenches including packing cavities (wherever required as instructed by engineer) all complete as per specification and as directed by engineer in charge.					
a	upto depth of 2m	SQM	1500			0.1400591321
b	Depth exceeding 2 m but not exceeding 4 m	SQM	100			0.0116715943
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.					
201	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 upto depth of 10m from FFL. (For depth greater than 10m from FFL, extra over for additional depth to be paid in Item No 224). (Cement shall be issued by BHEL free of cost)	CUM	1472			1.7944168512

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing below finished floor level upto a depth of 10m from FFL(For depths greater than 10m from FFL, extra over for additional depth to be paid in Item No 224), for the following. (Cement shall be issued by BHEL free of cost)					
b	M 25 Grade	CUM	6472			8.4659140107
206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing upto 10m level above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 225), for the following. (Cement shall be issued by BHEL free of cost)					
b	M 25 Grade	CUM	892			1.2089685262
c	M 30 Grade	CUM	4525			6.1746696653
207	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system but including TG foundation Columns with addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing. (Cement shall be issued by BHEL free of cost)					
b	M 35 Grade	CUM	4000			6.0323410565

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ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A208	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations supported on vibration isolation system (excluding supply and installation of vibration system) and top deck of TG foundation at all levels including addition of suitable plastisizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, leveling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc, but excluding formwork, staging, reinforcement, embeddments and temperature control of concrete. (Cement shall be issued by BHEL free of cost) Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.					
Ad	M 50 Grade	CUM	5371			12.3348576199
A209	Extra over St. No. 205 to 208 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	9371			3.1191990057
210	Extra over ST Nos. 205 to 207 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	428			0.0429238012

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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. (Cement shall be issued by BHEL free of cost)					
c	M30	CUM	145			0.3260236534
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	26			0.0076389980
b	Reinforced cement concrete of all grades	CUM	107			0.0482388723
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	535			0.0112577931
217	Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	86			0.0001480477
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	54			0.0044722740
225	Extra over item no. 206 and 212 for height above FFL (Finished Floor Level) as per following:					
a	Height exceeding 10m from FFL but not exceeding 20m	CUM	3931			0.4112300386

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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	26536			6.7486321734
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	8922			2.7308501250
A303	Plywood Formwork with filmface of required thickness and smooth surface for TG superstructure (above base raft level) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights.	SQM	6100			10.4722396572
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	50			0.0038268420
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	50			0.0063892613
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	50			0.0113716632
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	50			0.0177942101
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	50			0.0256327664

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

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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.					
403	Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR or HCRM or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (BHEL to supply steel free of cost)	MT	3235			13.2661775289
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.					
A511	Providing and applying two coats of bitumen paint of minimum 150 micron DFT with suitable primer, conforming to IS 9862 with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces including surface preparation etc. all complete.	SQM	1730			0.0843371540
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.					
d	50 mm wide joints	SQM	720			0.4203848914
603	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves (10 mm thick backer rod to be paid separately):					
a	25mmX25mm groov size	RM	519			0.0634173917
A605	Supply and instalation of Polystyrene flexible board confirming to IS 4671 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	871			0.5521973043
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
d	230 mm wide and 6 mm thick	RM	77			0.0045712304

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BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

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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 of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	120			3.4012236303
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	32			0.2211804592
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	40			0.3012020628
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	470			0.0109712987
b	PVC pipes / conduits of all diameters	Kg	570			0.0625856826
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.					
A1001	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. (Cement shall be issued by BHEL free of cost)					
a	Using table moulded/machine made fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	189			0.2914552729

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
1005	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	2			0.0011423753
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.					
A1201	Providing 18mm thick plaster in two layers outside the building/boundary wall/rough surface of internal 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. (Cement shall be issued by BHEL free of cost)	SQM	8922			0.8125020458
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.					
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	767			0.0513939694
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	8922			0.6889297410

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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.					
A1436	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)	SQM	1270			0.9687604863
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 thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum 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	2294			1.1212292610
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	3046			2.8265777261
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.	MT	145			3.6204838962
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.					

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
A2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. 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 with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. 2007/A2008)	RM	650			0.4995874660
A2008	Supply, fabrication and fixing of mild steel posts for fencing including painting with chlorinated rubber paint over a suitable primer etc all complete.	MT	64			1.8756811193
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	3			0.0982281380
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.					
2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.					
a	Minimum galvanisation of 610 g/sqm	MT	10			0.3828859320

PROJECT: 2X800 MW NTPC LARA TPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

BOQ CUM RATE SCHEDULE (REVISED) - Annexure - 1

SCOPE OF WORK:- CIVIL & ARCHITECTURE WORKS OF TG FOUNDATION AND TRANSFORMER YARD OF UNIT-1 AND UNIT-2 AT 2X800 MW NTPC LARA STPP STAGE II, RAIGARH, CHHATTISGARH STATE, INDIA

ST NO	ITEM DESCRIPTION	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
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.	KG	30			0.0010028926
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	2			0.0049464505
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	2			0.0131113792
b	In fabrication yard	MT	2			0.0104450683
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 and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment 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	2			0.0075574294
	TOTAL AMOUNT					100